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Eftekhari, Nazanin

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THE AFTERMATH OF NEW VENTURE FAILURE

**BY
NAZANIN EFTEKHARI**

DISSERTATION SUBMITTED 2020



AALBORG UNIVERSITY
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PhD supervisor: Associate Professor Bram Timmermans
Aalborg University

Assistant PhD supervisor: Professor Michael S. Dahl
Aarhus University

PhD committee: Associate Professor Jesper Lindgaard Christensen (chair.)
Aalborg University

Professor Lene Foss,
The Arctic University of Norway

Professor Siri Terjesen,
Florida Atlantic University

PhD Series: Faculty of Social Sciences, Aalborg University

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SUMMARY

New ventures are pivotal for job creation in societies. They have been an attractive choice not only for founders who wish to start their own business but also for skilled individuals seeking employment. New ventures could be an opportunity for individuals to improve their skillset as they have more freedom in new ventures than in large firms. However, high rate of failure and dissolution among new ventures could affect individuals' working life. On one hand, the experience could be the basis for subsequent success in other organizational settings as departing individuals' entrepreneurial experience can represent a beneficial resource. On the other hand, high uncertainty in startups and liabilities of newness and smallness may have negative consequences for individuals. The aim of this dissertation is to study the consequences of new venture failure on different groups of actors engaged in entrepreneurial activities. To do so, the overall research question that guides this dissertation is: *What are the consequences of new venture failure on different stakeholder groups involved in entrepreneurial activities?*

Overall, this dissertation has 5 Chapters, including a synopsis, three main studies, and a background study. Chapter 1 is the synopsis that discusses the major knowledge gap leading to the broad research question, which is followed by two sub-questions. Furthermore, in this Chapter, I overview the theoretical background related to each study. I also introduce the methodology approaches (i.e. qualitative and quantitative methods) that I adopted in this dissertation, their strengths and weaknesses. Then, I discuss the main conclusions and contributions of the four studies in this dissertation.

Chapter 2, "*Entrepreneurial failure: Distinct perceptions among founders, employees, and investors*", aims to understand failure from the viewpoint of different groups of stakeholders (i.e. founders, employees, and investors) in entrepreneurial activities. Findings of this study show that depending on individuals' expectations about startups and the consequences that affect them, each group has a

different understanding of failure. Another interesting finding is that there are hidden misalignments in the purpose for joining startups among different groups. This can be one of the reasons for their tensions, particularly between founders and investors.

Chapter 3, “*Falling off the unicorn: the structural shortcomings of startup employment*”, is the study addressing the experiences and consequences of employment in startups. Results of this study show employees are biased about what they expect to gain out of the experience of working at a startup, and what the startup provides them. These biases might be due to the characteristics of new ventures, since investors and founders do not uncover unrealistic expectations for employees, as startups need skilled individuals.

Chapter 4, “*Till death do us part? New venture dissolution and enduring work relationships*”, investigates whether NVTs keep their ties and work together after the dissolution of new venture, and to what extent they might intend to do so. Findings show that technical people with prior joint work experience co-move. There is a tendency to establish their business among co-movers. Co-movers are the individuals whose human capital is homogenous (i.e. age, education, gender, occupation).

Chapter 5, “*Open for entrepreneurship: How open innovation can foster new venture creation*”, is a background paper which aims to explore how an open ecosystem can affect individuals in entrepreneurial activity to survive their business with respect to the challenges of high rate of failure among startups. The results of this study were the base for developing Study 1 in this dissertation. The findings show that ecosystem collaboration, user involvement and an open environment can be beneficial for the survival of startups. Moreover, the entrepreneurs’ mindset moderates the impact of these three mechanisms on the startups’ survival.

RESUME

Nyopstartede virksomheder er afgørende for nye jobmuligheder i samfundet. Det har været et attraktivt valg for grundlæggerne og åbner samtidigt arbejdsmuligheder for talentfulde jobsøgende. Nyopstartede virksomheder giver ofte de arbejdssøgende større frihed til at udvikle deres færdigheder end hvad de normalt ville få i et stort veletableret firma. På den ene siden, den erfaring som medarbejderen får ved at være en del af en nyopstartet virksomhed, unaset om den er nedlagt, setter medarbejderen en god position for efterfølgende jobsøgning. På den anden side, at være del af en nedlagt nysopstartet virksomhed sender en negativ signal. Målet med denne afhandling er at studere konsekvenser af nedlæggelse for dem som er involveret i nyopstartet virksomheder. Afhandlingen er dermed baseret på den følgende overordnede undersøgelsesspørgsmål: *Hvad er konsekvenserne af konkurs i en nyopstartet virksomhed til forskellige stakeholders, som deltager i iværksætteraktiviteter?*

Denne afhandling indeholder 5 kapitler, herunder synopsis, tre hoved studier og en baggrundsundersøgelse. Kapitel 1 indeholder synopsis, som diskuterer problemet der leder til det undersøgelses spørgsmål, som er efterfulgt af to underspørgsmål. Ydermere undersøger jeg den teoretiske baggrund, som er relateret til hver enkelt studie. Jeg intruducerer også de kvantitativ og kvalitativ metodisk tilnærminger, samt deres styrker og svagheder. Afslutende diskuterer jeg afhandlingens konklusionerne, og bidrager af de 4 hoved studier.

Kapitel 2, "*Entrepreneurial failure: Distinct perceptions among founders, employees, and investors*", giver en forklaring på de udfordringer at forskellige stakeholders kan stå over for (for eksempel: iværksætter, ansatte og investorer) i forbindelse med nyopstartet virksomheder. Det resultat af undersøgelsen viser at afhængigt af de enkelte parter forventninger, har stakeholderne forskellige opfattelse af hva betyder at har fejlet. En anden vigtig opdagelse i undersøgelsen, viser at der ofte er misforståelser mellem de forskellige stakeholders, i forbindelse

med formål ved at deltager i den nyopstartet virksomhed. Især mellem iværksætter, og investorene.

Kapitel 3, *“Falling off the unicorn: the structural shortcomings of startup employment”*, omhandler de oplevelser og konsekvenser som en medarbejder oplever i en nyopstartet virksomhed. Det resultat af undersøgelsen viser at medarbejder i en nyopstartet virksomhed, ofte er partiske over hvad de får ud af erfaringen og hva deres arbejdet kan give dem. Disse skævheder kan skyldes selv egenskaberne ved nyopstartet virksomheder, siden investorer og stiftere ikke imødekommer urealistiske forventninger til medarbejdere, da nyopstartede har behov for dygtige personer.

Kapitel 4, *“Till death do us part? New venture dissolution and enduring work relationships”*, omhandler om en anden gruppe af stakeholders, nemlig iværksætterhold. Studiet udforsker om iværksætterholder beholder den tætte bånd etter virksomheden nedlægges, og vælger at arbejde sammen senere. Undersøgelsen viser en tendens at iværksætterer med ligende humankapital (i.e., samme alder, uddannelse, køn eller beskæftigelse) vælger at samarbejde igen.

Kapitel 5 indeholder baggrunds artiklen *“Open for entrepreneurship: How open innovation can foster new venture creation”*, som omhandler hvordan åben økosystemer kan have effekt på den innovative proces i opstarts processen ved en ny virksomhed, kan overleve med den overhængende fare for at fejle. Resultatet af denne undersøgelse lægger grund for at udvikle problemstillingen i denne afhandling. Konklusionen af undersøgelsen er at samarbejd i økosystemer, brugers engagement og et åben arbejdsmiljø har positiv indvirkning på chancen for at den nyopstartet virksomhed overlever. Derudover, grundlæggernes tankegang virker som moderator til indvirkningen af disse tre mekanismer på nyopstartede overlevelse.

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Chapter 1. Synopsis

1.1 Introduction

Entrepreneurship has been receiving more attention from scholars because it has a valuable effect on economic development (Carree & Thurik, 2010; Lee, Yamakawa, Peng & Barney, 2011; Van Stel, Carree & Thurik, 2005). Furthermore, entrepreneurship is believed to have a positive role in innovation and growth (Audretsch & Keilbach, 2010). Job creation is another significant outcome of entrepreneurship (Haltiwanger et al., 2013; Neumark et al., 2011) where recent studies demonstrate that a large proportion of employment growth can be ascribed to startups (Anyadike-Danes & Hart, 2015). In some countries, up to 10 percent of new jobs are created through entrepreneurial activities (Neumark et al., 2011). Policymakers and practitioners are increasingly focusing on promoting entrepreneurship activities; they believe entrepreneurship could be the source of economic growth (OECD, 2017; Sorenson et al., 2019; Stemler, 2013) because the creative knowledge and competences applied in establishing a new business can lead to job creation and new skills training, all of which influence the development of society (Baum & Silverman, 2004).

Despite these positive effects, entrepreneurship is also characterized by uncertainty (Alvarez & Barney, 2005), risk-taking behavior (Sommer, Loch & Dong, 2009), resource constraints (Yli-Renko, Autio & Sapienza, 2001), and market entry challenges (Alvarez & Barney, 2010). Given the situation under which entrepreneurs build their business, it is not surprising that a large number of entrepreneurs abandon their startup efforts, voluntarily or otherwise forced, even within a short period after they are established (Dahl & Reichstein, 2007; Kirchoff, 1994). In some instances, this abandonment is referred to in more neutral terms, such as an exit (Wennberg et al., 2010; Wennberg & DeTienne, 2014). In most cases, however, it is surrounded by an air of negativity because it is often the result of not achieving certain objectives. Such events are thus commonly regarded as failures, where one uses terms such as closure, dissolution, and even death (Balcaen et al., 2012; Bates, 2005;

Cope, 2011; Coad, 2014; Head, 2003; Jenkins & McKelvie, 2016; Ucbasaran et al., 2013; Wennberg & DeTienne, 2014).

Historically, new ventures that failed have not received much attention, as there are cognitive biases in understanding the survival and growth of entrepreneurial ventures. However, as with most often-occurring events, there has been increasing interest in understanding the failure phenomenon in detail, particularly in the last decade (e.g., Jenkins & McKelvie, 2016; Jenkins & McKelvie, 2017; Minniti & Bygrave, 2001; Lin, Yamakawa & Li, 2019; Shepherd, 2003). New venture failure is seen as a negative event, and indeed it involves the loss of something dear to those involved. Much of the research has therefore found adverse financial, emotional, and social effects on individuals (Cope, 2003; Singh et al, 2007; Ucbasaran et al., 2013). For instance, failure may result in decreased self-efficacy and feelings of grief, which may hinder learning from the failure (Cope, 2011). Consequently, these feelings may adversely affect entrepreneurs' motivation to continue entrepreneurial activities (Shepherd et al., 2009).

However, failure does not only have negative consequences; it also can lead to positive externalities for the entrepreneur. Failure can potentially be important in terms of entrepreneurs developing knowledge and skillsets that are vital resources for subsequent entrepreneurial activities, as the literature on learning from failure has highlighted (Minniti & Bygrave, 2001; Nielsen & Sarasvathy, 2016; Politis & Gabrielsson, 2009). Alternatively, through entrepreneurial recycling, low-performing activities can be transformed into high-performing ones either in the form of new established ventures or being integrated in an established firm, as the released resources may be put to new and more productive use (Baum & Silverman, 2004; Knott & Posen, 2005). This might then increase the overall competitiveness, which may stimulate innovation (Davidsson, 2008). It can also lead to a dynamic economy and positive economic development (Pe'er & Vertinsky, 2008). Thus, new venture failure can potentially play an important role in positive societal outcomes.

Despite the increasing interest in understanding failure, much of this research revolves around the (single) entrepreneur, including their motivation to re-launch a new venture, the physiological and behavioral effects of failure, and learning from failure (Dahlin, Chuang & Roulet, 2018). This is surprising, as it is a well-established fact that entrepreneurship is seldom an activity conducted by a single entrepreneur; rather, entrepreneurship involves a team (see, e.g., Gregori, Ukobitz & Parastuty, 2018; Klotz et al., 2014). Not only is this common but the evidence also shows new ventures founded and led by new venture teams (NVTs) achieve better results than single-founded ventures (Gregori et al., 2018; Lechler 2001; Stam & Schutjens, 2006).

Furthermore, the entrepreneur often relies on the involvement of others who contribute to the new venture, either in terms of labor or providing financial support and advice (Hayward, Shepherd & Griffin, 2006). Due to the small and flat structure of new ventures and the high involvement and commitment of these stakeholders they will also be affected by the ups and downs of new ventures but may not in the same way. These stakeholders will also be affected by the failure of the new venture, but they are rarely the object of investigation in studies on failure.

How different groups of stakeholders (i.e., NVTs, employees, investors, founders) respond to failure and how their work life may be affected by failure can have important implications for entrepreneurship research. Because the motivation, expectations, and experiences of different groups of stakeholders differ (Roach & Sauermann, 2015), how they are affected by failure can be distinctive from one to another group. For instance, new venture employment has been an attractive choice for skilled employees and a satisfactory place to work (Benz & Frey, 2008). However, it involves instability and the risk of failure, which may turn challenging experience. Therefore, understanding the effect of working in new ventures and how new venture failure can impact the working life of stakeholders other than entrepreneurs can have important implications for the entrepreneurship process.

In this dissertation, I dig deeper in the consequences of new venture failure for different stakeholders. In particular, this dissertation explores what the different stakeholders gain from being involved in new ventures and highlights future career implications. Specifically, I look at employees and NVTs in two separate studies. I also touch upon investors, founders, and employees in another study to understand perceptions of failure related to the failure experience of these groups of stakeholders. By drawing on two rich datasets, one gathered through a large set of qualitative interviews and one based on register data, this dissertation aims to contribute to the entrepreneurship literature by investigating new venture failure and its consequences.

This introductory section consists of four parts. It starts with an overview of new venture failure and its consequences for different groups of stakeholders. This forms the foundation for formulating the research questions. It is followed by an explanation of the research approach to answer the research questions. The section concludes by detailing the overall structure of the dissertation.

1.1.1 After new venture failure: stakeholders' perspectives on new venture post-failure

Conducting research on new venture failure is inherently difficult. First, a detailed analysis of failed businesses is difficult, as data on startups often has a strong survival bias (Wennberg, 2009). Finding and contacting failed startups and their founders is a difficult and time-consuming process because contact information is seldom available. Trying to contact other stakeholders is even more difficult. Even if these individuals are identified, they may be reluctant to talk about their experiences because of the stigma associated with failure or because they do not consider their business to be a failed venture (Zacharakis et al., 1999).

Despite the challenge of addressing this phenomenon, it is an important issue to tackle as the literature on learning from failure recognizes that failure often does not mean the end of the entrepreneurial process (Shepherd, 2003; Ucbasaran, et al., 2010; Ucbasaran et al., 2013). Many vital entrepreneurial resources, including

technology, financial assets, and human resources, do not disappear with the failure of the new venture and can possibly be used in recognizing new opportunities. In this situation, the well-known saying that “life goes on” is valid. This is true for the entrepreneur and the other stakeholders involved.

Compared to a single-founded new venture, entrepreneurship involves team of individuals (Gartner et al., 1994; Lazar et al., 2019). Because team-based startups have the potential for improved performance compared to individual-based ones, there is a growing tendency to run a business with a team (Klotz et al., 2014). In the challenging situation of closing a new venture, NVT members may decide to continue working with each other because they are aware of their skills, knowledge, and competences, which facilitate communication and more effective collaboration. Such close ties may result in re-starting the new venture in the form of a serial new venture team. Therefore, understanding the extent to which the mobility of NVTs lead to keep their ties can have important implications for the performance of entrepreneurship activities.

Employees are crucial stakeholders in developing and launching a product. Studies show that a large number of highly skilled science and engineering graduates are employed in startups (Neff, 2012; Roach & Sauermann, 2015). Working for a startup can potentially have positive and negative effects on employees. On one hand, employees may have opportunities for developing more skills as they acquire more responsibilities and take on different tasks. On the other hand, they might not gain the specialization that is often required to be employed in established firms (Sorenson et al., 2019). One approach to determining the outcomes for new venture employees is to investigate how working for a new venture and being involved in entrepreneurial activity can shape their entrepreneurial abilities in order to gain the skills needed to go from paid employment to self-employment (Sørensen & Fassiotto, 2011). Another line of studies is to investigate the earning effects of new venture employment, which depend on the size of the firm and on whether one is an early or a late joiner. However, it is likely that employees will have decreased earnings as a consequence of working for a new venture (Sorenson et al., 2019). Yet,

in this regard, understanding how employees experience working for new venture and how they are affected by ups and downs of startups can have important implications in benefiting from entrepreneurship activities as employee.

Other central stakeholders include the investors, who through their investments and competences have a significant impact on the growth of startups. In addition to providing funding, investors can have other effects on new ventures, including in relation to operating services, networks, and moral support (Davila, Foster & Gupta, 2003; Fried & Hisrich, 1995). As the major source of financing, investors can be affected negatively by the failure of a new venture. Therefore, understanding how investors experience failure can have important implications for successful entrepreneurship processes.

1.1.2 Research questions

Given the above, different stakeholders are involved in entrepreneurship activities for different reasons, such as getting ideas into practice, expanding social networks, developing skills, or generating wealth (Carter et al., 2003; Wennberg, 2009). These motivations vary among different groups of stakeholders (i.e., founders, employees, investors, NVTs), as each group may engage in entrepreneurship activities for different purposes and expectations. When the new venture is forced to close down (due to bankruptcy, poor performance, or people's decisions), it is important to see what happens to different individuals as the main resources conveying knowledge, skills, entrepreneurship capabilities, and experiences. Yet, little attention has been paid to the aftermath of new venture failure for different groups of stakeholders in entrepreneurship activities, including whether their expectations are fulfilled and to what extent they intend to remain involved in entrepreneurial activities after the closure/failure. This dissertation addresses these questions, focusing on the different stakeholders in entrepreneurship activities, including employees, NVTs, investors, and founders. Accordingly, the main research question is as follows.

What are the consequences of new venture failure on different stakeholder groups involved in entrepreneurial activities?

I separated the primary question into two topics. The first addresses the effects of failure on different actors. The second addresses the working lives of the actors after failure. I broke down these two topics, described below.

Founders are not the only actors involved in entrepreneurial activities who are affected by new venture failure. Investors and employees also play a pivotal role in the process of starting a new venture and are also affected by its dissolution. Investors are the main source of risk management that make investment decisions in uncertain circumstances (Aldrich, 1999), and employees are at the heart of product and service development and have a complementary role to founders in entrepreneurial activities. As the ones experiencing the ups and downs of a startup, both investors and employees are affected by the financial, psychological, and social costs of failure (Ucbasaran et al., 2013). Given that all these actors have different roles and responsibilities in entrepreneurial activities, they are not affected by new venture failure in the same way. Failure may have different implications for each group based on their experience of failure and their position in the new venture. In the first sub-question, I address the different actors' differing perceptions of failure.

Sub-question 1: How do different actors (i.e., founders, investors, and employees) perceive failure based on their experience of failure outcomes?

Although the vast majority of new ventures dissolve within a short period of time after their launch, many of their resources do not simply disappear. Individuals as the main sources of job creation and economic development (Carree & Thurik, 2010) in entrepreneurial activities will act in other organizational settings after a new venture fails. As the research shows, this mobility is accompanied by diffusing knowledge and information, which is valuable for recognizing new opportunities in order to continue the entrepreneurship process (Campbell et al., 2014). In this dissertation, I rely on different perspectives to examine life after a new venture (failure) for two groups of actors involved in entrepreneurial activity, i.e., employees and NVTs. Both groups are very important in new ventures; however, there is a lack of focus on them in the literature. Teams are important, as team-based ventures have

the potential for greater performance compared to ventures undertaken by individuals (Klotz et al., 2014). Employees are also important, but we do not know how they experience new ventures and their post-startup life. Employees are essential in entrepreneurship, as they themselves might become successful entrepreneurs (Sørensen & Fassiotto, 2011). Therefore, the second sub-question is as follows.

Sub-question 2: *What are the outcomes of new venture failure for employees and NVTs?*

1.1.3 Research structure

The three main studies in this thesis (Chapters 2–4) have been developed to answer the research questions. Study 1 (Chapter 2), “*Entrepreneurial failure: Distinct perceptions among founders, employees, and investors*” addresses the first research question, where the perceptions of failure are explored from a novel perspective of three main stakeholders in new ventures, i.e., founders, employees, and investors. In particular, this study explores how each group perceives failure in terms of their experience and the outcomes of a new venture.

The second question is addressed by Study 2 and Study 3. Following the outcomes of working in a new venture, Study 2 (Chapter 3), “*Falling off the unicorn: The structural shortcomings of startup employment*”, investigates what employees gain (e.g., experience) from new ventures and whether their experiences match with their reasons for joining a new venture. This study deals with the outcomes of working in new ventures in general and also discusses failure outcomes.

Study 3 (Chapter 4) approaches the outcomes of a new venture (failure) from another perspective. Titled “*Till death do us part? New venture dissolution and enduring work relationships*”, this study investigates the outcomes of new ventures for NVTs. This study explores NVT co-mobility after the termination of a new venture, described as “dissolution”. Dissolution refers broadly to the end of a venture. This end might not be limited to failure; it might also be a decision to close

the business to pursue other goals, which is a limitation of the dataset in this study. However, we make a distinction between low-performance and high-performance dissolution (Wennberg et al., 2010). By considering the (low) performance up to dissolution, we come close to Shepherd's (2003) definition of failure, which is discussed in more detail in the next section.

I have included a fourth study (Chapter 5) in this dissertation as a background and a basis on which to form Study 1. This study, *“Open for entrepreneurship: How open innovation can foster new venture creation”*, addresses the failure and survival of new ventures in terms of open innovation approach and investigates how open ecosystems can impact the actors to survive their startups in terms of the main challenges of new ventures in these ecosystems. According to one of the findings, entrepreneurs' mindsets can play a moderating role in the probability of new venture survival. This was the basis for the idea of developing Study 1, in which individuals' perceptions and how they understand the failure phenomenon based on their experience of entrepreneurship activity is explored.

In Table 1, I summarize the approach of each study.

Table 1: Summary of approaches for the three main studies

	Research question	Group of actors	Outcome of the new venture			Level of analysis	Research design approach
			Failure	Dissolution	Left by actors		
Study 1	Sub-question 1	Founders, employees, investors	✓			Individual	Qualitative, 86 in-depth interviews in Denmark and the US
Study 2	Sub-question 2	Employees	✓	✓	✓	Individual	Qualitative, 86 in-depth interviews in Denmark and the US
Study 3	Sub-question 2	NVT	✓	✓		Team	Quantitative, IDA database, sample of 11,903 NVT members, affiliated to 2403 new ventures

1.1.4 Structure of the dissertation

This dissertation consists of several parts. This first part, the synopsis, includes an introduction, an overall theoretical framework, the research methodology, synthesized conclusions of the different studies, and an overview of the dissertation's contributions to entrepreneurship research, practice, and policy. Following this synopsis, I present the four studies that address the research questions of the dissertation in different ways. These studies are presented in article form in separate chapters.

1.2 Theoretical framework

In this section, I address two main theoretical foundations of this dissertation. First, I shed light on the concept of failure, including various descriptions of failure in the literature and the issues related to failure (i.e., the costs and benefits of failure). I then illustrate the importance of understanding how different actors in entrepreneurial activities can perceive failure. Afterwards, I review theories on the outcomes of new venture dissolution, focusing on different groups of stakeholders in entrepreneurial activities (employees and NVTs).

1.2.1 New venture failure definition

In entrepreneurship research, failure can be understood in various ways, depending on the context and scope of the research. It is important to have a clear description of failure in both entrepreneurship theory and practice. Ucbasaran et al. (2013) argue that a clear definition of failure affects the processes and outcomes of the observations of the study, and it allows for comparisons among different studies. Researchers have applied various definitions in a number of different ways. In this section, I provide an overview of definitions of failure from different perspectives in the literature. To clarify how the various definitions differ from each other, I have categorized them into four main themes: (1) failure as the termination of a business; (2) failure as a low-performing business; (3) failure as low performance below a

certain expectation threshold; and (4) failure as bankruptcy. Table 2 lists the key characteristics of these definitions.

Table 2: Summary of failure definitions in the literature

Theme	Sample publications	Summary
Termination of the business	Bruno et al., 1992; Singh et al., 2007	Discontinuance of the business (i.e., exit) due to various reasons, including legal problems, retirement, shifting to a new business
Low-performing business	Coelho & McClure, 2005; Shepherd, 2003	Termination of the business due to poor performance (costs exceeding revenues)
Low performance below a certain expectation threshold	Cannon & Edmondson, 2001; Ucbasaran et al., 2010; Ucbasaran et al., 2013	Closing the business because it has not met the entrepreneurs' expectations
Bankruptcy	Shepherd & Haynie, 2011; Zacharakis et al., 1999	Discontinuance of the business based on observable, recorded events

Failure as the termination of the business: This view is based on the definition by Bruno, Mcquarrie, and Torgrimson (1992), who view failure as the discontinuance of a business for reasons such as legal problems, partnership disputes, or a shift in interest in continuing with the same business. Singh, Corner, and Pavlovich (2007) use this definition to keep the concept of failure broad enough for the purpose of taking a holistic view in their study. Earlier studies view the discontinuance of a business (i.e., exit) as failure, which includes not only closing a business but also selling a business for reasons such as retirement, poor health, or wishing to move on to another venture or industry (Watson & Everett, 1996). In recent studies, however, there appears to be another view, where failure is not necessarily equated with an exit because exiting a firm might occur for reasons other than failure, including exiting with success (Wennberg et al., 2010). Therefore, the term “exit” is used to mean exiting a firm because of the founder’s decision or because the exit is impelled by low performance. In this definition, failure is synonymous with exit (Shepherd & Wiklund, 2006). However, in this definition the performance of the firm is not

captured at the exit moment because the exit may be for different reasons than failure, such as a founder makes a decision to pursue employment career in established firms (Headd, 2003). Therefore, the exit cannot be considered a failure (Davidsson, 2008) unless there are personal failures that prompted it.

Failure as a low-performing business: This perspective on failure is narrower than the previous one. This definition tries to distinguish failure from exit by equating failure with insolvency (Shepherd, 2003). In this view, a business is considered to have failed when the business cannot survive in the market because costs exceed revenues such that continuing the business would not be reasonable (Coelho & McClure, 2005). Shepherd (2003:318) provides a similar definition when he states that “failure occurs when a fall in revenues and/or a rise in expenses are of such a magnitude that the firm becomes insolvent and is unable to attract new debt or equity funding; consequently it cannot continue to operate under the current ownership and management”.

However, the magnitude of the costs is not determined in this approach and may differ according to stakeholder. In this approach, a business may be sold or merged with another firm in order to avoid bankruptcy. This perspective on failure is applied in some conceptual studies to understand how entrepreneurs might react to new venture failure (Shepherd, 2003; Shepherd & Haynie, 2011) in coping with failure and the loss of the business (Shepherd & Haynie, 2011).

Failure as low performance below a certain expectation threshold: Some studies go into greater detail and emphasize that entrepreneurs’ expectations are important in measuring economic performance. In particular, this approach upholds the general notion of low economic performance in relation to new venture failure (Coelho & McClure, 2005; Shepherd, 2003) but adds that entrepreneurs’ threshold for poor performance should be taken into account. In this regard, Ucbasaran et al. (2010) define failure as the sale or closure of a new venture because it has not met the entrepreneur’s expectations. Cannon and Edmondson (2001) have the same idea and conceptualize failure as “deviation from expected and desired results” (Cannon &

Edmondson, 2001: 162). This perspective reflects the differing thresholds for low performance among entrepreneurs. Similarly, Ucbasaran et al. (2013) refine the definition of failure as “the cessation of involvement in a venture because it has not met a minimum threshold for economic viability as stipulated by the entrepreneur” (Ucbasaran et al., 2013: 175). This subjective perspective suggests that with the same level of performance, different entrepreneurs may have different views. One may consider the new venture as a success, and another may interpret it as a failure (Gimeno et al., 1997). This definition can be applied in studies that compare habitual entrepreneurs with unexperienced entrepreneurs (Ucbasaran et al., 2010).

Failure as bankruptcy: A narrow perspective of failure is simply defining it as bankruptcy, which relies on observable evidence. Such a definition is appropriate for operationalizing failure and for forming samples (Zacharakis et al., 1999) as bankruptcy signals a failing venture (Shepherd & Haynie, 2011). However, failure is broader than bankruptcy, as there are other indications involved in failure that may be overlooked in this narrow approach. For example, interpersonal conflicts among new venture members and personal obligations can create major issues that result in the termination of a business (Singh et al., 2007).

The above categorization shows that new venture failure has been operationalized in a number of different ways from very narrow to very broad perspectives. The choice of each category for defining failure is connected to the intentions of the researcher.

As the review of definition of failure shows, there are different definitions that rely on the operationalization of new venture failure without paying attention to the individual experience of failure (Ucbasaran et al., 2013). This is an important gap to address because there is a need to understand how people active in entrepreneurship conceptualize business failure. In Study 1 (Chapter 2), I address three main categories of individuals, including founders, investors, and employees, and investigate how they perceive failure. Understanding failure from the individual viewpoint can reveal some hidden issues in startups, such as inter-relationships

among different actors and the psychological costs of failure for each stakeholder (Ucbasaran et al., 2013).

1.2.1.1 Definition of failure in this dissertation

To define failure, I have applied different approaches that are presented in existing studies. Depending on the research question and aim for each study, I used different definitions. In Study 1 and Study 2, new venture failure is defined based on a subjective perspective whereby failure is described by interviewees. The purpose is to understand the interpretation of people involved in entrepreneurship activities. In Study 3, due to the limitations of the database in distinguishing failure, we followed Wennberg et al. (2010) who described different exit routes and made a distinction between exiting after low performance and exiting after high performance. In this study, we define the failure of a new venture as low-performing dissolution, which is in line with the definition of Shepherd (2003:318). In this definition, “failure occurs when a fall in revenues and/or a rise in expenses are of such a magnitude that the firm becomes insolvent and is unable to attract new debt or equity funding; consequently it cannot continue to operate under the current ownership and management.”

1.2.2 Understanding the costs and benefits of new venture failure

Failure can potentially be an upsetting experience that hinders learning and the continuation of entrepreneurial activities (Cope, 2011; Shepherd, 2003). However, it might be beneficial for society because valuable knowledge can be reassembled to create a new business (Hoetker & Agarwal, 2007; Knott & Posen, 2005). The purpose of looking at the costs and benefits of new venture failure is to show the importance of business failure in entrepreneurship and why we need to understand it in depth.

Costs of new venture failure

Generally, failure is an undesirable condition that may negatively affect the entrepreneurial process. Failure can manifest in the form of loss of income and an

increase in expenses. These may be loss of the investment or increasing expenses, both of which can lead to an exit. Other costs of new venture failure are emotional, including feelings of anger, humiliation, pain, and blame (Cope, 2011; Shepherd, 2003; Singh et al., 2007; Singh, Corner & Pavlovich, 2015), that can manifest in the form of depression that is severe enough to adversely affect individual motivation (Singh et al., 2007). This can lead to a diminished belief in one's ability to do specific tasks successfully and can hinder general task performance (Shepherd, 2003). The experience of entrepreneurial failure may generate feelings of uselessness and undermine entrepreneurs' self-confidence and their belief in success, which can lead to a loss of motivation to continue entrepreneurial activities (Jenkins et al., 2014; Shepherd, 2003; Ucbasaran et al., 2013). Not accepting failure can lead to delaying the termination of a business. By doing this, extra personal funding and investment may be required to keep the business going. However, this extra spending may not help avoid failure. As a result, the financial loss can aggravate negative emotions, which can lead to diminishing opportunity recognition and the diminished likelihood of continuing any entrepreneurial activity (Shepherd et al., 2009). Failure may also impact personal and professional relationships and can result in the loss of one's social network (Ucbasaran et al., 2013). Due to the stigma associated with failure, the quality of social relationships may decrease. Stigma may also lead to negative discrimination in terms of employment opportunities and access to resources (Shepherd & Haynie, 2011). On a related note, the stigma associated with failure might make an entrepreneur choose to no longer be involved in the entrepreneurship, which could have damaging effects on the economy and society (Ucbasaran et al., 2013).

Benefits of new venture failure

The benefits of failure are often highlighted in the literature on learning from failure (Nielsen & Sarasvathy, 2016). Entrepreneurs can learn from failure by using information about why their business failed to get feedback, improve their knowledge, and learn how to manage their business more effectively (Shepherd, 2003). Using this knowledge can involve different factors, such as relationships with

external stakeholders, building new partnerships, and understanding the market and challenges of the business (Cope, 2011; Singh et al., 2007). Entrepreneurship is a learning process (Minniti & Bygrave, 2001), as it involves uncertainty. Failure is part of this process, and it means that something was wrong with the process. This is why researchers believe failure encourages learning, as most entrepreneurs want to understand what led to the failure (Politis, 2005; Ucbasaran et al., 2009). Additionally, learning can take the form of behavioral changes (Daft & Weick, 1984; Huber, 1991). While success may enhance one's confidence, failure motivates a change in one's mentality and behavior in terms of business development (Sitkin, 1992). Many entrepreneurs who have experienced business failure have strong intentions to start subsequent businesses (Hessels et al., 2011; Stam & Schutjens, 2006). This may be as a consequence of learning from failure (Ucbasaran et al., 2013). The research has shown that entrepreneurs with such experience can identify more business opportunities within a given period than those without such experience (Ucbasaran et al., 2009). In sum, business failure seems to serve both as an opportunity to learn and continue the entrepreneurial process and an adverse motivation to continue entrepreneurship activities.

1.2.3 New venture failure and the implications for different stakeholders

New ventures are becoming an increasingly important part of the economic system because they are considered pivotal sources of job generation and economic growth (Reynolds & White, 1997). Understandably, new venture success, growth, and the major determinants for survival (e.g., Eftekhari & Bogers, 2015; Klepper, 2002; Shane, 2003) have received the most research attention (Santarelli & Vivarelli, 2007). Few studies on entrepreneurial failure mainly address the causes of failure (e.g., Correa et al., 2017; Zacharakis et al., 1999), new venture performance, and venture exit (e.g., Nielsen & Sarasvathy, 2018; Wennberg et al., 2010).

Previous studies mainly focus on the experience of entrepreneurs, the startup's performance (Dahl & Reichstein, 2007; Geroski et al., 2010; Klepper, 2002), or the differences in the performance effect on employees in terms of pursuing other

opportunities (Klepper & Thompson, 2010). Yet, the experience and consequences of working in startups still have not been studied. In my dissertation, I approach the consequences of new venture (failure) for different groups of stakeholders in entrepreneurial activities, including employees and NVTs. Studies 2 and 3 look at the outcomes of new ventures. In Study 2 (Chapter 3), the effect of working in a startup on employees is addressed, as they are one of the critical elements in entrepreneurship even though they are often disregarded in the existing research that focuses on founders. In Study 3 (Chapter 4), NVTs are addressed in investigating the extent to which a team can stay together after the dissolution of a new venture. In the following, I shed more light on the theories of life after a new venture for employees and NVTs.

1.2.3.1 New venture (failure) and employees

In this section, I focus on reviewing the implications of new venture employment. I start by elaborating the pivotal role of employees in entrepreneurial activities and then review the outcomes of new venture (failure) employment for employees.

Why employees matter in new ventures

For a successful business, a comprehensive strategy, effective processes, and a saleable product are very important elements that cannot be accomplished without an efficient workforce. This may be the reason employees are called the most significant assets in organizations. In the context of entrepreneurial activities, founders and investors do not carry all the knowledge and capabilities for new venture development; skilled employees are required for different specialties. However, despite the important role of employees, there is a lack of focus on them. In terms of entrepreneurship activities, employees are one of the foundations for identification, creation, and exploitation of opportunities (Alvarez & Barney, 2005; Campbell, 2013). A number of studies show the rate of hiring recent talented graduates is higher for new ventures than established companies (Nyström, 2012; Nyström & Elvung, 2014). For instance, Ouimet and Zarutskie (2014) use US data that indicate young workers are more attracted to new ventures. Similarly, Roach

and Sauermann (2015) show that skilled engineering graduates have more intention to start their careers at startups (National Science Board, 2012).

New ventures attract workers with various skills because the work involves heterogeneous tasks. Hiring workers with different capabilities is more efficient for new ventures, as complex tasks can be done by fewer employees with greater capabilities. Dahl and Klepper (2015) state that the more productive a new venture is, the more workers with various abilities can be hired. Engaging in entrepreneurship activities may encourage employees to start new ventures as founders (Nanda & Sørensen, 2010; Sørensen & Fassiotto, 2011), which can be beneficial for society as a whole (Baum & Silverman, 2004). Yet, many will work as employees (Halaby, 2003; Sørensen, 2007) and engage in entrepreneurship activities as side work. Therefore, due to the importance of employees in new ventures and their value in the growth of entrepreneurship activities, it is essential to understand how they experience working in new ventures and what the outcomes are. In the following, I elaborate the major implications of working in new ventures as employees.

Implications of new venture employment

Employees of a new venture differ from the founders in various ways, such as owning equity, autonomy, pecuniary and non-pecuniary rewards, responsibilities, and commitment to the firm. Therefore, the experience with and consequences of new ventures (i.e., ups and downs, success and failure) are different for employees than for founders (Sorenson et al., 2019). The experience of new venture employment can have advantageous and disadvantageous implications for employees.

The experience of working for a new venture can lead to the development or creation of general human capital that would have not occurred in the absence of such experience. It can positively influence employees' value as human capital because people have different responsibilities and tasks that can help improve their skills and capabilities. In addition, because of the smallness and resource limitations

of startups (Aldrich, 1999), a small number of people have to establish job specializations with a wide range of tasks, which is essential for a firm's success (Rosen, 1983). As an outcome, employees can gain experience in various roles that they would not achieve in established organizations (Campbell, 2013). The flat hierarchy of startups gives employees opportunities for autonomy with little bureaucracy (Sørensen, 2007) in doing high-level tasks alongside managers (Wagner 2004), which would not be possible in large firms. Working in a high-risk, uncertain entrepreneurial environment provides employees with skills and capabilities that may lead to recognizing new opportunities (Shane, 2003) for starting a new business. The research shows that some individuals join startups to gain entrepreneurial skills and experience in order to start their own businesses (Elfenbein et al., 2010; Lazear, 2005; Roach & Sauermann, 2015). Employees can acquire required skills or learn how to acquire those skills to launch a new venture by interacting with entrepreneurs. These skills and capabilities can potentially make more entrepreneurial opportunities attractive. Moreover, such valuable social contacts facilitate access to resources that may lead to lowering the costs of entrepreneurial entry and enriching the value of entrepreneurial opportunities (Nanda & Sørensen, 2010).

On the other side, there are potential downsides with new venture employment. First, undertaking a wide range of tasks may not lead to increasing the human capital of employees because there may not be enough focus on a particular specialization to become highly skilled (Sorenson et al., 2019). Second, the risky and uncertain environment of startups, which may include tensions among stakeholders (i.e., founders and investors), may lead to feelings of instability among employees. These feelings can prevent them from concentrating on their specializations. In addition, these issues may also adversely affect the employees' career after the new venture. Not being sufficiently skilled in a specialty may cause employees to accept lower-level jobs with less desirable compensation. Finally, the fragile nature of new ventures with high failure probability makes jobs in new ventures uncertain. Finding themselves out of a job, employees may face major challenges and adverse

consequences (Brand, 2015), such as prolonged unemployment and accepting less attractive positions for less money and lower-level tasks (Sorenson et al., 2019). However, it is still unknown what employees expect to gain from startups, how they experience working in startups and experience failure consequences, and what they actually achieve. These issues are explored in Study 2 (see Chapter 3).

1.2.3.2 Consequences of new venture failure on NVTs

It is well established that many new ventures are not established by a single individual alone but by a team (Klotz et al., 2014; Lazar et al., 2019). So, besides understanding the implications of failure for a single entrepreneur, it only seems natural to broaden our understanding of the effect of new venture failure on the team responsible for the entrepreneurial activity. In this section, I review the implications of new venture dissolution on NVTs. First, I review different definitions of NVTs and the definition used in this dissertation. I also shed light on the critical role of NVTs in entrepreneurship. I then discuss the co-mobility of NVTs after new venture dissolution, which is the subject of Study 3.

Defining new venture team (NVT)

Scholars have employed various definitions for NVTs depending on who makes up those teams. Kamm et al. (1990) define these teams as consisting of individuals who have equity in financial interest in the venture and who have been present since the pre-startup phase of the business. This definition has two main criteria, ownership and the length of involvement. Other definitions include other aspects, such as non-financial elements, participating in activities, and involvement in decision making (Cooney, 2005; Klotz et al., 2014; Ucbasaran et al., 2003), which makes the definition less static and more dynamic. Still other definitions include team-member entry and exit after new venture founding (Forbes et al., 2006; Vanaelst et al., 2006). Despite adding these criteria to Kamm et al. (1990)'s basic definition of NVTs, the focus is still on the role of individuals in the team, which might not fit with the existing team entrepreneurship in practice (Packalen, 2015). Therefore, a more inclusive approach is suggested. For example, Gartner et al. (1994) define NVTs as

the ones not only having ownership roles but also having the responsibility of acquiring resources, developing the venture's concept, and operating the business. Koltz et al. (2014) argue that it is not only the investors but also the individuals who take the lead, should be taken into account in the NVT. Some other operationalized definitions extend the team member concept to other individuals in the new venture, such as first-year and early employees (Coad & Timmermans, 2014). Undoubtedly, NVT members change over time. Therefore, the more dynamic definition of NVTs and team-based entrepreneurship gives a clearer understanding of teams in reality. Scholars have used different terms for team-based entrepreneurship, including entrepreneurial team, new venture team, startup team, and founding team (Klotz et al., 2014). In this dissertation, I use the term NVT because it is frequently used in entrepreneurship research (Hellerstedt, 2009; Koltz et al., 2014).

Definition of new venture team in this dissertation

This dissertation follows Klotz et al. (2014) and uses the term NVT for an entrepreneurship-based team. In this thesis, a broad perspective of the NVT is taken whereby the people who participate in establishing a startup and those who joined the team in the first year after launching the firm are considered NVT members. This is because there is an assumption that founders build up their management and strategic members during the first year of a new venture. This definition is in line with how Gartner et al. (1994), Ruef (2010), and Coad and Timmermans (2014) describe entrepreneurship-based teams as founders and joiners of a startup. This definition is applied in this dissertation for various reasons. First, this dynamic definition of NVTs allows including other team aspects, such as strategic decision making rather than just financial equity. Second, it allows a pragmatic viewpoint about what a team is in reality. Finally, it best fits with the information in the database used in this dissertation.

Importance of NVTs

NVTs have the main role in new venture development. They are the heart of the firm (Cooper & Daily, 1996) because they comprise a combination of people with

different characteristics, knowledge, skills, abilities, and experience (Vesper, 1990; Vyakarnam et al., 1997). In addition, the business is less dependent on a single person and as a consequence the loss of one entrepreneur is less likely to damage the entire venture. From a psychological point of view, working as a team reduces entrepreneurial stress (Lechler, 2001), and team members are more likely to trust and support each other (Boyd & Gumpert, 1983). Furthermore, the team has the major role in innovation processes. Studies show that teamwork among entrepreneurs is crucial in ensuring a high-performance team, resulting in product, project, and innovation success (Ancona & Caldwell, 1990; Gladstein, 1984; Hackman, 1987). NVTs can provide a venture with access to valuable financial, social, and human capital resources (Kor & Mahoney, 2000). Each team member can add to the diversity of views, knowledge, and skills and may also enable the completion of complex tasks (Ucbasaran et al., 2003). NVTs play an important role in facilitating business development and business performance (Kamm & Shuman, 1990; Roure & Madique, 1986; Westhead, 1995). A venture with a team has a more diverse array of human capital than a venture with a single entrepreneur. Due to the importance of teams in firm performance, there has been a variety of studies addressing team composition (e.g., Amason & Sapienza, 1997; Lazar et al., 2019; Ruef et al., 2003), team turnover (e.g., Chandler et al., 2005; Ucbasaran et al., 2003), team performance (e.g., Beckman et al., 2007; Chandler et al., 2005; Ensley, 1999; Wagner et al., 1984), and team passion (e.g., Santos & Cardon, 2019). However, there is a lack of research on the impact of startup dissolution on NVTs. In particular, there is still a need for research on how new venture dissolution can affect NVTs in terms of staying together. I elaborate on this in the following.

NVT co-mobility after new venture (failure)

The research shows that people who jointly move to a firm or establish a new business become rivals with the previous firm, thus it may increase the probability of higher performance (Wezel et al., 2006; Groyberg et al., 2008). From the perspective of the receiving firm, increasing performance by hiring a group of people with prior joint experience might be more effective than hiring individual

workers (Marx & Timmermans, 2017). Studies confirm that post-move performance is higher for those who move together than for those who move alone (Groysberg & Lee, 2009).

From the movers' perspective, people often prefer to continue working with their previous colleagues when changing jobs. First, they will avoid the integration process with a new team. Second, the risk of working with an ineffective team will be avoided. Third, the time it takes to acquire joint experience with a team will be minimized (Marx & Timmermans, 2017). In addition, the agreement in passion among joiners who founded a new venture may immediately impact the performance of the team and later new venture survival (Santos & Cardon, 2019).

Generally, joint moves can be valuable because individuals are aware of the other members' skills and knowledge and know they can work together to strengthen productivity and performance. Co-movement can encourage trust among individuals on the team (McEvily et al., 2003), which may lead to shared experience and tacit knowledge that helps in planning wisely and distributing tasks effectively.

When a business dissolves due to bankruptcy, poor performance, or the decision to exit the firm, moving can be a positive part of the dynamic process of entrepreneurship in that individuals' mobility may result in identifying new opportunities (Jenkins & McKelvie, 2017). NVTs are considered valuable resources with knowledge and capabilities that can be transferred and used in creating successful new ventures (Campbell et al., 2014). In the NVT context, the continuity of collaboration of the team members after new venture dissolution might be important, as the aggregate capabilities obtained through teamwork can be wasted with the separation of the teammates. NVT co-mobility can potentially be beneficial for entrepreneurial activities. First, being among team members can mediate the stigma of failure and facilitate coping and recovery processes. Second, the joint working experience provides the team members with sufficient information about each other's skills and capabilities, which can be an important tool for restarting a new venture (Zheng et al., 2016). Furthermore, the established mutual trust and

strong ties among fellow teammates are essential components that can help in the timely establishment of a new team (McEvily et al., 2003). Therefore, it is important to understand the implications of new venture dissolution for NVTs. In particular, there is still a need for research on how new venture dissolution can affect NVTs in terms of staying together. This is addressed in Study 3.

1.3 Methodology

In the methodology section, I give an overview of research philosophy for this dissertation. I then present the overall research design that formed the basis for the papers. Here, I shed light on the different research strategies applied in this dissertation. First, I elaborate on the qualitative approach that forms the core of Chapters 2 and 3 where I present the sampling technique, data collection process, and subsequent data analysis. Then I present the strengths and weaknesses of qualitative approach. Finally, I explain the quantitative study and the strengths and weaknesses of this approach.

1.3.1 Research philosophy

In general, research philosophy is engaged with the systems, beliefs, and assumptions in the development of knowledge. These assumptions include human knowledge of a reality (i.e., epistemological assumptions) and realities encountered in the research (i.e., ontological assumptions) that shape the understanding of the research questions, the methods used, and the findings (Crotty, 1998; Saunders et al., 2016).

To understand the consequences of new venture failure and how different stakeholders are affected by this failure, this dissertation has used two philosophical stands—interpretivism and positivism. This resulted in two different research designs in the different studies in this dissertation.

The dominant approach in the dissertation is interpretivism approach whereby the focus is on the interpretation of realities and social acts (Malhotra & Birks, 2007). In

the view of interpretivism, the social world is viewed based on the experience of social entities. From an interpretivist perspective, research aims to create a novel, rich understanding and interpretation of the social world (Saunders et al., 2016). To do so, there has to be detailed studies of the contexts in which social actors operate in order to understand what is happening and how realities (in this case the consequences of failure) are being experienced by the social actors. In interpretivism, reality is dynamic, and there may be a wide variety of interpretations of realities and social actors (Malhotra & Birks, 2007).

In this dissertation, I also employ positivism in relation to the large register database in Study 3. Epistemologically, the focus of positivism is to look for causal relationships in the data and interpretations of reality in a large structure (Easterby-Smith et al., 2015). In this approach, the interpretations and experiences of social actors (in this case the co-mobility of NVTs) do not affect the social world. Therefore, the truth about the social world is sought through observable, measurable facts relating to a particular aspect of organizations (in this case dissolved entrepreneurial firms) (Saunders et al., 2016).

1.3.2 Research design

Study 1 and Study 2 (Chapters 1 and 2) and the background study (Chapter 5) use a qualitative research design. Study 3 (Chapter 4) uses a quantitative research design with large-scale register data.

The qualitative approach of Studies 1 and 2 is based on a large set of interviews with different stakeholders in a (failed) new venture (i.e., founders, employees, and investors), while the qualitative study of the background paper uses a case study approach. In this section, I discuss the details of the large scale interview study. The details of the case study can be found in Chapter 5. The source of the empirical study (Study 3) is “Integreret Database for Arbejdsmarkedsforskning” (IDA), which I discuss in Section 1.3.2.2.

1.3.2.1 Introducing the qualitative research design

To develop Studies 1 and 2, I followed an inductive qualitative approach (Eisenhardt & Graebner, 2007). This was motivated by the fact that there is little knowledge about the consequences of new venture failure in general and the implications for a broader set of stakeholders in particular. An inductive research approach departs from identifying patterns, builds a theme using a collection of observations and participants' views to achieve a deep understanding of the phenomenon in question, generating a theory or conceptual framework (Bryman & Bell, 2015; Cresswell & Plano Clark, 2007). Study 1 aims to understand the failure phenomenon by interviewing the main stakeholders in entrepreneurial activities, in this case founders, employees, and investors. Here, I explore how these different stakeholders perceive the failure of a new venture and how they have been affected by this failure. Study 2 explores how employees experience working for startups. The inductive research design allows the researcher, to acquire deep understanding, insight, and knowledge of the concept of failure (Study 1) and of the outcomes of startups for employees (Study 2) in the specific context of entrepreneurship. It is important to note that an inductive research design does not neglect existing theory, as these theories allow the researcher to acquire insight about the importance of the research topic (Saunders et al., 2016).

Sampling and data collection

The selection of a representative and meaningful sample is vital, as it reflects the purpose and requirements of the study (Davidsson, 2004). Consequently, the sampling was based on startups that obtained venture capital finance within high-tech industries (i.e., software, hardware, biotech, and manufacturing). Because these startups have been supported and funded by investors that make them as the main and serious career for founders to establish formalized management and attract talented employees. As Study 2 argues, high-tech venture capital startups tend to work well in the market, which increases the likelihood of growth and success. This

makes venture capital high-tech startups important drivers of economic growth, which impacts employment and innovation growth (Wu & Atkinson, 2017).

In this dissertation, the sampling was conducted in two regions in the US (the East Coast and the West Coast) and in Denmark. These places were selected to assure regional variation. Furthermore, the US East and West coasts are important regions for high-growth startups. Denmark has supportive rules for employees that make it significantly different from the US. For instance, in Denmark employees can benefit from unemployment insurance during periods of unemployment, which is not the case in the US. Sampling from different regions was done in order to obtain a deep understanding of the purpose of research (Mack et al., 2005).

Different sampling strategies were applied in each country. In the US, we relied on snowball sampling. In this strategy, the research team relies on interview objects to point us to other potentially relevant interview objects that are part of the interview object's social network (Mack et al., 2005). In applying this sampling strategy, we started with venture capitalists that were part of the social network of the research team. These venture capitalists introduced us to the different group of relevant stakeholders (i.e., founders, employees, and (other) investors).

In Denmark, I identified relevant interview objects via a large venture capital database that contains required information about failed new ventures and information about the founders of these ventures. The aim was to identify as many contact evidence of the people from failed ventures. Because of the termination of the new venture, most contact information that was provided appeared to be no longer valid. Therefore, I expanded my search for the available information including through searching for the name of the founder and the new venture through LinkedIn and other social media sources. In this way, I not only identified the founders but also the employees and the investors involved in the failed new ventures. Based on this information, I contacted those individuals who seemed most suitable for the purpose of this study (Collingridge & Gantt, 2008).

We employed a semi-structured interview technique because it is a consistent method that allows for flexible discussions, which is desirable in our interpretive approach (Saunders et al., 2016). This also allowed us to go into detail about several issues relating to the ups and downs of new ventures. For the interviews, we developed a detailed guideline and protocol for different stakeholders. Each interview lasted 90 minutes on average. The interviews started with individuals' work trajectory from the past up to their current position, as well as the story of their different positions and their joining or leaving a startup before their current role.

Afterwards, they were asked about their experience working in startups in the context of risk and uncertainty. They were also asked about how they experienced failure and how they understood failure and success. The last part of the questions focused on the consequences of working in startups, the effect of failure on the participants' career paths, what happened to the different resources (including technology, knowledge, and individuals), and their relationships after the failure/closure of a new venture. All interviews were recorded and transcribed. In case of the need for follow-up questions and clarification, we contacted interviewees by phone and email, which together with additional documents obtained by the interviewers and the interviewer's notes were used as supporting data for analysis and triangulation (Creswell, 2007).

All notes and reflections were written during the interviews, and some notes were added immediately after the interviews. This systematic approach and the recording of the interviews by two recorders were constructed to minimize the biases of data collection as much as possible. Establishing interview protocol, using a general structure of questions for conducting interviews, and using supplementary sources for understanding the purpose of the research (Creswell, 2009; Gioia et al., 2013), and triangulation were all developed as a means of ensuring the validity and reliability of the data collection (Bryman & Bell, 2015; Creswell, 2009).

We conducted interviews until we reached a saturation point, which was identified for adequate and quality data (Glaser & Strauss, 1967; Saunders et al., 2018). My

collaborators in the US conducted the interviews there, while I conducted the interviews in Denmark. To assure a similar interview approach, the first interviews in Denmark were conducted together with my US colleagues. The data were collected between August 2014 and March 2016. In total, we conducted 86 interviews, 37 in Denmark and 49 in the US, in four high-tech industries—software, hardware, biotech, and manufacturing. Because some individuals had more than one role at their startups, they were asked to respond to the questions from the viewpoint of each role they had in the new venture.

Data analysis

The interviews were coded based on the different roles where I reached a total of 130 role-based interviews, 46 from Denmark and 84 from the US. All transcribed interviews and the supporting data were reviewed and coded. Codes are labels or tags involving related words or phrases from interviews, documents, notes, etc. (Hilal & Alabri, 2013). The analysis started with recognizing initial concepts and placing them into categories. In this first-order analysis, a large number of categories were identified, as in the first-order coding the aim is to code in simple descriptive phrases (Gioia et al., 2013). In the following step, similarities and relationships among these categories were identified, as it is usual in axial coding (Strauss & Corbin, 1998). This process facilitated assembling a large number of categories into manageable higher-order themes. In this second-order coding, themes emerged based on asking whether they explain the phenomenon explored in this study. Finally, similar themes were gathered into aggregate dimensions that built an emergent structure of the data (Gioia et al., 2013). This process was overseen by two other experienced researchers in order to ensure the conclusion of the analysis is reasonable and reliable vis-à-vis the interview protocol, interview transcripts, notes, documents, and coding orders. Based on the overall research question, the purpose of the research, and the emergent aggregate dimensions, analytical memos were written. The memos were developed within different themes, including joining a new venture, the outcomes of working for a new venture (employee perspective), perceptions of failure (founders', employees', and investors' definition of failure),

learning from failure, the value of a network, the team after failure, and feelings after failure. Memoing is a technique that helps the researcher gain a clear view on the research topic by providing a systematic mechanism through which to formulate assumptions and subjective perspectives about the research area. This approach is a useful technique that helps in developing the study design (Birks, Chapman & Francis, 2008; Glaser, 1978). The analysis and review of the memos led to the development of Study 1 and Study 2. I also benefited from the results of the analysis in developing the theoretical framework for Study 3.

Given that the data was collected in two different countries (the US and Denmark), cultural differences relating to the failure of new ventures might be an issue. According to the Global Entrepreneurship Monitor Project (GEM) in 2019, there is some variation in specific year (2019). However, there are not noticed any systematic differences between the two countries in the analysis. This may be because the aim of the study, the design of the research, the interview protocol, and the interview questions were developed with individuals' experiences and their understanding of a phenomenon (i.e., failure) in mind rather than being based on an institutional or national level. Furthermore, gender differences for outcomes of failure were not observed; this is because the aim was not to explore such differences, and the researchers paid little attention to gender in the interviews.

Strengths and limitations of the qualitative study

The inductive research used for this dissertation has several strengths. First, a sufficient amount of data was collected, providing an adequate foundation for reliable results. Second, different groups of relevant stakeholders engaged in entrepreneurial activity are addressed, which provided deep insight for understanding the failure and the outcomes of failure. Third, geographical variation was considered in order to ensure that the findings are not the result of the characteristics of a specific region. The analysis of the data was conducted by four main researchers, and the whole process was overseen and guided by an experienced qualitative researcher, thus ensuring the reliability of the study and the study results.

However, there are some limitations. As the aim of the research was to explore the outcomes of new ventures and the consequences of failure, reaching people was a challenge. Failure is not an interesting topic for people engaged in entrepreneurial activity, so it was challenging to get them to talk about their experience of failure. The sample is limited to venture capital-backed startups in high-tech industries. However, there is room for a comparison of venture capital and independent startups or high-tech and low-tech industries.

1.3.2.2 Data source for the quantitative study

Study 3 was developed using a quantitative approach. The source for this empirical study is the “Integreret Database for Arbejdsmarkedsforskning” often better known by its Danish acronym IDA. IDA is a longitudinal register data administered by Statistics Denmark that contains detailed information about all firms and individuals in Denmark from 1980 onwards (see Timmermans, 2010). For individuals, information such as age, work experience, education, salary, wealth, residence, and cohabitation can be extracted. On the firm level, IDA provides information on ownership, start-up year, industry, sales, and return on the firm’s investment. Information on firms and individuals can be merged together so that employee–employer relationships can be traced. Furthermore, this linked register can be merged with other databases, including the Danish entrepreneurship database. The Danish entrepreneurship database provides detailed information, including the main founder, of newly established firms in Denmark. The merger of these databases formed the basis for the empirical analysis in Study 3, which allowed an overview of all new ventures, founders, and early employees (our definition of new venture teams). Due to break in the data and limited access, we relied on data for the period 2001 to 2006.

Strengths and limitations of IDA

IDA is a comprehensive database that provides all information on employees, firms, and entrepreneurs over a long time period. For the analysis of Study 3, it provided all the information needed to follow people’s career trajectories and their

relationships with their co-workers (i.e., if they co-moved, where they moved, or whether they moved and returned to entrepreneurship or not). The advantage of linking IDA to the entrepreneurship database is that this provides all the information needed to identify new ventures, the year they were established, the year of termination, turnover, and sales. Furthermore, the register data include a wide range of industries and organizations, which makes it possible to exploit co-mobility in the knowledge-intensive industry focused on in Study 3.

There are a number of limitations with IDA in relation to developing Study 3. Because of the breaks in several variables in the data, the analysis in Study 3 is limited to the period 2001–2006. Nevertheless, this period provides a sufficient sample for Study 3. There is no reason to assume we cannot draw generalizable conclusions based on this time period. Another drawback of the register data is that we do not know the reason why a new venture dissolves, although we can exclude exits as a result of mergers and acquisitions or as a result of going public, which are relatively rare events. However, to give some indication of new venture failure, the study includes the turnover of the year prior to the exit to give an indication of performance prior to the dissolution.

Another drawback is in creating the NVT variable. To identify the NVT, Study 3 uses a general definition of NVT, where the early employees and founders who joined a new venture in the first year of establishment are identified as NVT members. NVT members who have no formalized role in the new venture are not included. Otherwise, we also lack data on the contributions the team members make to the team and the interactions within the new venture. Nevertheless, I consider the type of data and the methodological approach in this paper valuable in terms of the qualitative research design in the other papers of this dissertation.

1.4 Conclusions

Despite the pivotal role of entrepreneurial activities in economic growth and job creation (e.g., Lee et al., 2011), a large number of new ventures close down or fail

after a short period of time (e.g., Wiklund et al., 2010). The act of entrepreneurship involves many stakeholders besides the entrepreneurs, which means that failure affects a larger group of individuals. However, the existing research has mainly focused on the impact on the entrepreneur. Yet, other groups of actors (i.e., employees, investors, and NVTs) potentially play critical roles in recognizing new opportunities. This dissertation aims to shed more light on the outcomes of new ventures and new venture failures from the perspectives of the different actors involved in entrepreneurship activities. In doing so, three main studies have been undertaken. In the following, I describe the studies and their main findings.

Study 1 investigates the concept of new venture failure from the perspective of different stakeholder groups in entrepreneurial firms. I argue that it is important to understand how the individuals involved perceive failure, as they are the ones who experience the outcomes. I also argue that founders are not the only ones who experience the ups and downs of entrepreneurial activity. Investors, who take great financial risks, and employees, who have a critical role in product development, are also very important actors in startups. I found that people describe failure based on what they expect to get out of a new venture and what they (do not) gain. Because actors have different expectations from joining a startup, perceptions vary among founders, investors, and employees. Furthermore, actors do not describe failure the same way as scholars do; instead, it is described as a multidimensional concept where there is not a true failure unless there is team failure, which is coded as an element of the adverse consequences leading to eventual financial issues. In addition, the results of this study show there is a great deal of tension among the different stakeholders (i.e., investors and founders) in terms of their misaligned expectations about joining a startup and about the outcomes, which might be the initial cause of true failure, which investors have described as team failure.

Study 2 investigates the outcomes of new ventures with a specific focus on employees. We addressed employees because, despite their pivotal role in product development and startup growth, employees' experiences and outcomes of working in startups have not been examined previously. First, we found that employees

recognize the high risk and costs of working in a startup; however, their evaluation of risk, costs, and rewards are biased. Second, they expect that risk can be mitigated by other achievements in the startup, including autonomy, learning opportunities, and professional advancement. Third, these biased expectations may result from the structural characteristics of new ventures. In particular, as investors and founders need skilled employees they sustain these myths and unrealistic expectations and conceal real information from employees. On the other side, employees are continually faced with conflicting situations because they are restricted by the startups' norms.

Study 3 addresses the perspectives of NVTs in entrepreneurial firms. The aim is to investigate team co-mobility after the dissolution of a new venture. There is a growing trend to form team-based startups, as these can achieve better performance than startups run by one individual (Klotz et al., 2014). This study explores team co-mobility after new venture dissolution because it is valuable to understand the extent to which team-based human capital (i.e., shared experiences, skills, and knowledge) can be pursued which in turn is valuable for effective collaboration and communication in establishing a new startup or working in other organizational settings. Our results show that co-mobility among people with prior joint work experience is frequent and may indicate that communication is easier if there is prior shared work experience. Furthermore, technical people co-move more than those in other occupations. This may indicate the complexity and nature of the technical and engineering fields and that they require close collaboration among people. As prior team members may have a better understanding of each other, they may prefer a joint move. Additionally, our findings show that this team mobility is more frequent in knowledge-intensive startups. Other results show that team members who move together are more inclined to re-enter entrepreneurship and start a new venture together. Re-entry to entrepreneurship with former teammates can be beneficial, particularly when a business fails. Given that failure may adversely affect continuing entrepreneurship (Ucbasaran et al., 2013), being on a team might compensate for the fear of failure and the humiliation after a failure (Cope, 2011; Shepherd, 2003). This

may be because the shared skills, knowledge, and experiences of team members who move together is associated with more learning from failure and more resources (i.e., social, human and financial resources) required to return to entrepreneurship (Kor & Mahoney, 2000). Finally, our results confirm that co-movement is more frequent among people with homogenous human capital (i.e., in terms of age, experience, occupation, and gender), which is in line with previous studies that argue team composition takes place among people with similar characteristics (Aldrich, 1999; Louch, 2000; Ruef et al., 2003). These similarities may be pivotal to improve the performance of not only individuals but also of newly established firms (Boselie et al., 2001).

The background paper “*Open for entrepreneurship: How open innovation can foster new venture creation*”, takes a different approach to the topic. Drawing on the entrepreneurship failure literature, this study addresses the importance of open ecosystems for actors engaged in entrepreneurial activities with respect to the high risk of failure. In particular, in this study we explore how the open approach affects a new venture’s short-term survival. Given that a high proportion of new ventures fail, entrepreneurship actors should make potential plans to increase the probability of survival. The findings of this study shed more light on understanding the main challenges of entrepreneurs and how they can benefit from an open ecosystem to decrease the likelihood of failure. An inductive multiple case study approach was employed to investigate the mechanisms by which those engaged in entrepreneurship can benefit in order to survive. We found that ecosystem collaboration, user involvement, and an open environment are the open mechanisms that impact new venture survival. Moreover, we found that entrepreneurs’ ways of thinking have a moderating role in these three mechanisms. An open mindset may boost the impact of ecosystem collaboration, user involvement, and an open environment on new venture survival. The findings of this study regarding how individuals’ mindsets can play a critical role in entrepreneurship were the basis for the development of Study 1.

1.5 Contributions

The findings of this dissertation provide a range of implications for both theory and practice with regard to future implications of working at a failed startup not only from the perspective of the entrepreneur but also from that of employees and investors. In the following, I highlight numerous implications for theory and practice.

1.5.1 Implications for entrepreneurship theory

This dissertation contributes to entrepreneurship theory in different ways. First, it investigates the outcomes of new venture failure and how individuals are affected by such failure. Given the increasing amount of research on entrepreneurial failure, it is vital to understand that after the failure of a new venture the main resources (i.e., human capital) are not liquidated; rather, they are valuable assets that can be used in other organizational settings or in recognizing new opportunities.

Second, I show that entrepreneurs are not the only critical actors in entrepreneurship and that employees are critical actors in entrepreneurial activities who are also affected by the ups and downs of startups. As critical actors in entrepreneurial activities, employees may have different motivations, expectations, and perspectives of startup activities than the founders (Roach & Sauermann, 2015). Furthermore, new ventures are becoming an attractive workplace for employees to start off their careers. However, there is little research on the dynamics and experiences of these actors in entrepreneurship. This thesis adds to the entrepreneurship literature by exploring employees' experiences of new ventures. This implies to the entrepreneurship research for a need to understand the realities of working for a new venture and that these may lead to unexpected outcomes for employees. This may require a more in-depth qualitative study and a larger sample.

Third, I explore the team as another important actor in new ventures. This adds to entrepreneurship research by showing how NVTs post-exit can be crucial for entrepreneurship activities, meaning that the frequency of co-mobility among NVTs

after the dissolution of a startup and re-entry into entrepreneurship are important factors because having prior experience working together may enhance the performance, the likelihood of growth, and the success of the new business (Klotz et al., 2014).

Fourth, I address an important gap in the entrepreneurship literature by approaching the concept of failure from the perspective of individuals involved in entrepreneurial activities. It is important to understand the concept of failure from the main actors' point of view for several reasons. First, the main actors' point of view can provide insights regarding the concept of failure that may not have been previously noticed by scholars. As the actors have experienced failure, they can see it from a practical perspective that may have been ignored by academics. Second, understanding different actors' perceptions of entrepreneurial failure helps in comprehending hidden relationships (i.e., tensions) among different players in startups. This can help researchers understand the social constructions of entrepreneurial activities in order to see the hidden elements of failure. Finally, understanding the concept of failure from the main players' perspectives can decrease the likelihood of failure, as there may be educational benefits.

1.5.2 Implications for entrepreneurship practice

The findings of this dissertation prompt some suggestions for entrepreneurial practitioners. The results show the outcomes of working for new ventures and the effects of failure are based on the expectation of benefitting from entrepreneurial activities for both personal and professional purposes. As the findings of Study 1 and Study 2 reveal, there is significant misalignment among different groups of actors, which might be why they are adversely affected by failure. These issues can be resolved through clear conversations, negotiations, and close relationships among different stakeholders, particularly between investors and founders. Such discussion can be beneficial for all parties as it might clarify each group's expectations, what the actual reality is, and how actors might be affected by unsystematic assumptions of new ventures.

Among the entrepreneurial actors, employees typically join startups for personal purposes (based on the results of Study 1). This might be the basis of the negative consequences of working for startups, i.e. actual learning in new ventures and (un)employment issues after failure (results of Study 2). Employees can join startups with sufficient information about development path in new ventures, actual risks, outcomes, learning of working for startup. These can be in some extent achieved through searching in the extensive networks, negotiating, and discussing with founders and investors. The emphasis on negotiation with both founders and investors can be beneficial for employees because of the misalignment mentioned above and because of the potential biased evaluation of new venture uncertainties and risks.

Another implication for practitioners is the importance of entrepreneurial teams after new venture failures or exits. From the perspective of investors, team failure is the true failure. Study 1 shows how the close collaboration among team members could be critical in benefiting from the outcomes of working in new ventures and how tensions might lead to negative consequences of failure. In addition, the findings of Study 3 confirms that due to close collaboration, previous team members are more willing to keep their ties and that team members who move together are the ones that potentially continue entrepreneurship activities after new venture failure. These results can be a lesson for entrepreneurial practitioners in order to benefit from the outcomes of working for new ventures or from new venture failure by maintaining strong social ties and thus improving performance and new venture growth (Boselie et al., 2001).

1.5.3 Implications for policymakers

Policymakers have attempted to make entrepreneurship attractive as a career choice by lowering tax rates for creating new venture (Lundström & Stevenson, 2006; Wennberg, 2009). However, there is a need for specific research on failed ventures and the different stakeholders after new venture failure. The findings of this dissertation suggest some critical points for policymakers. First, startup employees

are one of the most important assets in entrepreneurship that can help create successful ventures. However, there is no systematic mechanism for startup employees affected by failure. For example, employees can be supported through sufficient counselling services (financial and psychological) in order to mitigate the potential stigma of failure and unemployment and to encourage making use of experience in further entrepreneurship activities (i.e., recognizing new opportunities for creating new ventures).

Despite the contribution of entrepreneurial activities to economic and employment growth (e.g., Neumark et al., 2011; Lee et al., 2011), Study 1 shows there is high tension and misalignment among different stakeholders in new ventures, often due to financial problems. These issues may be mitigated by the support of policymakers through, for example, public financing, consulting tools, and facilitating legal obstacles for new ventures.

According to the results of Study 3, the important role of co-movers with prior experience and the willingness of co-movers to re-start entrepreneurial ventures are the signals for policymakers to pay specific attention to promoting team entrepreneurship by providing subsidies for starting or re-starting team-based ventures. Other measures to promote serial team-based entrepreneurship include special low tax rates and other kinds of financial support. Providing support for failed founders and entrepreneurial teams can help decrease the fear of failure that prevents many founders from starting new entrepreneurial firms.

As I found in this dissertation, founders are biased in identifying the critical situations that result in major financial costs that can adversely affect their motivation and psychological costs (Ucbasaran et al., 2013). This suggests that public policy should focus on revealing the major financial issues of new ventures to encourage closure or reconstruction before causing critical financial issues for different groups of stakeholders.

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Chapter 2. Entrepreneurial failure: Distinct perceptions among founders, employees, and investors¹

Abstract

This exploratory study investigates new venture failure from the viewpoints of founders, investors, and employees. Findings assert that the perception of failure among these individuals is built upon what they expect to gain from new ventures. Individuals have multifaceted approaches in understanding failure/success; however, they do not generally believe in “true failure”, as long as learning is a result of the experience. The only kind of failure mentioned by investors that resonate with founders and employees refers to team failure. Findings also point to misalignment of incentives and critical tensions among these groups, in particular founders and investors.

¹ Earlier versions of this paper were presented in DRUID academy conference, 2016 and accepted in DRUID society conference, 2017.

2.1 Introduction

Despite the value of entrepreneurship in economic development, job creation, and innovation (Carree & Thurik, 2010), the fact that entrepreneurship involves lots of vulnerability and uncertainty is indubitable (Alvarez & Barney, 2005; Diebold et al., 2008). Failure is the outcome of such uncertainty that gets the most attention in entrepreneurship research (Jenkins & McKelvie, 2016; Jenkins & McKelvie, 2017; Lin, Yamakawa & Li, 2019; Wiklund et al., 2010). The term “failure” has been described in different ways among entrepreneurship scholars, from closure (Balcaen et al., 2012; Singh et al., 2007) to poor performance (Coelho & McClure, 2005) and to bankruptcy (Shepherd & Haynie, 2011; Zacharakis et al., 1999). Because individuals carry the consequences of failure in their careers, they might approach it differently than researchers. For instance, as there might be learning outcomes (Dahlin et al., 2018; Madsen & Desai, 2010; Nielsen & Sarasvathy, 2016) or successes in the future career or some other achievements, individuals might not count the closing of a new venture as a failure, whereas from the researchers’ point of view the same event is indeed so. On the other hand, social, physiological and financial costs (Ucbasaran et al., 2013) are the deleterious consequences for individuals of closing-down a new venture, which makes them having another view of failure. These make it necessary to study new venture failure from the individuals’ viewpoint.

Founders are not the only ones who suffer from the outcomes of failure; so do investors - as they are the ones who make investment decisions under uncertainties (Aldrich, 1999) - and employees, especially those who have the main roles in product development and managerial decisions. Given that those individuals experience the upsides and downsides of new venture failure, it is pivotal to understand its perceived features from the context of founders, investors, and employees. Such is the aim of this article. In particular, this study investigates how different actors in an entrepreneurial process understand the concept of new venture

failure and its features with regard to their own failures and experiences enduring its consequences.

This article presents findings from an inductive study of these groups perspectives on failure and identifies the underlying dimensions of the concept in an entrepreneurship context. The findings show that no group considers a low-performing, closed new venture as a failure, as long as there were benefits from the learning that comes with it. Even though all three groups understand failure in multidimensional ways, they do not consider closing a business venture as true failure. The way each group understands failure is connected to what they have expected and what they could gain out of a new venture. The only circumstance accepted as true failure by investors is team failure, as it leads to many other negative consequences, such as fiasco in launching a product to the market, and ultimately financial collapse. An underexplored question refers to what each group assumes others will perceive as failure. Data show there is misunderstanding across these groups about their incentives for joining a new venture, and this follows a certain lack of interest in the other groups' objectives as well. The result is misalignment and tensions among them, particularly between founders and investors, which can be the reason why investors perceive true failure as inability to work in a team.

Understanding new venture failure through the eyes of entrepreneurs yields various implications in entrepreneurship studies. First, it gives a clear picture of the potential elements of new venture failure that might have been neglected in academia. Second, understanding how different groups of practitioners perceive failure could facilitate relationships between different groups of actors, as well as form and reform the social structures that were built for entrepreneurship activities (Ucbasaran et al., 2013). Third, understanding the mindset of practitioners on failure would be pivotal in promoting learning for minimizing errors and maximizing learning benefits of failure experience (Rerup, 2005).

2.2 New venture failure and its features

Most of entrepreneurship research is focused on success rather than failure. There are several reasons for this preference. First, there is a lack of data about failed new ventures. Second, gathering information from failed ventures is challenging, as people might not be willing to talk about their failure experiences and, even when they decide to discuss it, they may not articulate it objectively or even truthfully. However, people who are involved in the entrepreneurial process can have detailed insight of failure, as they are the ones who experienced all the ups and downs of the new venture and suffered the consequences of its termination (Zacharakis et al., 1999).

In this research stream, however, most studies have focused on the causes of survival and success in the perspective of individuals. Focusing on determinants of survival, Clute and Garman (1980) found that founders consider external policies as the main cause influencing their survival because they affect the supply of resources to be invested in the firm. However, some studies show the managerial skills of entrepreneurs to be the major reason for new venture survival, which illustrates internal causes of failure (Flamholtz, 1986; Hambrick & Crozier, 1985). Moreover, Rogoff et al. (2004) look at the factors that contribute to or impede success through comparison of the viewpoint of entrepreneurs and entrepreneurship experts. Their results show that entrepreneurs predominantly mention environmental factors, such as policies and competitors as the major impeding factors for their success. On the other hand, experts point to poor management and marketing as impediments to success.

On the topic of causes for failure, some studies investigated failure by only focusing on entrepreneurs' perspectives. For instance, a study by Bruno et al. (1986) shows that entrepreneurs list low quality products, lack of revenues and poor management as the main factors for new venture failure. Other research has examined failure from both VCs' and entrepreneurs' viewpoints. Ruhnka et al. (1992) have focused on the venture capital firms that have neither failed nor provide the expected return,

naming them as “living dead” ventures. They found poor management and difficult markets can be the main factors of new venture failure. In another study, Zacharakis et al. (1999) show that entrepreneurs acknowledge poor management strategy and market conditions as the key causes to their venture failure. On the other hand, VCs attribute new venture failure to external factors, namely poor market conditions. Based on the literature, most noticeably entrepreneurs and VCs view causes of failure differently, which can have an effect on misapplication of scarce entrepreneurial resources (Zacharakis et al., 1999).

Founders are the creators, owners, and top decision-makers of new ventures (Roach & Sauermann, 2015), with specific knowledge and expertise that motivates them to exploit their ideas through entrepreneurship. In order to implement new ideas, new high-tech ventures, are often dependent on venture capitalists, who are initially motivated to help founders develop their innovations and boost the long-term value (Park & Tzabbar, 2016). There is also a third overlooked group in entrepreneurship literature, which is that of employees. Employees play an important role in entrepreneurial process, as evidence shows new ventures attract highly skilled individuals (Roach & Sauermann, 2015). However, their responsibilities and commitment differ inherently from those of both founders and investors with respect to work activities, ownership, and risk taking (Roach & Sauermann, 2015). Since these groups have distinct motivations for joining a new venture, and different expectations of it, it is interesting to explore how they understand the concept of failure in light of their motivations for joining the new venture, and how they experience failure and its consequences.

2.3 Methods

Given the aim of this study is to understand the individuals’ experience and realization of a specific phenomenon, i.e. failure; it relies upon interview data, and grounded theory as an inductive approach to data analysis and theory-building (Corbin & Strauss, 1990). Qualitative data not only provides a rich illustration for micro-level research that facilitates the induction analysis of patterns for further

testing with large data (Eisenhardt & Graebner, 2007; Yin, 2009), but it also has been suggested for entrepreneurship studies (Endres & Woods, 2007; Venkataraman et al., 2013).

This study was part of a broader project, which mostly focused on the ups and downs of the entrepreneurial process from the viewpoints of different actors, including the question of entrepreneurial failure². The project focused on entrepreneurs in Denmark, where entrepreneurship activities are growing, which offers an interesting comparison with entrepreneurs from the US, where entrepreneurship is mature.

To shed light on different perceptions on the concept of new venture failure, three main stakeholders who hold an important role in new venture longevity were selected. The first concerns founders, whose mindset about success and failure affects entrepreneurship processes. The second refers to employees, who have a major role in producing, delivering, and managing products or services. The third group regards investors who have the important role of providing resources to enable the entrepreneurial process. Different positions of individuals in new ventures are selected and compared in order to highlight the main contrasts and similarities that provide new insight into the concept of new venture failure.

2.3.1 Sampling

Finding the right people for interview was a challenge, as identifying and getting in touch with people who have experienced failure was not easy, and convincing such individuals to talk about their failure experience was another difficult issue in the process. The sample consists of founders, investors, and employees of existing and failed startups; people from existing startups had prior experience of closing down a venture. We approached around 200 individuals for interview and ultimately, 86 individuals agreed to participate.

² For this reason the procedures for data collection and analysis are described in the first-person plural, although this is a single-authored article.

Interviewees in Denmark were identified through a venture capital firm dataset that contained the information of the firms that had been liquidated. Then we searched for the people belonging to that company through the contact information in the dataset and LinkedIn. The snowballing approach did not work well in Denmark, as we did not get replies from the people who were recommended by their friends or prior colleagues. In total, 37 interviews were conducted in Denmark.

For interviewees in the US, we used the snowballing technique. We initially approached venture capitalists. Then we asked them to identify firms in which they had invested and that had either succeeded or failed—we especially asked them about investments that they thought were comparable to their successes when they invested in them but that then proved not to work out. We then interviewed those founders and we asked them for contacts of former employees. Ultimately, we ended up with 49 interviews in the US.

We coded the interviewees according to their roles: founder, employee, or investor. For people who had played more than one role, we attributed more than one node, based on their different roles. Thus, the sample amounted to 130 people, including 46 from Denmark and 84 from the US. Table 1 shows the summary of the sampling of the data. In Table 2, the detailed distribution of interviews based on the roles discussed by individuals is shown.

The sample was limited to venture capital firms in high-tech industries, namely biotech, software, hardware, and manufacturing development firms. We chose venture capital firms in high-tech industries for several reasons. First, these new ventures are provided with financing for developing a technology that gives them valuable resources that can help with a variety of business decisions. Second, the strong financial backing makes founders and other stakeholders consider the business as their main career commitment. Furthermore, these types of startups should be of the highest quality, where the highest levels of learning and sophistication would occur, so it could be expected that they have a clear understanding and characterization of failure. In essence, these constitute critical

cases within the population of startups. Thus, for the purpose of this study, the experience of failure is supposed to be more intense in these types of startups than by routine startups.

“Insert Table 1 here”

“Insert Table 2 here”

2.3.2 Data collection

The interview is the typical method for data collection in qualitative research (Elliot, 2005; Creswell, 2007). Interviews were semi-structured with open-ended questions, where the participant could tell the story of previous experiences based upon the context of failure. Other data were collected as background information that played a supportive role in the analysis and triangulation (Creswell, 2007; Kanter, 1977; Yin, 2009). The background data consisted of complementary documents mentioned by the interviewees, in-depth notes during and after the interview, e-mail communication and further telephone communication with participants. Data were collected in the period between August 2014 and March 2016. Interviews lasted 90 minutes on average. The interview protocol was slightly customized for each type of actor. The interviews involved questions about interviewees' current job and position, prior job experiences, failure experience, prior colleagues, the feeling of the failure, definition of failure, ups and downs of failure, consequences after failure and success—if they have had any. Interviewees were asked to narrate the sequence of their experiences, going deeper especially on themes of (partial or total) success and (partial or total) failure as these elements emerged in their stories.

2.3.3 Data analysis

While we collected the data, we inductively analyzed it as well. This approach provided us with a meticulous collection and analysis of qualitative data, and it supported in shaping the sampling and content focus of later data collection.

Moreover, it provided us the basis for designating themes and aggregate dimensions (Gioia et al., 2013) through investigation and comparison of key events.

Interviews were transcribed, and the software package NVivo11 was used to store, categorize, code, and analyze the data, including notes and other background documents. The approach to coding consisted of identifying relevant systematic concepts as nodes in NVivo. Following the grounded-theory baseline, nodes were established during the coding process, in which nodes were created, removed, and merged as needed. The texts with similar indications were grouped under the same node. Some pieces of text were coded under multiple nodes. After cleaning through the nodes by removing and merging, we extracted second-order themes related to entrepreneurial failure. To do so, we contrasted the first-order categories with existing literature to identify gaps and define second-order codes and themes. Each of these themes was then expanded in lengthy memos that were then re-coded, analyzed, and modified in the iterative process of nodes–themes–theory–memos.

The first stage of analysis involved looking into each group of actors' perception of new venture failure. Then, the analysis moved to see how perceptions of failure are similar or different across the groups. This approach provided a detailed understanding of different features of failure among different groups, and how such differences and similarities may arise.

After detailed study of the excerpt texts of the failure nodes, we found that the definition of success is systematically connected to the definition of failure in each group. Interviewees define success as obtaining what they had been expecting from the startup (from here on this will be termed *success definition*). Accordingly, interviewees define and experience failure when their expectations have not been fulfilled by the startup. So, the analysis was separated into success and failure definitions. Then each group's definition was categorized into personal and professional factors, as they talk both about their personal goals and the goals of the startup.

Analysis was also conducted within cases in which people have played different roles. For example, some people have had the experience as both a founder and employee, or as a founder and investor. We coded the perceptions of these people as well to see if there is any variation in how people with only one position perceive failure, in comparison with people who had more than one position (e.g. founder alone vs. founder and investor or founder and employee). We did not find systematic differences in these people's perception of failure.

Although the entire set of participants are from high-tech industries, the specific branch was also taken into account during the process of analysis to see if there were significant differences of failure and success definition across software, hardware, and biotech industries. No such variation was found.

2.4 Findings

As mentioned above, the analyses of employees, founders, and investors show that two main spheres (i.e. personal and professional) frame the actors' definitions of success and failure. Furthermore, elements that individuals point to as indicators of success or failure are multidimensional. These elements are prioritized based on the degree of importance and number of individuals mentioning them, and (see Table 3). Description of each group's definition is as follows.

Founders' Perspective

Whether or not a founder considers his company a personal or professional success appears to be independent of the fate of the enterprise. Founders hesitate to interpret their ventures as total failures, since the entrepreneurial experience allowed them to develop a marketable skillset and to cultivate learning with long-term career effects. Having the time to dedicate to their passion projects is a success in and of itself for many entrepreneurs. *"I feel like I have learned so much and that we have come so far to the point where we are up. That is more success than more entrepreneurs will ever see. But as far as I am concerned, if it is successful, no matter what I do in the future, I have learned so much here that I know that I am going to go forward as a*

much stronger person. A stronger entrepreneur". Such a positive attitude toward failure could be a prerequisite for coping effectively with hardship. It can also enhance the willingness to learn that helps to gain insights and change mindsets, in order to not repeat mistakes (Cannon & Edmondson, 2005; Politis & Gabrielsson, 2009).

For founders, a personal failure means giving up, being rejected, leaving a negative impact, or letting others down. Ultimately, failure is making choices that result in a feeling of regret. Alternatively, professional failure means having a bad product, ending the company, running out of money, or losing it. Founders have a unique concept of failure because of their understanding of uncertainty. The presence of risks in their daily choices shapes their view of failure into something that has more to do with their own actions, and less to do with outside influences that they cannot control.

How founders understand success

Personal objectives have a small role in founders' expectation of how they will benefit from starting a new venture. Skillset improvement and autonomy are two aspects founders consider personal success, although they do not prioritize these. Entrepreneurial experience allows founders to develop different skills other than those in which they are specialized. One example is an entrepreneur with a technical background, who gains from developing marketing skills. Personal development is valuable for founders aimed toward building relationships through the process of establishing the company. Several founders derive value from the personal development they underwent during the journey of building a company and from the relationships that they gained through the process. *"I took it from nothing and built an actual company, including investment, including the tremendous network established, the whole knowledge base gained. The relationships established. I could not imagine a better step. I think it is a tremendous personal success"*.

Autonomy is another aspect that founders state they value in startups. They value having flexibility and being able to spend their time doing what they like. *"I think*

money has not been a big driving force in many of the entrepreneurs I have met. As you know, why not just get a job at a big company and get paid 50 thousand a month, 60 thousand a month? Why do you live on smaller salary and stress and work all the time, stuff like that? It is the freedom to do what I want". It is important for founders to work on things about which they really care, and starting a new venture could give them such freedom. *"For me, the most important thing is somehow getting enough time to build that thing that you really care about building on your own. With me it was not about getting a huge salary or fantastic acquisition bonus, it was mostly about actually making it reasonable for me to spend a couple of years working on something that I really care about".* This is consistent with the study by Roach and Sauermann (2015) where autonomy was shown to be one of the main factors motivating founders to join new ventures.

Most success factors for founders center on what they expect to get from their venture (professional factors), rather than personal preferences. These elements include quality of product or technology, impact to the world, and financial measures.

The quality of the product or technology was a high priority for founders, with close to half of them incorporating it into their success definition. *"[My company] in its own way was very successful. Financially it was certainly not. But it had a well-regarded product and helped a lot of people, well-regarded technology before its time. So, across the board, very positive for me".*

Following the importance of the quality of the technology/product, some founders evaluate the success of their companies based on the impact their venture has on the world. They might measure this by the reach of the company (number of customers), or by the nature of the work (e.g. creating lifesaving drugs), or technology that makes life easier. *"I really evaluate [success] based on how many patients' lives we are impacting, because if I wanted to make a quick flip, I would go make a photo-sharing app or something. That is where you make a lot of money real fast. If you*

want to actually impact the world, you have got to do something hard, and hard things are not necessarily as profitable, and they take a hell of a lot longer”.

Similar to what they code consider in their definition of personal success, founders wish to work with what they really care about, to make an innovative technology/product that has an effective positive impact in the world.

Even though financial attributes are considered less important to founders than product quality or the reach of the company, many founders mentioned it as one of the elements of success. The concern for a positive financial outcome is motivated by three main factors: a sense of responsibility to investors, the need to sustain the company, and desire for personal wealth.

Although founders do desire increased personal wealth, they are willing to overlook a lack of monetary gains in favor of personal growth or impact in their understanding of success. More commonly mentioned than personal finances was concern for positive finances in order to sustain the company. The founders’ main focus is the status, sustainability, and growth of the company, and a positive monetary turnout is important for that. Founders expressed more concern for the company's finances than that of their own, and a dramatic loss in the company's financial position is seen by founders as a professional failure.

Along the same lines, founders have a harder time reconciling with eventual losses of investors’ money than that of their own. *“It is simply letting the folks around you down. Not losing your own money, but losing somebody else’s money”.* A reason for this could be that founders feel responsible for the losses of others, which causes feelings of fault and guilt.

What failure means to founders

In line with a traditional view, where failure is defined as the discontinued ownership of the business by the entrepreneur (Singh et al., 2007; Watson & Everett, 1996), giving up is one of the ways in which founders understand personal failure. There are many obstacles that they must overcome during the entrepreneurial

process; failure is interpreted as the result of not having brought one's own best effort. *"Entrepreneurs are wired for struggle. They are wired for hard work. They are wired for going that extra distance, and it is not a failure to fail, if you can say it like that. But it is a failure if you do not give it all you have, all you have got"*.

Founders take their personal effort in the business seriously. Under the many circumstances that founders cannot control - e.g. competition, new government regulations etc. - the one thing they can control is their own effort in the business. Founders are *"wired for going that extra distance"*. This mindset translates into the idea that the founder's job is actively to try all the options available, even if it means sticking to it until bankruptcy. Choosing to let go before all the options are exhausted goes against this mindset. *"If you fail to actually spend your time on the reasons why you really want to do it in the first place, then that is worst kind of failure that you can have. Basically, you are doing it for all the wrong reasons at that point. To me, that is real failure"*.

Losing sight of the reasons one began in the first place, can also be considered a failure. In this respect, it follows that there are right reasons for building a business, and there are wrong reasons. Along the entrepreneurial process, the goals or reasons behind the startup could evolve into something new. And if the business evolves into something the entrepreneur considers negative, he or she may identify it as failure.

These two factors lead into another sign of founders' personal dimension of failure perception: regret. Failure is where there is a wish for different circumstances or different decisions. *"Failure would be if we did not give it our all. And that we had regrets. I want to make sure I do not have any regrets, no matter what it is that... no matter what the outcome is"*. So, a key for founders in business is to do their job in a way they consider to be right, to work in a way that they will look back on their efforts without misgivings.

Besides the personal dimension, professional elements (the factors relating with the business perspective) also have a major role in founders' perception of failure.

Founders' view of failure is unlike the traditional definitions found in the literature. Traditionally, failure is described as a poor performance (Coelho & McClure, 2005) due to financial measures (i.e. bankruptcy, in Zacharakis et al., 1999) and in broader view as termination of the business (i.e., failure as closure, in Bruno et al., 1992). However, findings show that the founders' views on failure and success are greatly shaped by the role uncertainty plays in their work life. In founding a company, founders take significant risks. Thus, true failure is usually not associated with risks materializing into an undesired outcome. Rather, failure is seen in a narrower set of factors as mentioned previously: in their personal evaluation of efforts, in how their expectations from the new venture are unfulfilled, or by negatively impacting others' lives.

To some founders, there is a desire to positively impact the lives of as many customers, employees, and investors as possible with their product or technology. This means that negatively impacting these stakeholders or experiencing rejection from them has the power to determine whether or not a company is a failure in the eyes of the founder. *“I do not think it was a total failure either. We did not leave a debt to anybody. We did not leave a lot of people unemployed. We did not leave a lot of customers behind who had paid and did not get what they had paid for. So I do not think it was a failure either”*.

This measure is related to what founders look for in their success definition for positive impact. To a founder, failure means having a negative effect on the people involved in the business.

Several founders define failure as having a product that no one would buy. This relates to founders' understanding of success as having a quality product. *“Entrepreneurial failure to me, that is, if I am not able to come out with the product which can be sold directly to the market. I cannot see that it is a success if we, after some years of development, only come out with the prototype which works in the laboratory but will never work in real life. So, it is crucial that we come out with this working system, ready for market”*.

Similar to markers of success, poor financial return is one of the signs founders assign to failure, even though its importance is lower than that of high-quality product/technology. Founders define financial failure as running out of money without anything new to offer. Interestingly, founders' concern about financial return is commonly for the sake of investors' satisfaction. *"The failure is, of course, that we are not making as much money as we would have liked to. We are not growing as fast as especially our investors would have liked to see, so that is a failure, of course"*. This concern for losing investors' money also stems from importance founders' place on using others' money well. A founder takes the position of a steward when he accepts support to build the business, and it is understandable to assume he/she feels responsible for taking care of that money. With it, comes a certain amount of trust from not only the investors, but also the employees; a founder may feel responsible for not letting them down; for employees, that could be by losing their jobs; and for an investor, that could be by losing his/her money.

Employees' Perspective

Findings show that employees define success and failure differently from founders. Although employees did acknowledge the importance of financial success in the overall success of a company, many of them gave more weight to learning and skillset development into their definition of success. Employees' lack of emphasis on financial outcomes could be the result of more tempered expectations when it comes to the potential rewards of working at a startup. *"If I were interested in the purely financial approach, I would not be working at a startup. I would be working somewhere else making a lot more money"*.

While employees commonly consider having a stable salary to be the baseline for success, many specified that success is not just about being employed, but it is about working for a company in which they can have impact, even though it is not their priority.

How employees understand success

Unlike founders, whose focus is evenly divided between the personal and the professional, employees focus mostly on the personal sphere to define success and failure. They join startups with the assumption of gaining experience and developing skills through learning which may lead to future career opportunities. That is, hoping to improve their skills, as a stepping-stone toward their future career path. They think there would be more to learn when working in a new venture than in a large company. They might be assigned to a broader set of tasks, as there are generally fewer people hired in startups, and all employees must be flexible in the scope of their work. *“That is the real value in joining a startup—the learning and experience that you gain. Why would I want to choose the first path when that learning had an opportunity to be false? I would want to join an opportunity where I could actually validate that learning that I had, so that the next time that I do it, I know exactly what I need to do”*.

In explaining their expectations from the business (i.e. professional dimension for defining success), employees showed concern for the goals of the company and for achieving product–market fit. Employees are less concerned with long-term exit opportunities than founders, and appear to place greater emphasis on short-term goals and reaching sales targets. This may be due to their roles within startups, considering that they have less responsibility to think of the long-term of the business than do founders and investors, and are tasked to accomplish the short-term, daily goals.

Furthermore, employees specified that they care about impact. *“It feels good if you can personally make that happen. When you get those moments when you get affirmation on something that you basically you created from zero, there is no better feeling, it is success”*. In a larger, more mature firm, employees would generally have less personal impact on the company than they would in a startup, where their roles and tasks entail more responsibility. Still, employees value learning and skill improvement more than they value both reaching short-term goals and long-term impact.

What failure means to employees

Employees hesitate to interpret entrepreneurial experience as failures because they derive value from both learning and the effect it has on their career paths. So, to them, failure occurs when they do not gain any learning or experience out of working at a startup. This is what they expect to gain from a startup: developing different skillsets, and having more autonomy to do so. However, if reality turns out not to be as they anticipated, and they are unable to acquire new and valuable skills, then employees interpret the experience as a failure. *“If I did not learn... If I was not challenged or I was not learning”*.

Another important element in employees’ failure definition is when they do not pursue what they believe is their path. *“I also have this picture of the future where the costs of doing your own thing become low enough that there is no such thing as failure. I think the only way you could really fail is to not pursue what you see as the path”*. In particular, some employees think there have been lots of wasted moments that could have been spent on the process of building their future career path. So, working at a startup that is not in line with their idea of their own future is considered a failure. When what they expected to gain from the startup toward their career path is not what they actually gained, then some employees interpret it as taking the wrong path.

Similarly to founders, giving up on their goals is seen as failure by many employees. *“When you start to think creatively about what does failure really mean? And failure only truly is failure if you give up”*. This element is in line with their concern for the outcome of their efforts in a startup. Some employees believe in not giving up when developing an innovative technology, without insight about financial issues of which investors are aware.

Failure in employees’ professional point of view is not being able to take the product to market. Reasons could be, for instance, having a plan to enter the market that does not work out or is not realistic. For employees, if they work closely with the product, they would have a direct interest in its success or failure. If they feel their own work

is linked to how the produce arrives to market, then a product failure is seen as a professional failure for the employee as well. This is similar to how founders perceive failure as taking a poor product to market. One employee saw the importance of understanding the customer in order to having the product do well in the market and stated that failure would be to misunderstand the customer. *“You need to get it out fast and get your value measurements back. Do people want to use it. So that is what to me failure is. Failure is thinking you know what people want without really knowing it”*.

In line with the way they value short-term goals in their success description, employees described failure as not making daily goals and as living without any purpose. *“Failure: if it does not make sense anymore to do what you are doing, even if funding does not run out, it is a failure if you do not change what you are doing. Failure is when you keep going in a direction that does not make sense”*.

Not making a profit is also one of the ways employees perceive failure, even though its priority is very low in their evaluation. What is highlighted is that monetary success has not been the employees’ concern, yet financial return has been accounted for in their failure realization. Employees want the company to do well, as it is the company that supports their jobs. If the business has a poor financial return, employees will naturally be concerned with layoffs. *“Certainly, having a company that goes under or has a major layoff because money has run out would be a candidate for failure”*. So, employees view a company financial failure as a professional failure, as it can also directly influence their own monetary returns.

Investors’ Perspective

Unlike employees and founders, investors’ definition of success and failure is much less diversified. What is clear is that, first, investors value success and failure mostly by professional standards. They also pay attention to the learning perspective of failure, as do founders and employees. However, investors’ emphasis lies on economic measures. From their point of view, true failure is team failure, meaning

that the inability to work together in new venture results in other consequences such as financial failure and market failure.

How investors understand success

The clearest paradigm to emerge from the data was the significance of financial returns in investors' definitions of success. While there is not a universal threshold that successful companies must surpass, recouping investment appeared to be the bare minimum for investors to deem a company successful. Another element for investors in defining success is what they describe as when a good team of workers develop an idea into a well-working business. Investors prefer to choose the team of the startup, rather than giving the responsibility to founders. *"Success for us is return... In our documents, information documents, the terms of capital to provide an abnormal alpha return to our limited partners, that is success for us. Success is really well-defined in our operating agreement"*.

To investors, working with who they consider are right people is one of the major elements in both personal and professional perception of success. *"It is all about people, a great team can make something out of a mediocre idea but not the other way around. If a team struggles to explain an idea, gather a strong team, tell a story that is convincing to raise enough funds, and articulate their competitive advantage they are likely to struggle at every other important stage and they are unlikely to succeed. So, if a good team finds money, normally, they will figure it out somehow"*.

Similarly to founders and employees, the product and its market potential, is one of the factors investors' consider when choosing to invest in a new venture. Investors typically would like to see the tangible outcome of the startup, i.e. the return of their investment. *"Realizing the potential of the investment, and the company itself, is a big element to whether I consider it a successful venture. To have something tangible out, to see its effect in the market, like a bridge, that you can see people use that is a big factor of satisfaction... If failure is a spectrum, it was somewhere on that spectrum. But there has got to be a threshold somewhere—3 times or less is probably a failure"*.

What failure means to investors

Investors describe personal failure as making mistakes in selecting people they eventually consider as inadequate. One investor states how important a good team of people can be, and how the lack of a good team leads to failure. In this regard, investors fail when they misread people and ultimately choose to invest in a founder (or a group) that disappoints them. *“The team issue is the most painful one to watch, that is the one that we really do not have justification for, it is kind of an investor failure—we picked the wrong team. But as good psychologists as we think we are, and we guess with people, we never know what is going to happen”*.

Putting this in perspective though, one investor said that there are so many reasons for a founder to start a company that it is difficult to find one who does it for reasons that are in line with the investor’s. *“Every founder that we have ever invested in, even if they were a failed founder, has somehow landed in some pretty cool position post-failure. So that is also hard on the investor’s side, because you do not know the true reasons why people are doing what they are doing”*.

From the professional dimension of failure perception, a company that is still functioning is not technically a success just because it still runs. If it is losing money, then failure would be choosing to continue with it, rather than killing the project for the right reasons. These are the so-called “zombie companies”, and by making enough money to survive but not enough to produce a large return, they are strongly disliked by most by investors. This is one of the major differences between investors and founders/employees in their views of failure.

Misunderstanding the competition or misreading the market is another element of investors’ failure definition; however, they do not consider it as true failure. They interpret it as commercial and market failure, as investors are aware of the uncertain nature of markets. *“Something is a commercial failure if the product is right, but it is just a little too early to market and does not catch the wave at the exact moment that the market is ready to go”*. Many investors mention that a failure made by

misreading the market is due to not reacting quickly and critically enough to market changes, good ideas or changed circumstances.

Investors take part in startups for the promise of financial return, and they view a successful business as one that delivers it. They take large risks and understand that the risk comes with an even larger amount of uncertainty; therefore, many investors see some investments not as a failure, but as non-successes. In this sense, a failure in the true sense of the word is not measured by monetary valuations.

“Insert Table 3 here”

Perspectives across groups

The data also supplied insights into how each group views other’s perceptions of failure. This analysis could facilitate understanding of what motivates different actors to join startups, as well as help to clarify alignments and misalignments across groups.

Results are classified in three main areas: (i) alignment, which shows similarities between the groups’ perceptions of failure/success; (ii) misalignment, which shows aspects about which actors are mistaken on other groups understanding of failure/success; and (iii) overlooked, which shows how groups are unaware of incentives of other groups, as well as definitions of failure. A summary of key elements is shown in Table 4. An immediate point of tension was clear in the way the different stakeholders (investors, founders, employees) conceptualized success and failure, their perception of what other groups defined as success and failure, and the consequences of these misalignments and misperceptions.

Founders’ view of how employees and investors define success and failure

Founders believe that investors and employees have different definitions for failure than they do. They believe employees experience failure differently than founders because they do not own failure to the same extent—i.e. the product was not “their baby”.

There is only partial alignment between how founders think employees would view success and failure and how employees do indeed perceive the issue. Where there is resonance is in respect to freedom and career path. Founders speculate that employees experience failure as backtrack in the road to their future career opportunities. Founders also believe success to certain employees is simply holding down a stimulating job that allows them to have some level of agency. In this case, failure would be perceived by the employee as losing the freedom or ability to make a change in their daily work life.

However, founders think employees are mostly concerned with their paychecks, at the expense of his or her commitment to the startup. Yet, this is not aligned with employees' concern and with how they interpret failure in light of their reasons for joining a startup. As employees mentioned in various ways, their reasons for joining a startup are beyond the salary; employees care about developing skillsets and being part of implementing the idea or product into the market.

Furthermore, the results show founders are not completely aware of, or perhaps underplay, employees' incentives for joining startups. An important factor is how employees want to have an immediate impact on the startup and its environment. It could be that founders do not recognize, or do not capitalize, on how employees feel co-responsible for the impact of delivering the technology/product to the market.

When it comes to investors, founders rightly believe that poor financial return is the primary indication for success and failure. However, most founders have the impression that investors would disqualify any company that did not make money from being described as a success

Founders go further and believe that investors blindly weigh profits and return of the investment. However, investors also account for team aspects, and put forth a nuanced view of non-success companies, as described earlier. So, founders are pushed by investors' desire for success to launch the technology or the product to the market for fast growth. Founders have a difficult time identifying when the startup is about to fail.

In this regard, what founders do not realize but investors are aware of is identifying the proper time to stop. Founders may not see that the business is failing; they may do it in the last minute once they finally run into a wall, or they may even find hope and use it to keep the business running. On the other hand, investors could see the end and even pull the plug.

Employees' view of how founders and investors define success and failure

Employees believe that founders place less emphasis on making money and more emphasis on having an impact and fulfilling the vision they set out to pursue. Thus, employees see that failure to founders would not be measured by monetary standards, but by their impact on the world. What employees did not consider is that improvement of their personal skillset is also one of the important components of founders' definition of failure/success.

Similarly to founders, employees believe that investors quantify success, and ultimately failure, based on the return on investment. What employees describe as investors' definitions of failure and success is in terms of a black and white approach, where investors want the investment back with profits and nothing else. Like founders, employees could not identify the low performance and falling-down threshold. Due to the fewer responsibilities and detailed involvements in the startup, it is understandable that employees may disagree with the investors' point of view.

Investors' view of how founders and employees define success and failure

Investors have sometimes described founders as "delusional". So, it is no surprise that investors are aware that founders have very different ideas about what constitutes failure. While many of them assumed that founders too are out to make money, some believed that founders seek notoriety, influence, to create jobs and to grow fast. The divergence between how investors perceive founder satisfaction and how founders experience it indicates that investors are not attuned to what founders are hoping to achieve. Entrepreneurs are seen as dreamers. Similarly to employees, investors are oblivious to the personal aspects of success in the eyes of founders.

Investors believe that employees' definitions of failure are tied to employment. Holding down an interesting job with upward mobility is employee's most valued benefit, according to investors. This perception of success may change if employees hold stock options in the company, in which case they cease to be mere employees. Investors believe that some employees want to join and work for a startup for the fun of it, they are not interested in the product or the success of the company per se. However, failure to them still is expected to be the end of the company, and therefore the end of their jobs. What is clear is that investors are completely misaligned with employees' definitions. Furthermore, they do not realize the importance of freedom to employees in joining a startup and the impact they would like to have inside the company.

“Insert Table 4 here”

2.5 Discussion

Drawing on an inductive study, this research contributes to our understanding of how main actors in the entrepreneurial process understand failure, how their perceptions are similar or different from those of other actors, as well as how scholars interpreted it as a new venture failure.

Findings show that the concept of failure is contingent upon what people look to take from startups. It embeds both personal and professional dimensions that differ among different groups of individuals. That is, people have different incentives for joining a startup and their definition of failure is formed based on what they expect to get from a startup and what the startup demanded from them. The most common incentives for founders center on the professional dimension, including the quality of the technology/product and the impact the technology could have in the world. Then, if the technology is not accepted by the market as expected, they interpret their business as failure.

Unlike founders, employees' incentives center mostly around the personal dimension, which aims towards learning and skillset development. Their perception

of failure is formed as they encounter challenges for their future career path and lack of growth and learning. Surprisingly, having the immediate impact through development of technology/product is also something employees hope to obtain from the startup, even though the impact they look for is different from that of founders.

The incentives of investors are less diversified and as a result, their perception of failure focuses on the financial performance, which is to be expected since investors base their investment decisions on financial data (Zacharakis & Meyer, 1998; Huang & Pearce, 2015). Even though investors interpret failure according to return of investment, they do qualify it as financial failure. The “true” failure in investors’ eyes is that of an ineffective team that could not work together. They believe an unsuitable team working together will lead to a failed product/technology and ultimately no return on their investment. Although financial return is one of the elements of failure definition for founders and employees, the interpretation is completely different by each group, which shows how people have different goals in the entrepreneurial process. For example, the way founders weigh making money and growing expectation in a startup process is different from investors. So they lose investors’ support at certain points, which makes them stop developing the company.

Findings of the second stage of the study show some hidden features of new venture failure. This includes tensions among groups during the lifespan of the new venture, different or even opposite incentives of people, and how people are misinformed about other groups’ incentives in entrepreneurial activity. Founders believe that investors would disqualify any new venture that did not make the amount of money within their success threshold, which, in reality is most likely true. This makes it difficult to continue as new ventures, particularly for high-tech startups that rely heavily on investors as one of the main sources of survival.

Finally, findings of this study show the concept of failure is beyond just the termination of the new venture (Bruno et al., 1992; Wennberg & DeTienne, 2014;

Wennberg et al., 2010), bankruptcy (Zacharakis et al., 1999), and poor performance (Coelho & McClure, 2005). This article finds evidence for a different approach from what literature defines as failure and how people understand it. People engaged in startups and entrepreneurship are more careful to label a situation as a failure, as they tend to be well aware of the uncertainty surrounding startups. An exception is found in extreme circumstances, such as team/managerial conflicts, in which case failure is an accepted term. Besides, they hesitate to label the new venture a failure, although they are well aware of poor performance issues, since they believe that as long as there is learning coming out of the experience, it could not truly be a case of failure. This might come from a positive attitude toward the act of failing where it can enhance the willingness to learn from the situation and help changing mindsets for future functions (Politis & Gabrielsson, 2009).

2.6 Limitations and future research

This study has mainly focused on high-tech industries. Future study could expand on low-tech industries with detailed understanding of the concept of failure by different groups, and how tensions and consequences would be similar or different from those of high-tech industries. This paper has focused on three main groups of individuals; it would be valuable to take other stakeholders into account. For example, future research could investigate the concept of failure and its features from policy makers' and consultants' perspectives to see if there are other dimensions of new venture failure that could be valuable in entrepreneurial firm survival. Finally, it would be valuable to investigate how the perception of angel investors would be different or similar to that of venture capitalists.

Table 1: Quantitative detail of interviews

	US	Denmark	Total
Individuals interviewed	49	37	86
Roles discussed by individuals	84	46	130

Table 2: Detailed distribution based on the roles

Roles discussed by individuals			
Country	Employees	Founders	Investors
Denmark	18	24	4
US	20	35	29

Table 3: Categorization of key elements in success and failure definition by founders, employees, and investors

	Type	Founders	Employees	Investors
Success definition	Personal	<ul style="list-style-type: none"> - Gaining personal experience and skills - Doing what you like, autonomy 	Learning and skillset development	Not mentioned
	Professional	<ul style="list-style-type: none"> - Quality of the product - Making a World Impact 	<ul style="list-style-type: none"> - Reaching short term goals; sale targets - Having impact 	<ul style="list-style-type: none"> - Success is a good team - Realizing the potential of the product
		Monetary success		
Failure Definition	Personal	<ul style="list-style-type: none"> - Giving up to the obstacles - Regret 	<ul style="list-style-type: none"> - Empty Experiences and learning - Pursuing the wrong path, sampling time on the wrong thing in personal path - Giving up 	Mistake (by investor), picking the wrong people
	Professional	<ul style="list-style-type: none"> - Rejection / Negative impact - Product quality: product that does not fit the market 	<ul style="list-style-type: none"> - Not getting the product to the market - Missing daily goals; continuing without purpose 	<ul style="list-style-type: none"> - Keeping the zombie alive - Commercial failure/misreading the market - Slow response
		Monetary: the complete lack or loss of significant monetary amounts		Shutting down with monetary issues

Priority Level

High	Pointed out by large number of individuals
Medium	Pointed out by a number of individuals
Low	Pointed out by very few individuals

Table 4: How each group describes other group’s views on failure and success

	Founders think of:					
	Investors’ definition			Employees’ definition		
	Aligned	Misaligned	Overlooked	Aligned	Misaligned	Overlooked
success vs. Failure	Financial return	Blind care of financial return	Hitting-the-wall point	- Career path effects - (Losing) freedom	Paycheck	Having impact
	Employees think of:					
	Founders’ definition			Investors’ definition		
	Aligned	Misaligned	Overlooked	Aligned	Misaligned	Overlooked
success vs. Failure	(not) Having the impact	Financial return	Skillset development and growth	Return of investment/ (No) profit	Black and white approach	Hitting-the-wall point
	Investors think of:					
	Founders’ definition			Employees’ definition		
	Aligned	Misaligned	Overlooked	Aligned	Misaligned	Overlooked
success vs. Failure	Financial return	Blind think of fast growth	Personal experience and skillset development	Career path (Losing job)	- Tied into employment - Do not care about the company improvement and product	- Freedom - Having impact

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Chapter 3. Falling off the unicorn: The structural shortcomings of startup employment³

Abstract

This paper focuses on the experiences and outcomes of entrepreneurship for startup employees, whose perspective is rarely studied. Our inductive study argues that individuals join startups expecting greater professional growth, personal fulfillment, and financial rewards than in more established firms, but that these expectations are rarely met. We identify a series of structural factors that make it unlikely if not impossible for startups to deliver on the generalized expectations of startup employees. We find that unrealistic expectations persist nonetheless due to misaligned interests between investors, founders, and employees that create incentives for investors and founders to perpetuate existing narratives regarding the benefits of startup employment. Surprisingly, we find that a complementary set of incentives lead startup employees to also perpetuate unrealistic generalized expectations. The study uncovers a previously unrecognized cost associated with startup ecosystems disproportionately borne by startup employees and highlights an additional mechanism by which myths and unpopular social norms can persist.

³ This paper, co-authored with Rodrigo Canales, Matthew D. Regele, and Max-Gunnar Groberg, is in the process of re-submission to a top journal.

3.1 Introduction

Startups are widely believed to have a substantial impact on a region's economic performance and growth (e.g., Hart, 2003). In the U.S., for example, few issues receive as much bipartisan support as the promotion of entrepreneurial activity (e.g., Clifford, 2016; Kasperowicz, 2012). For the most part, research has supported a positive view of entrepreneurship (Van Praag and Versloot, 2007). Startups are argued to play a disproportionate role in innovation and economic development (Baumol, 1990; Wong et al., 2005; Baum and Silverman, 2004). A large body of work also suggests that startups contribute substantially to job creation and account for a significant share of employment growth. In some countries, for example, startups have been shown to account for as much as 70 percent of all job creation (Birch, 1987; Davis et al., 1996, 1998; Neumark et al., 2011). Prior research has predominantly focused on the experiences of founders, such as the motivation for launching a startup, the typical traits of entrepreneurs (Elfenbein et al., 2010; Gompers et al., 2005; Hamilton, 2000; Lazear, 2005; Stuart and Ding, 2006), and contextual influences on founders (Dobrev and Barnett, 2005; Freeman, 1986; Halaby, 2003; Sørensen, 2007). The experiences of startup employees, in contrast, are not well understood. To the extent that research has considered employees, it has mostly equated their experience with that of startup founders (Politis and Gabrielsson, 2009; Singh et al., 2007; Zacharakis et al., 1999) or focused on predicting which employees will ultimately become founders themselves (e.g., Nanda and Sørensen, 2010; Sørensen and Fassiotto, 2011). While research has shown that startup employees are much more likely to later become entrepreneurs, the fact remains that the vast majority of them will remain as employees (Dobrev and Barnett, 2005; Freeman, 1986; Halaby, 2003; Sørensen, 2007). Further, recent work that focuses explicitly on startup employees indicates that the motivations, perspectives, and experiences of these individuals are distinct from those of founders and thus constitute a critical perspective for understanding the dynamics of entrepreneurial firms (Neff, 2012; Roach and Sauermann, 2015).

Young firms are increasingly seen as attractive employment options for job seekers. For example, recent research has shown that skilled university graduates, especially those with a science and engineering background, are increasingly choosing startup jobs as promising places to launch their careers (Greenberg and Fernandez, 2015; National Science Board, 2012; Roach and Sauermann, 2015). This is reflected, among other things, in the demand for entrepreneurship education programs, which has steadily increased (e.g., Katz, 2003; Kuratko, 2005). It is also consistent with the emphasis that is routinely placed on entrepreneurship as an engine for employment. Yet, while a growing number of skilled workers seem to view startup employment as an attractive employment option, existing research offers somewhat conflicting evidence about the characteristics, experience, and quality of such jobs relative to work in more established firms.

Although little work has directly examined the experience of startup employees, scholars have theorized that three types of benefits disproportionately accrue in startup employment (Campbell, 2013; Hamilton, 2000): (1) professional development and growth (e.g., acquisition of broad human capital, progression of professional rank); (2) subjective expectations about the individual day-to-day experience from working in a startup (e.g., expected job satisfaction, impact, and independence); and (3) objective financial benefits (i.e., salaries and the value of stock options). Yet, research also demonstrates that there are potential costs or risks associated with each of these possible benefits. With respect to personal growth, startup employment has been theorized to have both short- and mid-term positive impacts on an employee's accumulation of human capital through various mechanisms, which should translate to improved long-term labor market prospects (Campbell, 2013; Lazear, 2004). However, there is also evidence that workers can more reliably develop valuable, transferable skills and knowledge in larger, more established organizations (Bidwell and Briscoe, 2010). With respect to job satisfaction, several studies have suggested that startup employment is associated with greater personal satisfaction (Benz and Frey, 2008; Shane et al., 2003), but we also know entrepreneurship is associated with long hours and high levels of stress

(Neff, 2012). Finally, from a financial perspective, some research suggests startup experiences have a positive effect on earnings versus working in established firms, especially for skilled workers (e.g. Campbell, 2013; Roach and Sauermann, 2015.), but recent work has shown that startup employees actually experience lower earnings in the short term that seem to also persist in the long run (Sorenson et al., 2018; Burton et al., 2018). In general, therefore, there is increasing evidence that challenges the theorized benefits of startup employment.

This raises questions about the increasing popularity of startup jobs among skilled employees. In particular, we know little about how employees understand, assess, and experience the (potential) risks, benefits, and costs of joining or remaining at a startup. Through an inductive, qualitative research design, we explore these issues through three guiding questions: 1) How do employees define, understand, and evaluate the potential costs, risks, and rewards of joining a startup? 2) How do employees reconcile their actual startup experience within with generalized expectations and recruiting narratives? and 3) What factors determine and maintain these generalized expectations? We explore these questions through 86 interviews with investors, founders, and employees of venture capital-backed startups. We find that even in this critical case – where the potential benefits of startup employment are most likely to manifest employees' expectations are known to be rarely met. Further, we find that these unfulfilled expectations are not the result of idiosyncratic differences across individuals or firms, but stem from structural features of venture capital-backed entrepreneurship.

The study offers three key insights. First, we find that employees do, to an extent, recognize that startup jobs represent higher risks, and that the potential rewards are accompanied by potentially high costs. However, we also find that employees' evaluation of risks, costs, and rewards is often biased: they tend to overestimate the likelihood of obtaining certain benefits, and fail to recognize the likelihood and extent of associated costs. In particular, employees generally comprehend the financial risks of startups and recognize that they are unlikely to experience windfall earnings gains. Yet, they expect that this risk will be offset by autonomy, learning

opportunities, and professional advancement, without properly adjusting for the extent to which all risks and benefits inside a startup are interdependent and are equally affected by uncertainty. Third, we find that employees' biased expectations and beliefs result, in large part, from structural features of venture capital-backed entrepreneurship. Specifically, the need to recruit and retain skilled employees encourages founders and investors to sustain myths about the benefits of startup jobs, which they do both by perpetuating unrealistic narratives and by withholding information from employees. We find that employees also willingly perpetuate the narratives (even in the face of conflicting personal experiences), because they find themselves bound to the startup labor market and its norms.

These findings have a number of important theoretical and practical implications. Theoretically, we build on research about social myths and unpopular norms, uncovering additional reasons such myths emerge and mechanisms by which they are perpetuated. We also contribute to our understanding of the dynamics of entrepreneurship, suggesting that many of the benefits of entrepreneurial activity that have been identified in academic research, policy circles, and the popular press may be accompanied by previously unrecognized costs which may be disproportionately borne by startup employees. These theoretical insights have clear implications for practitioners, who can better support employees to avoid or mitigate unanticipated costs of their startup experience. Our findings also suggest the need to inform job seekers about the realities of startup work in order to better inform their career decisions.

3.2 Startup Employment

Entrepreneurship is often cited as a key driver of economic and employment growth, yet we have relatively little knowledge about the experiences and trajectories of startup employees. If employment growth is a key benefit associated with entrepreneurial activity (Birch, 1987; Davis et al., 1996, 1998; Neumark et al., 2011), then understanding the nature and quality of startup jobs seems critical. Recent work has begun to explore these issues, focusing in particular on four

aspects: the characteristics and motivations of startup employees, their compensation and economic outcomes, their professional trajectory and growth, and the non-pecuniary benefits of startup jobs such as increased autonomy and impact. Although such work has begun to uncover valuable insights about startup employment, important questions remain about each aspect.

First, a wealth of research has explored the traits, experiences, and preferences associated with startup founders (for good reviews see Sorenson and Stuart, 2008; Parker, 2018; Shane, 2008). More recently, research has also explored the characteristics of startup employees, showing that young firms tend to hire younger, less experienced, and less qualified employees on average (Nystrom and Elvung, 2014; Ouimet and Zarutskie, 2014). In fact, it has become clear that there are large sorting effects, mostly driven by firm size, where startups (as small firms) hire employees from mostly different employee pools than established firms (Burton et al., 2018; Sorenson et al., 2018). But even after matching on observable employee characteristics, startup employees who choose to join startups tend to have systematically different preferences and expectations than both startup founders and employees of established firms, with an emphasis on autonomy, impact, and challenging work (Ouimet and Zarutskie, 2014; Roach and Sauermann, 2015; Sauermann, 2017).

Differences in observable employee characteristics may partially explain the widely-replicated finding that startups, on average, pay less than established firms (Davis and Haltiwanger, 1991; Villemez and Bridges, 1988; Oi and Idson, 1999; Hollister, 2004). Indeed, given their youth and lack of experience, most startup employees would probably earn less in any organization (Nystrom and Elvung, 2014; Ouimet and Zarutskie, 2014). However, startup employees seem to earn less even after carefully controlling for their characteristics and qualifications (Brown and Medoff, 2003; Troske, 1999; Burton et al., 2018). Notably, these pay differentials persist in the long term, as joining a startup seems to put employees on a separate labor market with a different – and disadvantaged – earnings trajectory than the one they would follow in an established firm (Sorenson et al., 2018). Most of the effect seems to be

driven by firm size and instability rather than age, as (the minority of) startups that manage to grow rapidly seem to actually pay employees a short-term premium that nonetheless dissipates as the startup ages (Burton et al., 2018; Sorenson et al., 2018).

That employees who choose (i.e. are not sorted into) startup employment should expect to earn significantly less in the long-term is puzzling, as individuals choose their job in large part based on expectations about how it is likely to impact their career trajectory and compensation over the long run (Bidwell and Briscoe, 2010). It also runs counter to the theorized benefits of joining a startup. Entrepreneurial firms are expected to grow at faster rates, allowing early employees to grow with them (Haltiwanger et al., 2013; Barron et al., 1994). Startup employees are also expected to have less role differentiation (Blau and Schoenherr, 1971), which should translate to wider responsibilities and the development of a broader set of skills (Sørensen, 2007; Campbell, 2013). This type of human capital could provide attractive opportunities for startup employees, both as more seasoned and balanced managers and as entrepreneurs themselves (Lazear, 2005; Luzzi and Sasson, 2016; Campbell, 2013; Sørensen, 2007; Gompers et al., 2005). That these purported benefits are not reflected in the earnings potential of startup employees – not even the ones who join the most successful firms raises interesting questions about the expectations that lead employees to join startups and the experiences that lead them to remain in them.¹ Put differently, if working for a startup places employees in a separate labor market, with fewer and worse available career trajectories, why would they willingly choose it?

Researchers have long recognized that a key motivator for founding a business is autonomy and independence (Douglas and Shepherd, 2000; Blanchflower and Oswald, 1998). They have suggested such autonomy is also attractive and available, at least to a certain degree, to startup employees (Baron et al., 1996; Neff, 2012). Individuals may thus join and remain in startups in search of work flexibility and autonomy (Roach and Sauermann, 2015; Akerlof and Kranton, 2000; Sauermann, 2017) and may be willing to forgo higher pay in more established organizations in exchange (Stern, 2004; Sauermann, 2017). Yet, whatever autonomy exists for

startup employees, it may come at a significant cost. Entrepreneurs and their employees tend to report higher levels of job satisfaction (Idson, 1990; Roach and Sauermann, 2015), but startup life also comes with significant personal and economic stress for both founders and their workers (Pollack et al., 2012; Neff, 2012; Brennan and McHugh, 1993). Individuals may enter startups anticipating flexibility and independence, but instead face long hours, uncertainty, and role conflict.

In summary, while we have increasing clarity on the characteristics, expectations, and career outcomes of startup employees, we have little insight into how they actually choose and experience their jobs. In particular, we know little about their actual reasons for joining a startup, how they developed expectations about startup employment, the extent to which they are aware of the potential risks and tradeoffs of their choice, or whether they ultimately feel the tradeoffs and risks were worthwhile. For example, employees are surely aware that startups have a higher risk of failure, so they probably adjust their short-term economic expectations accordingly. What is less clear is the extent to which they consider firm instability and how it might mitigate or eliminate other expected benefits. Put differently, career growth, organizational and personal learning, subsequent job opportunities, and the day-to-day experience of autonomy or meaning are likely to be impacted by a startup's level and rapidity of success. But if employees are making choices accounting for certain types of risk and not others – or underestimating the extent to which these risks can interact with or amplify each other – then their experiences and outcomes may fall far short of their expectations.

This study explores the experience of employees, founders, and investors in venture capital-backed startups in order to develop insights about how and why employees decide to join such firms, whether their jobs live up to their expectations, and how they reconcile their lived experiences with generalized expectations about startup work.

3.3 Data and Methods

3.3.1 Sampling Strategy and Data

Given the relatively sparse and conflicting knowledge we currently have about the experience of startup employees, we conducted an inductive, qualitative exploration of the views, expectations, and experiences surrounding work in emerging firms. During the period of August 2014 to March 2016, we collected qualitative data from venture capitalists, founders, and employees of existing and failed startups in high-tech industries. Interviewing founders and venture capitalists in addition to employees was critical to our study because we were interested, for example, not only in how employees interpreted information and experienced their work, but also in how founders and investors might control that information or otherwise influence the work experience. In addition, while employees could only speak from their personal experience, founders and especially investors have recruited, promoted, recommended, and fired hundreds of employees, so can also speak from their observation of the startup labor market.

We focus on VC-backed startups for a number of reasons. First, venture-backed firms have been shown to be better funded, start at a larger scale, pay higher salaries, attract better talent, and grow at a more rapid pace (Davila et al., 2003). These characteristics have been shown to be good predictors of startup quality and survival (Arora and Nandkumar, 2011; Bengtsson and Hand, 2011, 2013). Second, VCs demand more rapid formalization and professionalization of the startups they invest in, including the establishment of formal management and corporate governance practices (Hellmann and Puri, 2002). Third, VCs tend to focus their investments in more promising and faster-growing industries (Hall and Hofer, 1993), which also tend to systematically attract higher-quality employees (Braguinsky et al., 2012; Campbell, 2013; Sauermann, 2017). Fourth, VCs have been theorized to be especially good at leveraging their status and social networks to secure better outcomes for their investments (and the people they invest in) (Pollock et al., 2015; Wal et al., 2016; Sorenson and Stuart, 2001). This should both increase the

probability of success and lower the downside risks for a given startup. It should also provide a status signal for startup founders and employees, which may translate to labor market benefits (Davila et al., 2003). Finally, we expect employees of these firms to be especially informed when making decisions. Put differently, it is widely known that small firms provide worse jobs. But high-growth startups are supposed to be different, if riskier, because of their dynamism (Sorenson et al., 2018; Baron and Hannan, 2002). Qualified employees *look past* a startup's size to focus on its potential trajectory. VC-backed startups thus constitute a critical case regarding outcomes for startup employees (George and Bennett, 2005): any expected benefits of startup employment should be particularly evident in these firms. In contrast, if the expected benefits of startup employment are not realized in VC-backed startups, it is difficult to imagine better outcomes for employees in other startups, which are more likely to follow the typical dynamics of small firms (Burton et al., 2018).

We also wanted to make sure that any negative outcomes related to less successful firms could not be attributed to *ex-ante* lower firm quality. To address this issue, we first interviewed partners in venture capital firms with an above-average return performance. During the interview, we asked them to identify successful, surviving, and failed startups that they had evaluated as *equally promising* at the time of investment.² We then contacted founders and employees from startups in each of those categories through snowball sampling (Lincoln and Guba, 1985).

We explored other sources of variance to better capture the range of prototypical experiences for startup employees across settings and outcomes. In addition to sampling successful, surviving, and failed firms, we also sought geographic variance to ensure that our findings were not an artifact of a particular investment region. We thus followed a similar sampling strategy in two different regions of the U.S. (the East Coast and the West Coast) and in Denmark. This variance is significant because, while both the East and West coast are associated with vibrant startup environments, they are known to vary across cultural, economic, legal, and institutional dimensions (e.g. prototypical industries, non-compete laws, etc.) that can also have an effect on employment outcomes (e.g., Marx, 2011; Marx et al.,

2015; Saxenian, 1994). For its part, Denmark also displays significant VC-backed entrepreneurial activity (e.g., Dahl and Sorenson, 2012) but with important structural differences, where public financing plays a more prominent role and where the legal and institutional framework is more protective of employees (e.g., through unemployment insurance).

We collected a total of 86 in-depth, ethnographic, semi-structured interviews. This final number was determined by the point where we reached sampling saturation, or where no interview revealed themes that had not been covered by several others before. The distribution of interviews according to actor roles is shown in Table 1. Naturally, several individuals had performed more than one role throughout their career (employee vs. founder vs. investor). In those cases, we were careful to specify the role-perspective that informed each statement in the interview. They were particularly informative, as we also asked interviewees for a contrast between the different roles they had played for a given topic. As a result, we ended up with data from 130 different role perspectives. It is worth highlighting that, since we purposefully sampled across sources of meaningful variance, we expected the themes of this paper to vary across our observed industries and settings. Yet, aside from some differences between managerial and technical employees (discussed in our findings), we were surprised to find no discernible difference across categories in the general distribution of subjects' motivations, expectations, and experiences. This is not to suggest that all our interviewees had identical perspectives. Rather, the range of perspectives and the overarching themes expressed by subjects across categories were remarkably similar across contexts.

Interviews lasted an average of 90 minutes and consisted of three broad sections. The first focused on the individuals' background, trajectory, and the path that had led them to their current role. This allowed us to explore the motivations behind their career decisions and the expectations that influenced their choices. The second focused on their conceptualizations of risk, uncertainty, success, and failure in the context of entrepreneurial firms. This was a central component of the interviews, as it allowed us to explore how individuals understood and experienced the risk,

uncertainty, and unavoidable failures of their startup experiences. The third delved deeper into some of the specific startup experiences identified in the first two sections to explore how individuals – especially employees – navigated and were affected by a startup’s founding, development, and success or failure. We placed special emphasis on the trajectory of a startup’s assets, including technologies, knowledge, relationships and, most important, its employees as the firm succeeded, survived, or failed. As mentioned, this is where including the perspective of founders and investors was particularly informative, as they could reflect on patterns of employee experiences across startups and firm stages that, while consistent with the lived experiences discussed by the employees in our sample, also provided a description of the backstage that employees could not access. Every interview was recorded and transcribed, resulting in more than 1,400 pages of interview data. We asked follow-up questions via phone or e-mail when clarifications or additional information was required. We interviewed key informants as many as three times to review our initial findings and explore certain themes with additional depth. Finally, we shared earlier drafts of the paper with informants from each group, who further refined and validated our findings.

Table 1: Interviews by Country and Role

Country	Employee	Founder	Investor
Denmark	18	24	4
United States	20	35	29
Total	38	59	33

Reflecting the investment focus of the investors we sampled, our interviews covered four high-tech industries: software, hardware, biotech, and manufacturing. Some interviewees had experience in more than one industry. For instance, an individual

could have experience as an employee, founder, and investor in two different industries. We did not find any systematic differences in the dynamics described in the paper across these industries. Experience in their role ranged from a couple of years for younger employees to several decades for experienced investors. Most of our interviewees, however, had at least five years of experience in each particular role.

3.3.2 Data Analysis

We followed an iterative, three-stage content analysis process. First, the transcribed interviews were analyzed on a sentence-by-sentence basis, following an open coding approach (Corbin and Strauss, 2014; Gioia et al., 2013), identifying key themes such as “joining a startup,” “initial team composition,” “learning from partners,” or “team after (firm) failure.” Practically every sentence in each interview received a code. To minimize coding bias, we coded the interviews as a team, where we randomly split the interviews between three coders and, once an interview had been coded by one member, the other two members reviewed and modified the code to resolve inconsistencies or differences in coding approaches across interviews. In the second stage, we organized these initial codes into a series of categories and sub-categories according to their properties, also identifying the connections between categories (Corbin and Strauss, 2014). The third step, selective coding, involved grouping categories and sub categories with similar properties and based on the frequency with which they were mentioned. We refined and regrouped these categories until we settled on a small number of overarching themes, including “employees (or investors, or founders) after failure,” “investor expectations,” “value of network,” or “definition of success.” After these three stages of coding, we wrote memos for each of the major themes, iterating back and forth between the themes, our underlying data, and existing theory. The research team revised these initial memos extensively, leading to the study’s key findings.

3.4 Findings

The findings are split into three sections. First, we discuss our subjects' expectations about startup employment. This includes both the expectations of individuals choosing to take a startup job, as well as the extent to which founders and investors understand (and encourage) those expectations. In general, we find that, consistent with extant research, individuals' expectations primarily relate to issues of professional growth, autonomy, and to a lesser extent compensation. Our data suggests that, to some degree, individuals recognize the potential tradeoffs between the benefits, costs, and risks associated with startup employment. However, we also find that startup employees' evaluation of the risks, costs, and benefits are often unrealistic, biased, and underestimate interrelations between them. We focus on this issue in the second part of our findings. Finally, in the third section, we consider why these unrealistic evaluations emerge and persist over time. Specifically, we discuss how misaligned interests between investors, founders, and employees, oversampling of positive outcomes in startup networks, and the difficulty of exiting startup employment encourage the establishment and perpetuation of myths about startup jobs.

Why Individuals Join Startups

Our findings about why individuals join startups are broadly consistent with prior research on startup employment. Specifically, our data suggest that startup employees hope to learn and grow professionally, experience autonomy and control over their work, and, to a lesser extent, benefit financially from their jobs. We also found that founders and investors – particularly those who had previously worked in startups themselves – recognized these expectations and used them to 'market' positions to potential employees:

I think the promise for employees is threefold: you're going to be exposed to a lot more things and have a lot more autonomy and independence to try to have an impact at a small company than you would at a small box in a large company. So

the job will be more fun because you'll have more autonomy and agency. I think there is a promise that you might be able to have a big impact and if we really do grow quickly, you'll have a much more important role even in a few years than if you were at a much larger company. I think the third one is, and, if we're right, you'll get wealthy. - JE: Investor³

Financial Rewards

Employees mentioned the potential financial windfall they would experience if the startup was successful. They generally realized that joining a startup meant accepting a lower base salary; however, if the startup was successful they expected to more than make up the difference by cashing in their stock options. This promise was a central negotiation point for founders and investors seeking to lower the cash impact of new talent:

Startups normally offer equity and they offer less cash. So if you meet someone who's optimizing simply based on salary, "Well I have this offer for \$120,000 and you're only offering me \$110, and I don't really value the equity." They're not really in the same mindset [which makes them unattractive hires]. - BR: Founder

Employees were also aware that the job would come with additional economic instability:

I was looking for flexibility for sure and I was looking for something that was...I guess it was out of my comfort zone, it just sounded really exciting. I believed in his idea from the get go and I was financially in a position where I could do that, because my husband could support our family financially. So I was in a position to take a career risk. - VP: Employee

It also became clear that, for most employees, short-term financial considerations were not the main reason they joined a startup. Instead, they tended to focus on the experience itself. For example, a critical source of meaning was the idea of creating something and watching it grow:

We all just like to see the company growing. It is fun. Of course you hope that some time you will be able to sell it and get money out of it but it is not something that drives us, not at all. - FE: Founder

Our data also made clear that investors and founders recognized and actively leveraged these non-pecuniary motivations to attract and retain employees:

He ended up joining the company and he is coding for us. He had to take a huge salary cut, from \$120k to \$80k. We do give him health insurance but it is nowhere near as good as what he had before. Do I think this was a good financial decision for him? Probably not. But I have to hire what is best for my company. Plus, there are all these non-pecuniary things that he cares about that he is getting now...he can go to (sports events related to business), he can work in his underwear from home, he has a computer that he loves. Huge financial cost, but he is not thinking of it that way. - KJ: Founder

Professional Growth

With respect to learning and professional development, employees expected two types of benefits. First, they believed startup employment would allow them to develop wide-ranging knowledge and skills. The expectation stemmed from employees' recognition that startups are small, resource-constrained, and faced with a constant stream of new challenges. Employees believed they would be responsible for navigating many of these challenges to a greater degree than they would in an established firm:

So I think with [startup] a lot of the ownership is on me to find the different marketing programs and make that call if we're going to move forward or not. And when I did need [the CEO's] input say, on a budget that I'm not comfortable moving forward with, it's literally a one-minute conversation – here's what it is, okay, yes or no. And the turnaround times are so quick for us. Just because I don't have to get five people's input on if we continue "X" or not. - WK: Employee

Employees believed these responsibilities would translate to unique learning opportunities:

There's certainly environments that are very resource-constrained that force you to learn and force you to engage in a very deep meaningful way. And that's the thing that I need to optimize, right? That's the real value in joining a startup. - EN: Employee

A particularly attractive feature seemed to be the experience of entrepreneurship without the full risks of actually starting a firm:

More often than not, what these people are looking for is an education. They want to work on something, they want to learn, they want to see, they want to have the startup experience without taking the startup risk...They want to be part of an entrepreneurial experience. - SI: Founder

Employees especially valued learning from the entrepreneurial experience through founders whom they admired:

It had nothing to do with my research and had nothing to do with my training to that point, but it was a very interesting technical area that I was interested in learning about. A lot of the founders were people that I really respected and enjoyed learning from and spending time with. - BB: Employee

Employees believed the skills and knowledge they developed would allow them to pursue new opportunities and advance their careers:

The first business I joined after graduating was a ...product management, development, regulatory, all that...So I came back to what I really liked, just managing the whole bunch of different activities within the company ...Managing all those different issues at the same time would make me a stronger manager, a better manager, a quicker manager. - JH: Employee

They also anticipated that the startup itself could be a source of career growth. Specifically, because successful startups – particularly those with VC investment – on average, grow faster than established firms (Davila et al., 2003), employees expected that firm growth would generate new managerial positions that early employees would fill. This would allow them to rise through the ranks at a faster pace than would be possible in an established firm. Such expectations were particularly common in our sample of VC-backed startups, where investors were actively pushing for aggressive growth targets.

Learning and professional growth were also seen as a hedge to, or a direct benefit of, startup risk, because employees often believed they would learn valuable lessons even (or especially) if their firm failed. Part of the attractiveness for employees was that they would get to observe and participate in the learning and growth without taking the personal and financial risks of founders or investors:

That's one of the good things that is big of not being financially involved in the same way as if you used your own money to start a company. Like I wasn't one of the founders, and I didn't spend my own money to start this company. So it was a really fun job and we could learn a lot (even) from its failure. - MC: Employee

In that sense, employees seem to be aware that startups are risky, but they normally frame startup risk only around firm failure:

They aren't people who shy away from the fact that the company may not be here a year or two from now, but they also believe that there's a risk-reward profile. So those risk-taking employees I think often believe therefore that working harder, faster, and putting the extra hours and time in could result in that risk-reward profile being what they were looking for. The other thing is those employees, I said they're not afraid to lose their job but at the same time, more often than not, they believe they can grow with the company. - DW: Investor

A fundamental underlying assumption is that, should a startup fail, other jobs will be available that will value the employee's experience:

The startup community is just like a big industry and so you can go from startup to startup to startup and always be pretty gainfully employed. And I think if you're a good quality person, you're not going to have a hard time finding a job. - MR: Employee

Autonomy

With respect to autonomy, employees in our sample expected to gain greater control over their work than they would have in a corporate setting. They expected “*freedom to try shit.*” Amplified by popular media images (e.g., Koloc, 2013), startup employees pictured themselves not only working in an informal environment, full of fun perks, but also autonomously deciding on work structures, processes, and timelines, consistent with the startup’s necessary fluidity and lack of formality:

I've been at big companies for way too long and I don't particularly like the structure, I don't particularly like the way that they, this whole part of control, trying to control employees. - JL: Employee

Founders and investors know that autonomy can be a critical factor to attract high-quality employees at a discount:

I can get a senior coder with 15-20 years of experience and if I offer them a pretty good role at a start-up where they get to have fun and they own the code base and they know the drill and they get to stay home in New Hampshire and don't have to commute to Boston, I could pay them \$95,000. - GM: Founder

Employees expected to derive satisfaction from their autonomy, not only because of the control it would give them over their own work, but also because they believed their choices would have much greater impact in the startup than they would in a larger, more established firm:

I decided, if I were going to be in the plane when it crashes into the mountain, I would rather be in the front of the plane. At least have a chance to either push or

pull or do something, rather than sitting in the back of the plane and just going into the mountains. - JF: Employee

Employees often contrasted this, explicitly or implicitly, to an imagined bureaucracy where they would be a tiny cog in the machine:

I've worked in medium companies, like this one. I've worked in smallish companies like 9 to 10 people or less. And I really like working in companies where people listen to what you're saying. And that you have a chance to make a difference. Because if you [have] fifty thousand people, you know, [you're] probably not gonna make a difference in the destiny of that company. - MC: Employee

Employees' Unfulfilled Expectations

With respect to the rewards they hoped to obtain, our data on why individuals choose to join startups is largely consistent with prior research. Our inductive approach, however, allows us to delve further. We also examined whether these same individuals' expectations about compensation, professional growth, and autonomy were generally met. Surprisingly, we found employees rarely believed they had obtained the benefits they had anticipated. Even more surprisingly, founders and investors consistently suggested that, given the nature of their startups, most of the expected benefits *could not* be obtained.

Financial Rewards

As discussed above, employees largely recognized the chances of obtaining a large financial windfall were slim due to startups' high failure rates; however our data also suggested that such benefits often did not materialize even for employees of extremely successful startups.

Investors and founders were well aware that employees were unlikely to experience significant financial returns; however, employees often did not realize this until they were well into their startup career. We identified three causes for the incongruity between expectations and reality.

First, employees did not consider or fully grasp the dilution effects of multiple rounds of financing. This was especially true in the common cases when initial (unrealistic) milestones were not met and startups had to raise additional financing under less favorable terms:

They literally slashed the pre-money valuation down 70%, and raised money on the most unfair terms possible to anyone in any market. So I took it and I moved forward, I didn't think twice because it was my only option. - AR: Employee

As a result of such dilution, even if the startup was eventually successful, by that point the employees' shares were worth relatively little.

Second, it became clear that employees simply did not know how to value options, so they systematically overestimated their worth – not a single employee in our sample had a specific value in mind – resulting in severe discrepancies between expected and actual value:

They don't understand how common stock is valued and how options are priced and you know, what percentage their options represent. We tell them that and I still don't think they have a good appreciation for it ...They're like, "Yeah, yeah options, okay." But they often don't value those the way they should. Which is too bad, because unlike at most large companies, there's a lot more flexibility to negotiate and kind of customize your deal. And very few do. So they don't fully understand how it all fits together and they don't make totally rational choices. - MR: Founder

Finally, even as employees indicated that they recognized the low odds of startup success in general, we also found that they were mostly bought into narratives about the potential of the startup they were joining. Indeed, they were *supposed* to be optimistic in their evaluations:

I really, really, really wanted to be a part of it. And I was willing to commit myself to, like, no salary if he would give me equity. And I asked for I think it was 1%, because I was like the 4th person there. So even though I was the "intern for the intern," I was like, "Hey, you're really not paying me and that's cool because I

believe in this, and I think it's actually going to take off. You give me 1% and I'll make it work.” - DS: Employee

This reality is so widespread that, across our interviews, investors used remarkably similar language to describe how, often, it was the employees of the most successful liquidity events who ended up the most disappointed, because “they are expecting to get retirement money, but instead they get nice car money.” As a result, although employees’ often did receive equity stakes, their expectations regarding the option value were typically not met, even in the unlikely cases when startups reached a liquidity event.

Professional Growth

As described earlier, expectations about learning and professional growth were, arguably, the most important motivators for joining startup employment, a motivation that was not lost on founders and investors:

I think because we were just such a small team he expected that if it had worked out that he would have become an equity hustler and an upper management position in our company at the very least. So I think that was really what was attractive to him.
-MM: Founder

Employees believed the learning and growth tradeoff would be between moving up the organizational ladder rapidly if the firm succeeded vs. learning invaluable lessons – that would allow them to move into higher level positions in other organizations – if the startup failed or survived without growth. Our data revealed, however, that expectations on both sides of this imagined tradeoff were misplaced. Opportunities to quickly move up the organizational ladder rarely materialized, partly because most startups do not experience rapid growth or create enough new positions. But even in successful, fast-growing companies, early employees failed to rise through the ranks. Investors rarely allowed early startup employees to fill new positions because these individuals lacked demonstrable managerial experience.

Because (startup employees) are all young they've really never managed people. So, when they start to build a team they don't understand how to motivate and manage people either. Which is why usually when a company really gets going, people that do managing for a living usually come in and run the company. Managing is normally seen as an "old person's job." - AM: Investor

Independent of any assessment of an employee's (potential) managerial talent, a key concern for investors was 'dressing up the company' for the next stages of growth and investment. Thus, while VC engagement certainly drove faster growth, it also led to a quicker formalization of the startup, including the professionalization of its structure and the recruitment of external professionals, often seasoned managers from established firms:

They did all of that work and they got nothing to show for it. Why? Because their early dreams didn't match up to the reality and eventually the investors put bullets in them and put people in for the next stage of work. - TK: Investor

On the learning side, even though employees expected the pace of startup life to prove ideal for rapid learning, interviewees mostly described a world in which it was practically impossible to actually learn. Severe resource constraints, the large number of uncertainties, and the constant possibility of failure meant that decisions were often improvised, reactive, or made by elimination, rather than through the evaluation or testing of different alternatives. As a result, it was often unclear what the causal links were or if better outcomes were possible:

Every day, most startups face forks in the road where you can go down the right route or the wrong route. The second you step down the wrong route, all of a sudden, the entire thing unravels. But it's impossible to know exactly why it is unraveling, as so many factors are at play. - EB: Founder

It is not just the number of moving parts that made actual learning practically impossible, it was also the amount of uncertainty surrounding each of those moving parts:

Randomness is the largest defining force for what will happen to you. That doesn't mean that you take your hands off the steering wheel. Imagine yourself just driving in a very bumpy kind of road and you're never quite sure whether the car is going to lurch to the right or to the left, and the random nature of the potholes that you're driving through define to a greater extent where you will go than your own steering, so you step on the accelerator and you see what happens. - BC: Founder

This was compounded by the length and ambiguity of the information cycles:

What's really challenging about entrepreneurship, if you take, let's say boxing...We really value someone who steps up to a fight, and gives it their best. But we don't value idiots. Like if you just kept yourself in the ring and you have no skills and you're swinging wildly and you're just getting knocked down every time and you should know – you just don't belong in there. The same way a soldier who wasn't prepared for war...the challenge is not immersion, because the cycles are so long. Starting (startup 1), took 8 years. Starting (startup 2), has already taken 2 years and will likely take many more. So whereas a boxer jumps in the ring again and again and again, you get a pretty quick feedback cycle and you know sort of who should be in the ring and who shouldn't be in the ring. With entrepreneurship, it's impossible to tell. - BR: Investor

As a result, to the extent that employees could articulate any learning, the lessons were typically abstract, obvious insights that often bordered on truisms:

I learned the hard way that there's a very long way between something being top of the world technology, in the technological sense, and then filling a need. And you have to start ... the easier way to do business is to start filling a need for a customer. Because nobody will buy anything if it doesn't fill a need for them. - MM: Employee

When the learning was more concrete, it was often overly specific to the startup which, the employees recognized, had limited transferability to other settings:

It doesn't mean that you can do it again – because everything around you needs to be right, the timing needs to be right, the people around you need to be right, the

customers, everything needs to be right to make it happen. So what you learn is basically impossible to replicate. - MP: Employee

As a result, employees found it difficult to communicate the value of their startup experience to subsequent employers and found it difficult to secure new jobs, especially in more established organizations:

When I left (startup), I thought I was going to be with the CFO of a large company somewhere, but it was very difficult at least at that point in time. So I ended up working here (another startup), and I said, "Okay, I'll come and join you, and I'll just be there for a couple of months, and then I will find something else" – but I just have not found that something else. - LG: Employee

Given their initial expectations, former startup employees were unprepared for the skepticism they encountered in the labor market. Entrepreneurs and investors, in contrast, were not surprised:

They've invested, sometimes several years, in a project that did not take off, so now they have fallen behind in those few years to some peers (in established firms) and they sort of don't catch up. Essentially that time invested in a startup is wasted...If we have to move to a more traditional firm, we have to change our expectations, we have to take sort of lower salaries and responsibilities than where we think we should be and then we have to try to catch up. - AH: Investor

Furthermore, employees (and founders) seemed to systematically underestimate certain risks and the speed with which uncertainties would be resolved. A commonly mentioned surprise, for example, was the frequency with which startups could not meet payroll but still expected employees to remain committed:

So I like that, but ultimately it's very hard for me to not make any money, because I got kids, I got a mortgage, and the pressure. It's the 25th of the month, and you don't have any money, and you're like, "Ahhh shit! What am I gonna do?" It really can be very difficult, very stressful. - JF: Employee

So it is morally devastating. (But) Yeah, actually it's financially devastating too. I mean it's not only just professionally that the pretty girl at the dance no longer wants me, it's that the pretty girl at the dance no longer wants me and they stole my car. Because you're not getting any money for it. You know, and that happens a lot.
- TK: Founder

These labor market challenges seemed especially salient for the generalist employees who were supposed to benefit the most. They seemed less acute for more technical employees, who were better able to articulate and provide evidence of their capabilities:

Marketing, kind of startup marketing, startup operations type of people, they have a much harder time. The skills are less discrete and less rare, so when you've been through startups you eventually build skills that are much less applicable to other companies – your startup experience does not transfer well, people cannot know how good you actually are, you know? – Whereas if you're a good engineer, you're a good engineer and you just need to be on a different problem. - MJ: Founder

At the same time, even with respect to technical employees, it is not clear that they actually benefited from being part of a startup. On the one hand, intense workloads and long hours might lead to a higher level of skill simply because the employee gains more practice over a shorter period of time than they would in a more established organization. They may also work on more novel problems. But on the other hand, the lack of structure, mentorship, and feedback in startups may cause technical employees to write inefficient code, fail to follow accepted protocols and standards, or pick up other bad habits. More broadly, technical employees seemed to find it easier to find subsequent jobs not because they had worked at a startup but because they did technical work (i.e., their value seemed to lie in their baseline skills, not in their startup experience). Ultimately, our data did not allow us to parse these possibilities, but they are important issues to examine in future work.

Autonomy

With respect to autonomy, employees generally felt their expectations about having control over substantive decisions were met, and that they had significant impact on their organizations:

In a very big company you cannot really influence things so that tomorrow there will be a different world than today. Here, we are twenty-five people. If I have an idea I can tell my boss and we can decide to start doing that in a week or in two weeks or today. You cannot do that in a big company, you won't have that influence, there's a million other things and people who have to be asked before you can change things and ...it's a waste of life. - IK: Employee

Yet, employees also experienced this control as a “double-edged sword,” as it meant there was a great deal of pressure with few sources of support or experienced advice:

I guess [my control over decisions] is a blessing and a curse...the curse is that it's all on me to decide what works and when it doesn't work, why didn't it work. - WK: Employee

Employees also quickly discovered that working in a startup meant sacrificing other types of control. First, while the smallness of the startup could provide fewer structural constraints, the flipside was much less structural *support*, so workers actually experienced intense workloads, often driven by the menial, administrative tasks they had to perform on top of their ‘actual’ work. This turned into a *de facto* constraint on individuals’ working hours. Second, the number of moving parts in the early stages of the startup and the amount of uncertainty surrounding each decision increased the stakes of every potential action and ultimately impaired employees’ ability to thoughtfully exercise autonomy and discretion:

The interesting part about being in this business is that it's always moving, it's always changing. And reality can be so wide, that it's kind of pointless talking about it, because there could be so many things going wrong, or maybe the company's not

going right, but it's not necessarily the company's fault. There are too many things moving too quickly to know. - AH: Investor

In consequence, the work rhythm and the sequence of decisions ended up being determined more by the fast-moving pace of the context than by the employees themselves:

It was really great at first and then you felt kind of all this freedom and energy and you just kind of did whatever you wanted. But I think pretty quickly I realized how hard it is to actually have that freedom because nobody's giving you a structure for your day...So that initial excitement and freedom, the down side of that came on pretty fast and furious and that was really hard to deal with. - JH: Employee

Third, investor expectations constrained employee autonomy in several ways: aggressive growth targets put constant pressure on the startup, which, combined with the small team and lack of structure, created a situation where it was always “all hands on deck” and employees were expected to exercise extraordinary effort. Investors, founders, and employees consistently emphasized that VCs expected nothing short of total commitment from employees:

*What it means to be in a VC-funded business is your entire life as you knew it is no longer...When I say “your entire life,” I truthfully mean “your entire life.” Your relationship with your family will change, you just won't see them. Your relationship with your spouse will change. Your relationship with your friends will be nonexistent. There will be a consistent gray area between what is work and what is personal because work is personal and personal is work at that point. Even if you're not in the office you're working. When you're in the office, you're living. People don't realize what that means. So I'll tell you! It means that I've had to be on the phone with girlfriends telling them “I promise you that after we get through the next three week sprint, they can go on a weekend trip with you. Please don't break up with him. He cannot afford to have that risk in his life right now. Just stick it out and I promise you.” It means a wife of one of my founders wrote a book called *The Start Up Widow*. - EB: Investor*

The Establishment and Maintenance of Startup Employment Myths

The fact that startup jobs rarely provided the financial rewards, professional growth, or autonomy anticipated by employees presents an empirical and theoretical puzzle. Specifically, why have these expectations become so strongly associated with startup jobs? Further, why have expectations persisted over time, given that few employees seem to obtain anticipated benefits? If founders and investors in our sample explicitly referred to these expectations as exaggerated or false, why do employees continue to believe in them?

Part of the answer seems to be that employees are often optimistic and somewhat naïve – sometimes admittedly so. This can result in a biased search and interpretation of information that can lead to an unrealistic or incomplete assessment of benefits and risks:

We were spending money like drunken sailors, like nobody's business. Huge run-up with the bubble. It completely failed for whole host of reasons, and I got laid off there, that was actually the first time I ever got laid off...Both of those opportunities were can't miss (because of the funders and partners). Intel, SAP, can't miss. My mom would worry. I was like, "Mom, it's Intel and SAP." I mean we were rated with IBM and Microsoft as a top three in e-commerce. And the next one, (elite VC fund)! Can't miss, can't miss! Turns out, everything is can miss. - JF: Employee

Beyond individual characteristics and interpretations, however, we found that there are several structural features of venture capital-backed entrepreneurship that systematically create and maintain certain myths about startup jobs.

Misaligned Incentives

Venture capitalists often claim to seek alignment of incentives between founders, employees, and themselves. There is much to be said about the joint enterprise of creating 'epic' investment value from nothing, to then distribute it fairly between stakeholders. Yet, while all parties share a common goal in the startup's success, the

structural characteristics of each role create inherent tensions and often contradictions that can systematically produce unfulfilled promises to employees.

The key tension is that although VC funding might lead to higher survival and growth rates on average, these outcomes depend on – often unrecognized – sacrifices on the part of employees. At an initial, fundamental level, investors and startup teams diverge on their ideal risk and growth profiles. VCs push for aggressive growth strategies and risky innovations at early stages of the startup, whereas startup founders and employees typically prefer to trade accelerated growth for a more iterative approach that explores different alternatives, creates more validated learning, and provides greater chances of firm survival:

The two different strategies are going for the home run vs. hitting singles. But I don't think for most startup teams the main goal is to hit a financial home run. I think that's a nice thing if it comes, I think the goal is to create something from zero...Investors, on the other hand, only care about home runs. - JF: Employee

The challenge faced by founding teams is that outside funding is critical to support even moderate growth, yet is scarce for startups that seek innovation at a more stable pace:

Venture capital really limits what you can do with your business. Ultimately, I'm actually pretty interested in setting up a stable business that pays everybody and maybe generates a reasonable amount of cash at the end of the day. You can work really hard at it, but the fact is that once you take that first dollar [from VCs], you basically owe the person that gave it to you \$10. That actually shuts down a lot of interesting business possibilities and, in my experience, that zone in the conceptual landscape doesn't get populated because there's no money for it. - KJ: Founder

The underlying structural limitation – which was repeatedly confirmed during our interviews – is a fundamental misalignment in risk diversification strategies: For founders and especially for employees, the first goal is firm survival. They are thus inclined to pursue multiple applications simultaneously and pivot their business plan

to diversify their risk and improve their odds. In contrast, investors are looking for above-market returns and diversify their risk *across* investments, so they often push individual startups to *de-diversify* and pursue higher-potential alternatives aggressively. A scientist at a biotech startup that, early on, was forced to concentrate only on one of several potential applications of its technology explained:

Investors keep pushing for increasingly aggressive milestones (and timelines) and ask you to zero in only on the avenues with the most potential, leaving other alternatives behind...From the perspective of a starting entrepreneur you look at the milestones and you ask, are they 10 to 20% achievable? If they're 10% achievable, let's go for it. Only if there's no way to achieve it, then I'm not going to agree to it...The tension is that as an entrepreneur you have a consortium of investors. It's no longer about your preferences. You're not in the driver's seat. - KB: Founder

Interviews highlighted how investors' diversification strategies drove this 'big bet' approach:

If you're the VC, it's just one of your hands on the table. You really don't care. As long as one of the ten pays, you really don't care about which one...And that's where I think it's just, I don't know if conflict of interest is the right word, but it's such a different point of view to have a portfolio strategy than it is to have the startup's strategy. As a startup, you're usually vested in that one thing and I don't think that VCs have that perspective at all. Or can't. - JF: Employee

In addition to exposing employees to much higher levels of risk, de-diversification likely minimizes the learning opportunities the startup may present. Specifically, academic and practitioner-oriented literature often argues that startups provide valuable learning opportunities because they are constantly experimenting and “pivoting,” which allows employees to see the results of different actions and strategies (Ries, 2011; Maurya, 2012; Gans et al., 2016). Yet, investors made it clear that such redirections – often aimed at minimizing risk – were contrary to their interests:

A surviving, somewhat successful startup isn't very interesting to [investors]. Why bother? We don't actually care to just get our money back. We care to have big wins. And so if there is a chance for a win, a big win if you keep going, we'll say keep going [with a given strategy, even if less risky approaches are available]. - BL: Investor

Startup teams are usually unaware of how the drive to de-diversify impacts their potential to learn, or the actual risks they bear. Investors have no incentive to explicitly acknowledge these effects, as doing so may negatively impact their ability to attract and retain talented employees. As a result, those involved – particularly current or potential employees – are often shielded from decision-making processes and kept largely in the dark:

Employees are like mushrooms, they're fed bullshit and kept in the dark. They don't necessarily get a chance to see from 20,000 feet...For the most part I think that the relationship between investors and companies is unhealthy at best. - BC: Investor

This was confirmed, in particular, by individuals who had experienced startups from multiple roles:

How aware are [employees] of the fact that they have a portfolio of one and that in joining this company they are becoming less diversified in their risk? You know, you start a company and at the beginning you might have five potential products or applications or ideas, and the VC will tell you, "No, focus on one and swing really hard." They want to diversify, they don't want the company to diversify because they want it to swing for the fences. But that will necessarily make the company less likely to survive. The VC does not necessarily care, because, one, it is a cleaner experiment if the company only goes after one idea, and two, the fund is diversified in its investments. Now is that the best idea for the entrepreneurs or the employees? Of course not, they just increased their risk and they probably are not even aware. Certainly not the employees, and certainly not the employees who join after the decision to focus on fewer ideas. So it is a really big misalignment, because once the company fails the VC will be fine, the entrepreneur will probably just launch

something else, but the employees might carry a stigma that they are not aware of when they join. - KJ: Investor

Even when employees become aware of the risks of de-diversification, the extraordinary commitment demanded by investors and the startup culture limit the extent to which they can pursue additional personal or professional interests that could expand their future options and enhance their career potential:

In a startup, you can't ask others to work on an equity basis for them to find out that you're dickin' around with something else, regardless of how cool that something else is. It really is a problem...People expect you to throw yourself into it single-mindedly. - KJ: Founder

Normalization of Unrealistic Goals and Startup Work

The ideas behind a startup are often unconventional, ambitious, and are typically based on one or several unusual and untested assumptions. This means that, naturally, a startup will attract individuals who subscribe to that interpretation of the world:

Conveniently, six of my other co-workers felt similarly, so a few left a few months in advance of me and another four of us left when I did, to all go start this startup. So it was six of us, we hired one person over the course of the next year, but that was the real traditional start-up experience. - JG: Employee

Like-minded viewpoints also extend beyond a particular startup to the employees' broader social network. In part, this is because employees, founders, and investors tend to see the establishment of personal networks within the startup ecosystem as instrumental to their goals: for investors to source deals, for founders to secure financing, and for employees to move into new startups or launch their own ventures:

The smart employees are defining success as, "My stated end goal is XYZ." Probably not financial, but smart ones know that they don't have a huge ability to

impact (the startup's) financial outcomes. Not like a founder or investor. And they should know that they probably won't stay long enough to vest a majority of their shares. So the smart ones are defining success as building a network of people who they can then leverage to go into their next network of people, who they can then leverage to go into their next network and then one day start their own thing. - EB: Investor

As they grow their personal network, employees are exposed mostly to others who are in equally ambitious pursuits, built on equally unconventional assumptions. Behind each unconventional idea, however, there is a validating analogy, comparable model, or success story:

There's hubris and naiveté, and sometimes you want that. If the company really has the potential to be truly great, it's really non-intuitive. There were a lot of people who didn't invest in Uber because they said there would be so many regulatory challenges, it just can't be done, you're running 100 mph into a brick wall. And Travis Kalanick said, "I don't care." Sometimes, it's darkest before the dawn...What it boils down to is, are there any little green shoots of growth anywhere that we can use as a basis for optimism? - CM: Investor

Put differently, high tech startups generate investment value through the creation of new realities. This requires convincing customers, suppliers, commercial partners, and investors of a story that can only become true if they all believe it (and even then might still fail). It is precisely because these new realities are unconventional and unlikely that they can translate to outsize returns. In this environment, optimism in the face of adverse information is not just accepted, it is seen as necessary.

They write a business plan at a time they have no idea how a company might grow. And there's no product yet. It's all just make believe and there's nothing wrong with that. ...they wind up building this imaginary story, almost out of a sense of ...obligation the entrepreneur keeps trying to push the dream forward and it becomes like a magic trip. You say watch my left hand while your right hand picks the pocket and the entrepreneur says "now we've made our sales number (but our

profit number sucked), but our sales number was really great (but our profit numbers sucked).” And what the entrepreneur is really saying is this isn’t a business ...But that’s not the conversation that occurs. - BC: Investor

What employees find in their networks, therefore, is reciprocal reinforcement of their firm’s unconventional approach as consistent with the ethos of high tech entrepreneurship. Within their networks, employees’ extraordinary commitment to a startup is the norm. Optimism and excitement about an unlikely idea is the expectation. Both because they seek them but also because their network constantly disseminates them, startup employees are disproportionately exposed (and receptive) to the rags-to-riches stories of unlikely or tremendous successes, or “unicorns:”

People are over-influenced by the publicity around the big stories. They talk about Facebook and what was the other one, started with an S, the big social network before Facebook. No one even remembers it anymore. MySpace! Nobody talks about MySpace anymore, but it influenced things pretty significantly. - JF: Employee

Since startup employees mostly interact with other startup employees, they rarely access information to calibrate their perspective or job experience. It is not that they are isolated. If anything, they belong to hyperactive, vibrating social networks that emphasize speed in the diffusion of in-formation. But the information that is collectively deemed valuable revolves around the (factors of) success of startups. Employees seldom observe alternative career paths and levels of fulfillment (especially relative to similar amounts of effort) in established organizations. As a result, they often become unable to make appropriate and realistic comparisons between their experience and a corporate job. This contributes to the acceptance of statistically unlikely success stories as appropriate goals, as well as the normalization of the realities of startup work. Indeed, our data suggest that (the relatively rare) employees with more diverse networks (e.g., containing corporate employees) are better able to build realistic comparisons. They are more grounded about the startup’s chances for success, the risk/reward profile they face, and what they are learning. They are also more likely to leave a startup before many of the

negative aspects of the work begin to manifest or irreversibly constrain their career paths:

When those employees [who did not “drink the Kool Aid”] start to quiet down, call in sick, take more vacations, things like that, that is your indication there. Before anything, that’s like the fastest indicator that things are not as good as you think they are. Because those guys are the ones living in the trenches and with more balanced information. - EB: Investor

The most committed employees, in contrast, stand to lose the most:

Then there’s the stupid employees, they’re like, cattle, right? They are excited to be at a startup, and it’s a cool technology or some product that they’re working on, and they’re just gonna be there through the rise and fall of this thing, because they haven’t really, strategically thought of their career except that “Oh! I have 3,000 options in XYZ company, and it’s gonna be the next huge thing!” And they don’t even conceptualize what that means. Okay, 3,000 options in a company that maybe IPOs at a price of, like, \$40, let’s call it GoPro, 40 bucks post 1st day IPO, so great, you just made \$120,000 and you’re the 4th employee at this company. And that’s when they did fantastic. Yeah, great, you had a very wonderful ride, and a cool technology. But they’re just not strategic enough to think through the next step and what would have been better for them. - EB: Investor

Not surprisingly, it is precisely this type of “stupidity” that founders and investors valued most in employees. They recognized that their ventures were unlikely to succeed, would face constant uncertainty, and would have to develop rapidly under resource constraints and on constantly shifting ground. Facing such circumstances, they placed a high value on recruiting employees committed not only to their specific venture but also to the startup lifestyle in general:

I want to hire people who are going to stick around for a while, are going to do a job and do a job really well and they’re going to want to advance at the company, they’re going to want to do new things, but not too fast. I honestly can’t afford to

hire a whole bunch of entrepreneurs, I mean real entrepreneurs, people like me who are agitated if they're not doing something new. I mean I wouldn't like too many of me around in a company. - TP: Employee

Limited Opportunities to Exit Startup Employment

Employees were expected to remain intensely committed to their ventures. But as discussed above, even if they chose to leave, (non-technical) employees often found it difficult to exit startup employment. In part, this was because their networks were mostly constrained to the startup environment. But our interviewees also described a discount to their entrepreneurial experience. Part of the challenge is that it is often impossible for employees to articulate what, if anything, they learned from their startup experience:

When we sold [startup] to Facebook, they took over the patent and the key guy, but not our other programmer nor our CEO. [Investor] worked hard to get the other programmer a job and he's doing well. I gave a reference for [Employee], but he struggled. It was extremely hard for him to explain what he had done and to find a job at the level that he felt he deserved and he needed. - RB: Founder

This is true even when a startup has succeeded:

There's an over-credit given to people who have had some success. If you are moving rapidly through different options, trying to identify glimmers of hope and then quickly reacting to them, you are steering the ship, for sure, but it's really hard to say, and harder to show, that you will be better at it next time, there is so much noise and luck in that. - JE: Investor

It thus becomes difficult for potential employers to evaluate how the startup experience prepared employees for work in more established organizations:

Some people go through a failed start up and do that for 5 or 10 years and that becomes their experience base and they don't really know anything about how to be a middle manager in a corporation so they end up doing more startups. I think after

a certain point it's pretty hard to go into an established company and maintain one's salary. Reverse is easier. - BB: Investor

Somewhat surprisingly, given how aware all stakeholders seemed to be of failure rates in young firms, the potential discount on an employee's experience seemed particularly acute when the startup had not succeeded, or was not well known:

If I look at a resume and I see names where I know the companies did terribly or I see names that I have not heard before and they lasted two years there, I just feel that the person is a bad picker. They have bad intuition about places to go or people to work with. At least from an investment standpoint I would rather bet on a person who is really good at choosing. It is like the person who has hung around Yahoo! for too long...At some point you have to say that they had a choice to leave and you have to wonder why they did not make that choice sooner...There are some people who are good at getting lucky and there are other people who seem to make a career of making bad choices. - AM: Investor

Note that such narratives were voiced by the same investors or founders who, earlier in the *same* interview, had discussed the randomness of entrepreneurial success and failure with remarkable sophistication. They are also the same individuals who said they expect and demand unflinching commitment to a venture. The change in tone occurred when prompted to shift from a broad discussion of the definition of success or failure in entrepreneurship to specific thoughts on finding and recruiting talent. It is also worth noting that, to the extent that some recognized these inconsistencies, investors and founders acknowledged that they benefit from perpetuating the narrative that failure in entrepreneurship does not carry a stigma to continuously attract talent. They also acknowledged that, even though it is not entirely consistent, selecting based on past performance *feels* more rational than ignoring that information, particularly given that others are likely to do the same.

And it's not necessarily logical, but I've seen that almost kind of a herd mentality, I'm gonna follow, I'm going to invest in the people that have been successful before without evaluating their talents, necessarily. I'm gonna look at what they've done

and I'm gonna back the successful horse. Gonna back the winning horses.- BW: Investor

It is troubling that an employee's startup experience is discounted by future employers, particularly given that 50% of new firms fail within the first five years (thus forcing all employees to search for jobs) (Santarelli and Vivarelli, 2007). The result is that employees seem to have a hard time moving from a startup to a more established firm. To complicate matters, our data suggest that it may also become increasingly difficult for employees to find positions in startups as they age:

Ageism has become such a prevalent factor in the startup world. You know, my brother in law is turning 48, he's gonna be 50. And my wife can't understand why he's ready to make massive changes to his life. He's been a startup guy forever. It's like, well, he has to. Nobody wants him anymore. And so all of the skills he's learned for the last 30 years of his career, are gone...And you know what? I play into it. I don't think I could see myself understanding why a startup would want a 55-year old VP of Engineering. It's hard to imagine a 20-something founder hiring a 55-year old engineer...The startup career is a very short career, both on burnout and also on actual, just, how quick, how long you are a hot commodity inside that world...By 40, forget it. Think about it, a person who graduated in like 1995 from college is no longer employable in a startup. And there is that negative perception of like, "How come you're not wealthy enough to go be an investor? Maybe you're not good." - EB: Investor

These factors amplify employees' access and tendency to repeat mythical narratives about startup employment by limiting the extent to which they can openly discuss their true experiences and opinions of startup jobs. In fact, this is true for all parties involved. Founders and investors have an incentive to perpetuate false or misleading narratives because startups depend, at least in part, on their ability to attract cheap, talented employees willing to bear intense workloads. Once employees have joined a startup, they are also compelled to perpetuate the narratives, as their career prospects depend on the success of the startup or on their ability to convince potential

employers that they have, in fact, learned a great deal through their experience and are willing and able to do it again. This requires employees to express full commitment to narratives put forth by the organization and about startup life more generally:

You can't have a Plan B in [a startup]. You can only have a Plan A and you have to put all-in, all the time. - MP: Employee

It's hard to know with your friends who are in startups because you have to be in this constant sales mode. Even when I'm speaking with my best friends about their ventures it's impossible to know the full truth of health of the venture because even your closest friends will be, they must be in sales mode. They cannot speak to you truthfully about it, the picture is always rosy. It has to be.- KJ: Founder

3.5 Discussion

Most research on the startup experience has focused on founders and investors. Our study elucidates an important additional piece: the experience of startup employees. Prior research has provided conflicting evidence about the quality of startup jobs, (Stenard and Sauermann, 2016; Sauermann, 2017; Campbell, 2013), but more recent work increasingly suggests that, even after carefully controlling for individual quality and self-selection, working for a startup carries negative and long-lasting consequences for employees relative to joining a more established firm (Burton et al., 2018; Sorenson et al., 2018). Yet, high potential employees increasingly join startups, and they maintain a consistent set of positive expectations (e.g. Roach and Sauermann, 2015). These include personal fulfillment, the accumulation of valuable human capital, and financial gains. Our research suggests that, for a number of structural reasons, these expectations may be misplaced.

The Structural Shortcomings of Startup Employment

The key reason that startup employee expectations cannot be met is a fundamental misalignment in incentives and risk profiles between investors, founders, and

employees, which is reflected in and amplified by the structural configuration of the startup environment. Indeed, prior work has shown that investors push for more aggressive growth strategies (Goldfarb et al., 2007) and riskier innovations at early stages of the startup (Park and Tzabbar, 2016) than founders (and employees) would prefer (Arora and Nandkumar, 2011; Park and Tzabbar, 2016). Investors' preference to professionalize startups in preparation for subsequent rounds of financing has also been documented (Hellmann and Puri, 2002) as a strategy to achieve market legitimation (Davila et al., 2003) and aggressive growth targets (Hellmann, 2000). However, prior research has not focused on the effects of these tendencies on startup employees. We find that these factors not only make it virtually impossible for startups to meet the expectations of the employees they recruit, but also end up relatively concentrating the downside risks of entrepreneurship on those individuals. This is not because investors or founders bear no risk, but because the structural configuration of the startup environment is such that their risks are diversified or mitigated, while those of employees are not.

VCs are structurally protected against entrepreneurial risk by staged investments, diversified portfolios, and selective deal flow (Gompers and Lerner, 2004; Park and Tzabbar, 2016; Nanda et al., 2017). Founders, in turn, can forge strong relationships to VCs, which mitigate the costs of startup failure and allow for a rapid comeback, usually through a new venture (Bengtsson, 2013; Bengtsson and Hsu, 2010; Gompers et al., 2010; Hochberg et al., 2010; Wal et al., 2016). Employees, in contrast, have limited access to investor networks and have difficulty pursuing subsequent work opportunities, especially beyond the startup ecosystem. As a result, employees find few of the expected benefits in cases of startup success and can fare much worse in cases of startup failure.

Expectations and Startup Employment

There are structural factors that limit the extent to which employee expectations can be met, which raises questions about why individuals continue to hold such consistent and positive outlooks, with-out incorporating information about likely

potential downsides. Our findings suggest that the same structural features that constrain the employee experience partly generate and sustain unrealistic narratives about startup employment. In particular, generalized positive expectations are required to attract high-quality workers to startups, so investors and founders have little incentive to challenge existing narratives. This is true even in cases when they know a narrative to be misleading, which made many of our interviewees uncomfortable. But we also find that employees play an active role in the perpetuation of inaccurate generalized expectations, both purposefully and accidentally, through four series of related and interlinked mechanisms. These insights build on prior theory about the social construction of valuations and unpopular norms.

High-tech startups generate value by creating new realities. It is only by convincing investors, employees, customers, and other critical stakeholders of the plausibility and attractiveness of a yet nonexistent (and statistically unlikely) reality that startup teams can bring that reality to life (e.g. Kidder, 2011). This has several implications. First, the startup ecosystem is *supposed* to be optimistic. It was very common for our interviewees to express that, without being “at least a little bit crazy” a startup team does not have a chance to succeed. The downside is that when optimism is normative, it can severely constrain learning from personal experiences or from available data, even when there are clear incentives to learn (Armor et al., 2008; Massey et al., 2011). Second, and related, even when actors become less optimistic about a venture’s prospects, they are constrained from publicly expressing skepticism in any of its underlying assumptions, lest that get in the way of an already unlikely success. As a result, even though employees actively seek and share information through their professional networks (Neff, 2012; Ruef et al., 2003), they ‘over-sample’ positive narratives, both because they are statistically more available to them and because they are motivated to seek them for personal reassurance. This creates an environment where, mechanically and merely through sampling mechanisms, biased narratives are more likely to persist (Denrell and LeMens, 2017; Denrell and Le Mens, 2011; Le Mens and Denrell, 2011).

In addition, even after employees have exited a startup (voluntarily or due to firm failure), they are unlikely to challenge prevailing narratives. In our setting, precisely because the expected growth, learning, and experience from startup employment was at best difficult for employees to articulate and often completely absent, it was costly or difficult for them to exit the entrepreneurial labor market (Sorenson et al., 2018). The relative scarcity of exit options means that employees must frame their value in terms consistent with the entrepreneurial ethos, which entails demonstrating enthusiasm for and conviction in the value proposition of startup jobs. Indeed, from the recognition that startups are unlikely to succeed and will face significant uncertainty, founders and investors have learned to seek committed and enthusiastic employees. This results in an environment where, irrespective of their personal beliefs, investors, founders, and employees end up following similar scripts to match what they know is expected and valued by others.

These mechanisms share some similarities to those proposed in the literature on the perpetuation of unpopular norms or regimes. In general terms, while an actor may privately disagree with a generalized norm – and may even suspect that many others also disagree – she can only observe public behavior, which makes it impossible to assess how many others *actually* disagree with the status quo and how many of those would actually be willing to publicly express their disagreement. Such *pluralistic ignorance* (Allport, 1937) can lead actors to follow and even actively endorse norms they disagree with out of fear that they will be the lone voice of dissent and face reprisals or exclusion (Heckathorn, 1988; Kuran, 1995; Centola et al., 2005). This is especially true in situations where knowledge of widespread dissent is not enough to invalidate a norm (c.f. Prentice and Miller, 1993) but overcoming an unpopular arrangement actually requires risky collective action (Kuran, 1995; Canales, 2016). While this need for collective action was clearly absent in our setting, individuals may still actively endorse a norm they disagree with if they have reason to fear that their actions will be interpreted as an active offense or a lack of commitment to a group, leading to unintended transgressions or social sanctions (Heckathorn, 1988; Centola et al., 2005). Swidler (1995) provides an early example of this dynamic in

her discussion of Christmas gift-giving, which individuals dislike but continue to engage in to avoid offending others.

In our setting, however, we found that actors were driven less by the fear of sanctions than by their pursuit of market value. Indeed, recent theories of social valuation and the dynamics of market bubbles highlight that social valuations and objective conditions frequently diverge. Such a divergence can persist even if individuals understand objective conditions, as long as sufficient rewards exist for adhering to the socially constructed valuation. A classic example is Keynes (1960, 1960) comparison of the stock market to a newspaper beauty contest, where the winner is determined not based on her ability to objectively evaluate beauty, but to accurately predict how others will evaluate it. Actors may thus have an incentive to act as if socially prevalent views are accurate, even if they privately disagree with them (Zuckerman, 2012; Turco and Zuckerman, 2014).

The dynamics described in our paper add a mechanism to and consequence of such processes, as startup employees are not the beneficiaries or creators of this social dynamic, but its involuntary performers. Another contrast is that, in our setting, there is little incentive for actors to correct the myths, as there is no outstanding benefit to doing so. Given the inherent risks and uncertainty of high-tech startups, the pursuit of ‘home-runs’ has proven to be a dominant strategy (e.g. Baron and Hannan, 2002; Baron et al., 1996).

Constraints to Learning in Startups

A final, unexpected finding from our study is that the structural features of startup employment constrain the speed and quality of learning available to employees. This challenges what is perhaps the most widely cited benefit of startup jobs: the opportunity to learn more and faster than in comparable corporate settings (e.g. Campbell, 2013). Instead, we find that uncertainty and ambiguity – which are often believed to accelerate learning in startups – actually hinder individuals’ ability to learn. Specifically, uncertainty and ambiguity force startups to respond to unexpected challenges and opportunities as they arise (Baker, 1995; Baker et al.,

2003; Miner et al., 2001), creating the need for improvisation, or the “deliberate and substantive fusion of the design and execution of a novel production” (Miner et al., 2001, p.314). Learning from improvisation is possible, but it tends to be short-term and context-specific. This is especially true compared to more deliberate, experimental learning, which is more common in established organizations (Miner et al., 2001).

In the case of startups, even short-term learning is rare. This is in part because there are so many variables moving at the same time that most outcomes are overdetermined. Most important, once improvisation solves the problem at hand, there is rarely the post-hoc reflection about (theoretical) counterfactuals, or the linkages between actions and outcomes that would distill learning. This opportunity for reflection is further limited by the need to quickly converge on a single narrative of the startup’s development and subsequent focus. The construction of convincing, consistent, and simple narratives about the organization’s development is a key way for startups to seek legitimacy and overcome the liabilities of newness and smallness (Freeman et al., 1983; Lounsbury and Glynn, 2001; Stinchcombe, 1965). These strong narratives not only limit the consideration of the broader distribution of potential outcomes, but also reinforce employees’ beliefs that they are learning from their experience by providing a deceptively coherent, but mostly inaccurate, account of the organization’s development and performance.

“Learning” in startups, therefore, is typically based on at best incomplete and more frequently absent counterfactuals, which often generates false beliefs about means-ends connections. This is further reinforced by the mechanics described above, where startup teams are personally motivated and structurally constrained to ‘oversample’ on positive outcomes. This combination of factors creates a perfect environment for biased and superstitious learning (March et al., 1991; Denrell and LeMens, 2017; Denrell and Le Mens, 2011; Puranam and Swamy, 2016).

3.6 Implications and Conclusion

Our findings highlight several structural shortcomings of startup employment that could systematically undermine the value and outcomes of working for a young firm. Given the importance and increasing prevalence of startup jobs, these findings have several practical and academic implications.

Implications for Practitioners

Our data suggest that employees join startups with a remarkably consistent set of expected personal and professional benefits that rarely, if ever, materialize. This starts, naturally, with the limited – and often biased – information they use to seek and choose jobs.

Although there is relatively complete information on salary, lifestyle, and the career trajectory employees can expect when joining established companies, there is no comparable information to evaluate a startup job. The little information available suffers from extreme selection (and availability) bias, as it tends to come from only the most successful and public of startups, reinforced by a public narrative that lionizes ‘unicorns.’ Partly because of this, employees seem to consistently underinvest in the negotiation of their work arrangements and compensation – including their potential professional development opportunities and career progression – before joining a startup. They certainly don’t invest enough time and effort to understand, negotiate, and value their equity packages. This is unfortunate, as startups have more flexibility in the arrangements they can reach with their employees (e.g., Turco, 2016). Employees could also seek, promote, and join broader information networks to avoid the insularity and bias of the self-contained startup community (Neff, 2012). This would allow employees to access a wider set of opportunities and, most important, to have more complete information. In that sense, it would benefit startup employees to also invest in sharing and seeking information about the salaries, stock packages, developmental paths, and especially

of *actual outcomes* of other startup employees, so they can collectively form more realistic expectations.

To the extent that founders are aware of the relative vulnerability of startup employees, they have the ability (and, arguably, responsibility) to keep employees informed of the risk profile of the startup, to help them understand the actual value of their stock options, and to build opportunities for *actual learning* (more on this below). It is clear from our interviews that startup employees are willing to take significant risks in exchange for particular professional opportunities, such as the personal meaning they derive from having a more direct impact, so this transparency would likely only generate a stronger commitment from them (Grant, 2008; Turco, 2016).

More broadly, founders are often overly optimistic about their ventures (Cassar, 2010), so they are not necessarily *hiding* information from employees. Rather, their own evaluation of the situation is often biased. Founders also often seem to underestimate the wider, longer-term implications of VC involvement in their ventures. This is true both with respect to the risk profile they sign up for when they accept VC investment (i.e., de-diversification, steeper growth curve, rapid professionalization, equity dilution, etc.) and the effects that VC involvement can have on their founding teams and employees (i.e., incorporation of professional managers, bureaucratization of the firm, high reporting burden). Given their often sincere concern for employees, increased awareness could help founders negotiate better financing terms on items that they might not otherwise consider important (i.e., development and retention guidelines, reporting mechanisms, employee voice, etc.). Yet, founders invest most of their energy negotiating on valuations, which have enormous uncertainty surrounding them, rather than establishing alignment on how to better develop the firm and distribute value should the firm succeed and grow (e.g., Goldman and Nalebuff, 2013). For some founders, increased awareness may signal the need to seek alternative, less intrusive sources of funding – even if accompanied by a more conservative growth profile.

The implications for investors are less clear. The structural features we describe in the paper are a fundamental part and consequence of the VC business model. This is especially true for the risk and diversification profiles, the information asymmetries, and the compensation structures. In our data, for example, employees exercised extraordinary effort expecting a set of benefits in return that, for the most part, investors seemed to know were not realistic. There remain issues, such as the excessive weight that is put on both success and failure of previous startups for employee hires and the relatively short duration of startup careers, where investors could do much to challenge their biases, which they all seem to know are not grounded in truth. Investors could also do much more to change the structural conditions that impede effective learning in startups. While this is another issue where employees are the most affected, as VCs are better able to learn across their different investments, all stakeholders would benefit from better learning within the organization. To achieve actual, effective learning, startups would need to establish specific capabilities – and bandwidth – for employees to learn from their improvised actions. This requires time, skill, and resources to construct appropriate counterfactuals and draw accurate cause-effect inferences (March et al., 1991; Miner et al., 2001).

Implications for Policy

Entrepreneurship's role in shaping economic outcomes has been well documented across academic disciplines (e.g., Baumol, 1990; Hart, 2003). In particular, we have clear evidence that entrepreneurial activity contributes to broader innovation and economic growth (Samila and Sorenson, 2011), employment (Birch, 1987; Davis et al., 1996; Neumark et al., 2011), and aggregate learning (Acs et al., 2009). Recent research, however, has also shown that entrepreneurial activity can correlate with negative social outcomes (Cobb and Stevens, 2016; Sørensen, 2007; Dahl et al., 2010; Sorenson et al., 2018). More specifically, to the extent that we believe that job creation and learning are two of the most important benefits associated with entrepreneurship, our study would suggest the need for a more balanced consideration of the consequences of startup employment.

Policies often promote risk-taking by startup founders and especially investors (e.g., the U.S. taxes investment gains at lower rates than other income sources, limits founder liabilities if startups fail, and gives founders tax breaks and other incentives to encourage firm creation). Yet, there are no policies to mitigate risks for employees. Rather, and perhaps as a result of other policies, there seems to be a systematic transfer of the risks of entrepreneurship from investors and founders to startup employees. Several policies could help. First, startup workers could be better shielded from the downsides of startup failure through better unemployment, health, and retirement insurance schemes. Second, startup employees do not have accurate information to make employment decisions. We hail successful entrepreneurs as heroes, but we have limited information on the risk profiles of the jobs they create. We thus need better data on startup employee career paths and out-comes to allow for better, more informed job choices. Third, significant public funds are expended to promote and support startups via tax incentives, university programs, and other means, yet the benefits are mostly concentrated in a small set of stakeholders. For some of these stakeholders, the benefits only accrue with startup success. When a startup fails, however, all its assets (people, technology, relationships, learning) tend to dissipate. We need better mechanisms to identify and allocate assets (including startup employees) when startups fail.

Implications for Research

Our study highlights the fact that we still need more research on startup employment to understand its effects on career trajectories, health, and personal fulfillment. This covers a wide range of questions, but an issue common across topics is the need to separate selection effects from treatment effects. This means collecting and analyzing longitudinal data on career progression, economic returns, life outcomes, and health effects of employment in different types of firms. There is also need for more qualitative data on young firms to better understand what it is *truly* like to work in a startup. The realities of startup employment described in our study stand in stark contrast to common depictions. Additional research is also needed to better understand the incentive misalignments we described. In particular, we need a better

understanding of the distribution of risks and rewards across different stakeholders in a startup. This is especially true with respect to the concentration of returns vs. the concentration of *relative* risks.

3.7 Limitations

This study makes several contributions to our understanding of startup employment, but it has several limitations. First, we only considered the experience of employees at VC-backed firms. On the one hand, we believe such firms represent a critical case, as there was no *a priori* reason to expect that employment outcomes would be systematically better in non-VC-backed firms. We know, for example, that larger, better funded, and faster-growing firms attract better talent, pay people better, and have a much higher likelihood of survival and success. We also know that small firms systematically provide worse jobs than larger, more established firms. The theorized benefits of startup employment are thought to accrue through the firm's dynamism and *despite* its size. Thus, for most employee outcomes (career growth, employment prospects, personal wealth) we would expect our findings to be amplified in startups without VC investment. On the other hand, it is less clear how personal satisfaction, health, and learning outcomes may vary. For example, our findings suggest that VC involvement may exacerbate de-diversification and constrain learning. Compensation and equity outcomes could also be quite different. Firms without VC investment are less likely to grant employees an equity share. But they are also likely to pay lower salaries and thereby attract less talented individuals who would earn less in any firm. It thus remains unclear what a comparison of the outcomes of established firms, VC-backed startups, and independent startups would reveal, holding employee ability constant. The (limited) existing research suggests that VC-backed firms are indeed the best case scenario for employees (Sorenson et al., 2018), but more research is needed. Although our methods are well-suited for the type of exploration pursued by this paper, some of the questions that remain will require different types of data and methods, including longitudinal analyses of career outcomes for comparable employees across different types of firms and industries.

We end with the clarification that we do not intend to suggest that startup employment is necessarily a terrible experience only pursued by uninformed, naïve, or masochistic individuals. Much like free divers, freestyle skiers, and free rock climbers, our interviewees often described a unique or even addictive level of meaning, exhilaration, and *flow* from their startup work. Yet, there are two fundamental (and mutually amplifying) differences. Participants in extreme sports are not promised and do not expect unrealistic benefits beyond the experience itself. They are also conscious of the risks. In contrast to startup employees, they are keenly aware that they are diving without a tank or climbing without a rope.

Notes

¹Once individuals join a startup, they seem to be significantly more likely to remain in the startup labor market, see (Sorenson et al., 2018).

²Relying on retrospective interviews can create the possibility of bias. In this case, to the extent that such bias exists, we believe it would operate against our findings. Specifically, bias would likely have led VCs to point us towards their most impressive failed firms, which would have been less likely to have negatively impacted their members.

³Initials in quotes refer to the identifying codes we used for each individual in our sample. The words “founder”, “investor”, and “employee” refer to the individual’s role perspective for the quote.

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Chapter 4. Till death do us part? New venture dissolution and enduring work relationships⁴

Abstract

Using the Danish Integrated Database for Labor Market Research (IDA), we explore the persistence of cofounders and early employees to continue their work relationships after the dissolution of the new venture. We investigate where these team-members continue their career and whether they pursue entrepreneurship together in another new venture. Overall, over 14% move jointly, and co-mobility is more prevalent among NVT members who worked jointly prior to founding the new venture and among those NVTs demonstrating high levels of homogeneity. Moreover, co-movers tend toward small firms and the private sector, and co-mobility occurs largely in similar industry. A large co-move to new ventures, which is indicative of serial new venture teams. This also raises further question on team-level dimension of learning from failure.

⁴ This paper, co-authored with Bram Timmermans, is going to be submitted to a journal. The early versions of this paper were presented in DRUID society conference, 2015 and Academy of Management conference, 2015

4.1 Introduction

Each year, many entrepreneurs are confronted with the often-bitter reality of having to close down the business they only recently established. Given that new ventures face challenges associated with liabilities of newness (Bruderl, & Schussler, 1990; Stinchcombe, 1965), smallness, and adolescence (Bruderl, & Schussler, 1990), the universal rule is that only a minority of these new ventures survive. This makes new venture dissolution one of the most prominent events in any countries' organizational landscape (Drucker, 1985; Knott & Posen, 2005; Shane, 2008). While there is a strong research tradition in understanding determinants of entry, survival, and growth (Santarelli & Vivarelli, 2007), the interest in understanding new venture dissolution, and its implications, has been more recent.

In investigating the implications of the closure of the new venture, particular its close association with failure, existing research has mainly focused on understanding the financial, psychological, and social consequences for the entrepreneur, as well as processes of learning and sense-making (see Ucabasaran et al. (2013) for a review). More recently, Jenkins & McKelvie (2017) noted that this research treats such events with a sense of finality and expressed the need to understand what happens to entrepreneurs and their resources in the aftermath of a dissolution. In doing so, they demonstrated that the vast majority of entrepreneurs remain active on the labor market following the closure of the new venture, either as wage earners or as entrepreneurs. For those who re-enter, the dissolution might thus be merely a stepping-stone towards an ongoing entrepreneurial career (Sarasvathy et al., 2013).

While these studies have investigated implications for individuals, consequences for teams have received far less attention. However, a significant share of new ventures are founded and run by teams. Furthermore, team-based entrepreneurship is often associated with superior performance (see Klotz et al. (2014) for a review). This type of entrepreneurship is also common among the growth oriented and is more knowledge intensive and, therefore, might be argued as being potentially more

valuable. As new venture dissolution is also common for this form of entrepreneurship, despite its association with superior performance, it might be valuable to understand team-based implications, particularly how some of the (perceived) value can be retained.

In this paper, we investigate the mobility of NVT members following the dissolution in more detail. Focus on the NVT not only takes the perspective on what happens to the team following the dissolution, but also allows us to capture the transfer of one of the most intangible assets of former venture: the shared experience and team-based human capital of NVT members. In case a new venture closes, shared human capital might evaporate whenever NVT members go their separate ways. However, NVT members might be in a position to continue working as colleagues, either to capitalize on their shared human capital, or because their shared experience and awareness of each other's knowledge, skills and competences allows for effective collaboration and communication. This might be for another employer, but some come together to start anew, as a serial new venture team. Irrespective of the firm, the persistence of these ties could be interpreted as a sign that value is obtained in other organizational settings (Hoetker & Agarwal, 2007).

To investigate the extent to which NVT members stay together and what the determinants of these co-moves are, we rely on detailed information from the Danish register (IDA). This database allows us to identify all newly registered firms' new ventures with two or more individuals. These might be early employees and/or co-founders and are referred to as new venture teams (NVTs). We follow these new ventures and NVTs and select those that closed after up to five years after founding. Upon identifying the dissolved new ventures, we identify the career trajectory of the NVT members following the dissolution and identify where they move to, that they remain together in the new career, and the extent to which they re-enter into entrepreneurship. Because we are interested to understand the determinants of co-mobility we focus on the relationship that exist between NVT members, and more specifically on the relationship between individual pairs or dyads.

In examining the career trajectory of those NVT members who remain active on the labor market, we identify that 18.3% re-appear in organizations with former NVT members in the year following the dissolved new venture. Co-mobility is more prevalent among NVTs with prior joint work experience, which indicates that there are workers who follow each other in their careers. Moreover, individuals in a technical occupation are more likely to co-move. Finally, we find that NVT co-movers are more likely to join small firms and re-enter into entrepreneurship by actively taking part in newly established ventures, preferably in the same industry.

These findings are particularly relevant for policy makers and entrepreneurship researchers. For policy makers, the findings demonstrate the dynamic nature of entrepreneurial process and that the closure of the new venture might be part of a continuous process of value creation. Consequently, following up on these entrepreneurs, including NVTs, might inform the development of more effective entrepreneurship policy. For entrepreneurship researchers the findings call for a deeper understanding on the consequences of NVT mobility. Furthermore, the relatively high incidence of re-entry into entrepreneurship opens up a new avenue to understanding processes involving learning by failure, as this learning might not be limited to the individual level.

The structure of this paper is as follows. In the next section, we discuss the overall theoretical framework and hypotheses. Subsequently, we describe the data, sample, and models, and then the results. The last section provides an overall discussion of our results and recommendations for future research.

4.2 Theoretical framework

New Venture Dissolution and the Diffusion of Knowledge

There is a long history in using survival rates as a measure of entrepreneurial success. While a large share of closure are associated with bankruptcies or otherwise poor (economic) performance, there is a recent body of literature investigating entrepreneurial exit that argues such dissolution cannot unequivocally

be regarded as failure. (Balcaen et al., 2012; Bates, 2005; Cope, 2011; Coad, 2014; Head, 2003; Jenkins & McKelvie, 2016; Ucbasaran et al., 2013; Wennberg et al., 2010; Wennberg & DeTienne, 2014). Even when the new venture is forced to close down for the above-mentioned reasons, this does not necessarily mean that all aspects of the new venture failed, at least not for the entire period (Coad, 2014). A case in point is an entrepreneur who stated the following under interview⁵: “[My company] in its own way was very successful. Financially it was certainly not. But it was a well-regarded product and helped a lot of people, well-regarded technology before its time. So across the board, very positive for me.”

Thus, instead of marking this event as the closure of a business, the forfeit of an entrepreneurial opportunity, or even the end of a career, we might consider it as part of a dynamic process where the opportunity, through employee mobility, is explored in another organizational setting (Jenkins & McKelvie, 2017). There is a well-established body of literature that demonstrates how employee mobility leads to the transfer of knowledge and capabilities, both within and between firms (Almeida & Kogut, 1998; Song et al., 2003; Campbell et al., 2012). The mobility following the closure of the new venture might then be another form of employee mobility in which valuable assets are diffused to other organizations, thereby capturing value from these assets despite the closure of the new business.

Hoetker & Agarwal (2007) have empirically demonstrated that such transfers take place. Following the career trajectory of former employees from closed (innovative) businesses, they identified that these employees were the driving force behind a persistent citing pattern to patents developed in the “failed” businesses. Thus, employee mobility knowledge and capabilities helped in retaining knowledge and capabilities, which offered value in other organizational settings. Subsequently, the knowledge and capabilities have outlasted the existence of the businesses from where they originated. Thus, as stated by Ingram (2002): “*The experience of a failed*

⁵ From interviews with founders, employees, and investors in the US and DK from the period of 2014 to 2016.

organization might be particularly likely to diffuse through employee mobility as participant in the failure go to new jobs” (p.657).

Although such mobility can serve as a conduit for knowledge transfer, there are limits to this knowledge transfer as the closure of the business renders some elements of the knowledge inaccessible (Hoetker & Agarwal, 2007). For example, the knowledge residing in organizational structures can no longer be accessed as the organization has disappeared.

Capturing Value through Co-mobility

In the context of a NVT, inaccessibility might be caused when knowledge capabilities and complementary assets that arise from teamwork disappear when the team dissolves. From the moment team members start to collaborate, they build a shared history, and develop shared experiences and routines (Pisano, 1994). Through these shared experiences, team members obtain critical information on the knowledge, skills, and personal characteristics of their fellow teammates (Katz, 1982; Gruenfeld et al., 1996; Zheng et al., 2016). This knowledge allows teams to plan more sensibly, assign tasks to those who are best at performing them, and coordinate more effectively as team members can anticipate each other’s behavior (Moreland & Myaskovsky, 2000). In addition, it also allows for the establishment of mutual trust among team members (McEvily et al. 2003). Furthermore, through the development of a shared experience, teams engage in joined knowledge accumulation, which causes them to develop team-specific human capital (Huckman et al., 2009).

These shared experiences and team-specific human capital can be readily applied (Reagans et al., 2004) and would potentially be valuable in another organizational setting. Understandably, this requires that the team moves collectively. Existing research has demonstrated that organizations and individuals can benefit from such collective moves (Groysberg et al., 2008; Campbell et al., 2014; Marx & Timmermans, 2017).

Furthermore, the field of entrepreneurship has also been rather vocal in how the transfer of shared experience and team-based human capital can lead to the superior performance of new ventures. More specifically, NVTs where team members have joint prior work experience are better at attracting venture capital (Roure & Madique, 1986); have more speed in the delivery of new products (Beckman, 2006; Beckman et al., 2007); demonstrate higher levels of sales (Eisenhardt & Schoonhoven, 1990); deliver a higher return on assets (Zheng et al., 2016); and have a higher likelihood of survival (Coad & Timmermans, 2014).

Obtaining shared experiences and building team-specific human capital happens in all settings where individuals collaborate. Also in NVTs, where some have claimed that they are often engaged in more intensive communication compared to work teams in established firms (Zheng et al., 2016), or when NVT members co-move, parts of the knowledge that reside in the organizational structures of the new ventures will remain intact.. The motive for co-mobility might be relevant for NVT members and prospective employers, irrespective of the organizational setting into which these NVT members co-move.

Shared Entrepreneurial Experience, Learning, and Re-entry into Entrepreneurship

While we have emphasized the benefits of co-mobility in terms of the transfer of knowledge and capabilities, the shared (entrepreneurial) experience might also offer benefits in terms of coping with closure and subsequent learning from “failure”. Entrepreneurship is associated with processes of experiential learning (Stam et al., 2008), and many entrepreneurs make multiple attempts to start a new venture (Sarasvathy et al., 2013). Indeed, empirical studies demonstrate that close to 20 percent of businesses are run by serial or habitual entrepreneurs in various countries, such as Germany (Wagner, 2004), Great Britain (Westhead & Wright, 1998), Finland (Hyytinen & Ilmakunnas, 2007), and Portugal (Amaral et al., 2011).

Through their shared entrepreneurial experience, team members might have developed tacit knowledge of entrepreneurship, which provides them with more

entrepreneurial experience to recognize and evaluate potential opportunities (Baron & Ensley, 2006). Second, this joint experience of founding a new venture provides collective knowledge that guides the entrepreneurial process and reduces errors (Witt, 2000; Nielsen & Sarasvathy, 2016). As a result, it allows the team members to undertake aspects of a new firm's activities more effectively in the future (Delmar & Shane, 2006). As the entrepreneurial experience has allowed team members to become familiar with each other understand their roles within the firm, they have set an important condition for overcoming the challenges associated with liabilities of newness (Stinchcombe, 1965). Also, entrepreneurs with prior experience of business termination identified more business opportunities in a given period than those without such experience (Ucbasaran et al., 2009). Finally, staying together may provide the restart with greater access to the financial, social, and human resources (Kor & Mahoney, 2000) needed to re-enter. Therefore, besides value being obtainable from co-mobility in general, there are particular benefits that can be captured by re-entry into entrepreneurship as a serial entrepreneurial team.

Admittedly, one reason for a new venture closure might be poor team dynamics. In these instances, the closure of the new venture and dispersion of NVT members is without much consequence and it would be rather unlikely that collaboration would continue. However, given that the dissolution of new ventures cannot unequivocally be classified as failure, there might be some value or particular intangible assets embedded in the team that might be lost when NVT members each go their separate ways. Subsequently, value might be retained when NVT members co-move, either to work for another employer or to engage in another entrepreneurial process.

The question that arises is to what extent such co-mobility patterns occur, or more specifically: (i) to what extent do the NVT members stay together following the dissolution of the new venture; (ii) what are the determinants of these co-moves; and (iii) what are the destinations of co-movers and, in particular, the implications in terms of re-entry into entrepreneurship? This paper will address these questions.

4.3 Method

Data and Sampling

In our effort to answer these questions, we rely on the Danish Integrated Database for Labor Market Research (IDA). The IDA is a longitudinal and universal database based on government registers and administered by Statistics Denmark. The database contains information on all individuals, workplaces, and firms in the Danish economy. The IDA is well suited to our analysis, as we are able to follow career trajectories of individuals and can identify co-worker relationships. Furthermore, the unique firm and workplace identification numbers, in combination with the new firm registry, allow us to identify new ventures, the year in which these were established, and the year in which these new ventures terminated their activities. For our analysis, we limit ourselves to new ventures established between 2001 and 2006; the lower bound is chosen due to a structural break in the data and the upper year restriction is a result of data availability.

To create a clean sample of dissolved new venture, we only include new ventures where we know with certainty that the new venture terminated up to five years after founding based on the listed date of deregistration. Furthermore, by following the identification numbers of workplaces and firms, we exclude those instances where the new venture was subject to a merger and acquisition or experienced a change in ownership (e.g. an IPO). Other restrictions that we impose are based on size. First, we are interested in new venture teams and exclude all new ventures that involve only one individual. Second, we exclude new registrations with more than 10 employees in the founding year. Via this restriction, we remove a large share of “false” new ventures, e.g. entry of new economic activity that is the result of entry from established firms from abroad, and can better deal with the complexity of relationships among NVT members.

Finally, we exclude all new ventures in public or heavily public regulated industries. Following these rather strict selection criteria, we initially identify 3,330 team-based

new ventures that ceased operations within 5 years of their founding. Please note that this sample will decrease further due to missing observations of NVT members.

New Venture Team Members

Our operationalization of the NVT concept is more inclusive compared to the earlier usage of the term. As such, our definition aligns closely with the work of Gartner et al. (1994) and Ruef (2010) on entrepreneurial groups and conceptualizes the NVT more as founders and joiners (Roach & Sauermann, 2015). Due to limitations imposed by government registers, we can only identify individuals who have a formal attachment to the new venture in the form of being a founder, employer, owner or an (early) employee. All those affiliated with a new organization up until the closure of the new venture are regarded as NVT members; however, we create a dummy variable that indicates if the individual was an NVT member in the year of founding. As an additional criterion, we determine that an NVT member has to be present with at least one other NVT member during the observational period to assure that the NVT members are actually collaborators; this criterion results in the exclusion of 60 observations. Given these restrictions, we identify 18,509 NVT members.

NVT co-mobility can only be determined for those NVT members that remain active on the labor market, either as a founder/owner, an employer or an employee. Individuals who are unemployed, or otherwise outside the labor market, following the dissolution are excluded from the sample. The IDA allows us to identify the labor market status for all NVT members and we identify 15,038 (81.25%) NVT members who are still active (see Table 1).⁶ These findings mirror the work by Jenkins & McKelvie (2017), who find that the majority of owner-managers remain active on the labor market following the closure of the new venture.

⁶ The remaining 18.75% can be classified as follows: Just over 6% are registered as unemployed or on sick leave. Close to 8% of the NVT members are outside the labor force; based on the information in the register, we identify that the majority of NVT members below the age of 25 are pursuing an education and the majority of NVT members over 60 are retired. Approximately 4% are no longer registered in Denmark, which means they either left the country, passed away, or are missing.

“Insert Table 1 Here”

Besides the restriction that an NVT should remain active on the labor market, they also need to be affiliated with an identifiable workplace; in cases where the firm and workplace identification number is not known, the individual is removed from the sample. Finally, we observe 1,618 NVT members who return to, or never left, the employer they worked for in the year prior to founding the new venture. Because we were not able to identify whether this type of return really meant a move, we removed these individuals from our sample. Following these sets of restrictions, we identify 11,903 NVT members, who are affiliated to 2,403 new ventures.

New Venture Team Member Dyads

To understand the determinants of co-mobility we focus on the relationship that exist between NVT members, and more specifically on the relationship between individual pairs or dyads. There are both conceptual and methodological motives to focus on the dyad. First, dyads provide us with insights on the nature of the relationship between individuals, as we can identify how the characteristics of one NVT member align with the characteristics of the other. Individual-level analysis will not capture this effect. We are able to identify to what extend the individuals are similar in terms of some ascribed characteristics; for example, gender, age, and nationality. Focusing on dyads also allows us to identify other relationships between individuals that might explain why they decide to co-move; for example, prior joint work relations or family ties. Moreover, we can also link achieved characteristics, where some combined skills might be more prone to interdependencies in the workplace and, subsequently, would make NVT members more likely to co-move.

Focusing on dyads is also methodologically meaningful (Harper, 2008; Coad & Timmermans, 2014). When limiting ourselves to dyads, there is a straightforward relationship, which is the relationship between *A* and *B*. When moving to larger teams, for example triads, the measurement becomes increasingly more complex. This is particularly valid when investigating mobility patterns, as mobility patterns of individuals within a team differ; for example, in a team of three NVT members

only two might co-move, while the third follows a different career path. Creating a team-level co-mobility measure, such as the share of co-movers, and investigating how team-level characteristics determine this co-mobility rate becomes less meaningful. To illustrate, in larger teams we might identify a certain level of homogeneity among team members, but we cannot determine, based on this unit level construct, if those that co-move reflect the homogeneity in the team. Second, in larger NVTs, we are also confronted with subgroups of co-movers who each co-move to different employers. The motives for each subgroup to co-move might differ, and each subgroup might have different dyad-level characteristics.

Dyads are created by linking each NVT member with another NVT member, irrespective of co-mobility, making the total number of dyads per new venture

$$\frac{n_j(n_j-1)}{2},$$

where n_j is the number of NVT members in new venture j .⁷ In total, our sample of NVT members yields 36,403 unique dyads.

New Venture Team Co-mobility

Our main variable of interest is to identify whether the two individuals that make up the dyad are co-movers. In this instance, we are rather strict in determining co-mobility since the two NVT members should not only re-appear working for the same employer, but also re-appear in working at the same workplace or workplace address. In this approach, we follow Marx & Timmermans (2017), who argue that moving to the same workplace would be a more accurate indicator for a persisting work relationship as movement to the same employer might result in NVT members ending up working at different locations, particularly when the organization is larger. As an indicator for co-mobility, we create a dummy variable with the value “one” when co-mobility occurs and “zero” otherwise.

⁷ To illustrate, an NVT consisting of two members will provide us with one dyad, an NVT consisting of three members has three dyadic work relationships, and an NVT consisting of four members consists of six dyads.

Dyad-level Characteristics

The detailed person level information obtained from the IDA allows us to create a set of dyad-level variables. First, we create dyad-level indicators on ascribed characteristics such as gender, age, and nationality. For gender, we create dummy variables for all-male dyads and all-female dyads, the mixed-gender dyad being the omitted category in our regression analysis. For age, we create a measure for the average age of the individuals in the dyad and the age dispersion, measured by the absolute age difference in the dyad. For nationality, we make a simple distinction between Danish and foreign citizens creating a dummy variable for all-Dane dyads and all-foreign dyads, the mixed Danish-foreign dyad being the omitted category.

Homogeneity on these dimensions is often associated with effective interpersonal collaboration and reduced conflict (Jackson et al., 2003). In addition, similarity on these ascribed characteristics is a strong predictor of team formation (Williams & O'Reilly, 1998), also within entrepreneurship (Ruef et al., 2003). Thus, we expect that homogeneous dyads are more likely to demonstrate persistence in their work relationships, also because heterogeneity in the dyad might have been the reason why they closed the new venture in the first place.

The individuals in the dyad might also have established relationships besides being NVT members. Such relationships might determine largely the extent to which NVT members co-move, and might also explain why they are NVT members in the first place. The first relation we identify is whether the dyad consists of members from the same family. For family ties, we identify spousal relationships, relationships between siblings, and relationships between parents and their children. Among family dyads, we expect a stronger commitment to continue a working relationship. Another relationship we identify is whether NVT team members have a joint work relationship prior to establishing the new venture. As highlighted in the theory section, research on entrepreneurship has demonstrated the importance of prior joint work experience (Coad & Timmermans, 2014; Eisenhardt & Schoonhoven, 1990; Roure & Maidique, 1986), and this experience might be a determinant for subsequent co-mobility. We created a dummy variable with the value "one"

whenever the individuals in the dyad worked at the same workplace prior to establishing the new venture; the dummy variable receives a “zero” otherwise.

As for the achieved characteristics, we rely on the educational background of the individuals in the dyad, mainly as these are the only variables at our disposal. First, we create a variable indicating the average education level, measured in years of education. Second, we create a measure indicating the disparity in education level, and, similar to age, we measure this dispersion by the absolute difference in years of education. In addition, we create a dummy variable indicating whether the dyad includes one or two individuals with a college degree, a technical or engineering degree, or a business degree.

In creating these educational disciplines, we attempt to capture motives that underlie the joint knowledge accumulation and complementarity arguments for co-mobility. More specifically, we argue that joint knowledge accumulation is strong for technically oriented team members, specifically when the dyads are comprised of two engineers. Individuals with a technical background are more inclined to work on joint projects, due to the interdependent nature of technical work. They have common tools and mental models to discuss and may find joint projects to work on. Besides, because of the complexity of technical work (Janz et al., 1977), individuals need to work with others to add more knowledge and share ideas.

Finally, we define a set of dyad-level characteristics related to NVT membership—that is, whether both team members were members in the year of founding, whether only one individual was a member in the year of founding, or whether both joined the team in later years. We develop a similar variable, but focus on whether members were present in the last observation prior to the dissolution. We also identify whether one person in the dyad is registered as the founder/owner of the business.

New Venture and New Venture Team Characteristics

In addition to dyad-level characteristics, we also include overall venture-level characteristics. We identify different characteristics of the new venture including the size at founding, the year of founding, the location of the new venture (more precisely, whether the firm is located in the capital region), firm age upon closure (the longevity of the firm), and industry.

For industry, we identify the different sectors within the NACE rev2 industrial classification system.⁸ To create a distinction in the rather broad sector of manufacturing industries, we divide this category into high- and low-tech industries using the OECD industry classification. Based on this classification, we create a subsample of new ventures that are active within high-tech *and* knowledge-intensive business services. New ventures in these industries spend a reasonable amount of resources on development activities performed by skilled workers. Therefore, NVT members from closed high-tech start-ups may tend to stick together, so they can continue to build on these earlier efforts. Furthermore, in close relation to the skillset in the dyad, individuals working in high technology industries are skilled people with technical abilities who, as mentioned before, are more interdependent in their work. Using the previously mentioned family relationship dyad, we also create a dummy variable with a value of “one” if at least one family relationship existed in the founding year of the organization. Based on this measure, we identify if this new business is a family firm.

Finally, we include an indicator on how the firm performed prior to closure. As mentioned previously, research on new venture exit demonstrates that exits in general, and thereby closures of new ventures in particular, are not unequivocally be regarded as “failures” (Balcaen et al., 2012; Bates, 2005; Cope, 2011; Coad, 2014; Head, 2003; Jenkins & McKelvie, 2016; Ucbasaran et al., 2013; Wennberg et al., 2010; Wennberg & DeTienne, 2014), nor are all “failures” completely without value

⁸ These sectors are: manufacturing, construction, wholesale and retail, accommodation and food services, transportation and storage, information and communication, financial insurance activities, real estate activities, professional, scientific and technical activities, and administrative and support service activities.

(Coad, 2014). The data does not provide us with information on the motives for the dissolution; however, we argue that those who perform better prior to dissolution have a potentially stronger signaling value regarding the abilities of the NVT to potential future employers. In addition to sending a signal to potential future employers, it might also maintain confidence internally in the NVT to persist their co-working relationship. As a measure of performance, we include a measure on the turnover in the year prior to the closure. Table 2 provides an overview and description of all the key variables.

“Insert Table 2 Here”

Post-Dissolution Employment Characteristics

The variables listed above are meant to establish the determinants of co-mobility among NVT members. However, besides understanding the factors that drive these co-moves, we also want to investigate the particularities of their post-dissolution career trajectory, that is, for which type of firms these co-movers work for and the extent to which they re-enter into entrepreneurship. To identify the career trajectory following the new venture closure, we identify the new employer and create a set of characteristics on this employer, i.e., size industry and age. In addition to the age of the firm, we also identify, by using the previously mentioned new firm register, whether this new employer is a newly established business.

4.4 Results

In Table 3, we present an overview on the descriptive statistics and elaborate on differences in means between co-moving and non-co-moving dyads. As we have already established, we identify 36,403 dyads, which are constructed based on 11,903 individuals. Given on our measure for co-mobility, we identify 2,870 co-moving dyads. Breaking down these dyads into unique individuals, there are 2,174 individual co-movers; thus, the rate of co-mobility among NVT members is approximately 18.3 percent.

“Insert Table 3 Here”

Regarding the overall descriptive statistics, we also observe in this sample an overrepresentation of males; consequently, the male dyads are most frequent. Based on a difference in mean test, the share of male dyads is relatively larger among co-movers. The average age of individuals in the dyads is around 28.6, but co-moving dyads are older on average compared to non-co-moving dyads. The age difference is significantly higher among co-movers. In term of nationality, there are relatively more foreign dyads among co-movers, while the Dane-foreigner dyad has a relatively higher share among the non-co-moving dyads.

Within the dyads, two and six percent of dyads consist of family and prior joint experience dyads respectively. When breaking down the dyads into individual observations, we find that eight percent of NVT members work with at least one family member and 16 percent worked with another NVT member for a previous employer. The share of family ties and prior joint experience dyads are, not surprisingly, significantly larger among co-movers.

In terms of education, dyads with at least one individual with a college degree are relatively more common in our co-moving dyads; subsequently, the same is valid for college degree dyads. There is no significant difference in education level difference. There are relatively more dyads with at least one NVT member with a technical or business degree among the co-moving dyads; this also holds for dyads that consist of only technical or business degrees.

When the dyad is observed in the year up to closure, they are also more likely to continue their work relationship post-dissolution. Furthermore, the founder is more often likely to be part of the co-moving dyad. Otherwise, when a dyad works for a family firm, co-mobility is relatively less frequent. Co-mobility is more frequent when the dyad worked in a knowledge-intensive or high-tech industry. Moreover, NVT members' dyads of a better performing new venture are more likely to stay together.

Logistic Regression Analysis

Theoretically, the longitudinal nature of the register offers possibilities to apply panel regression techniques; however, the five-year period in which we observe entry and subsequent closure does not offer any repeated instances of the event under investigation. This means that there are no observations where a dyad co-moves to a newly established venture that closes within five year of founding and where this dyad subsequently co-moves. Consequently, we apply logistic regression analysis instead.

The results of this logistic regression analysis are presented in Table 4. This table contains several models where we create a set of subsamples that allow us to explore various aspects of the NVT co-mobility phenomenon in more detail. Model 1 and Model 2 present the logistic regression analysis for the full sample, the difference between these two models is that in Model 1 we only control if the co-moving dyad works for a new venture in a knowledge-intensive industry, while Model 2 includes unreported dummy variables for our more detailed sector classification.

The results of these models confirm most of the findings from the bivariate tests. First, dyads from new ventures in knowledge-intensive industries are 1.5 ($=e^{0.423}$) times more likely to co-move compared to dyads that worked in non-knowledge-intensive industries. In both models, the college degree dyad (odds ratio of 2.3) and technical/engineering education dyad (odds ratio of 1.7) are also strongly significant. Given that the presence of one person with a technical/engineering education is not as strong and not that significant is a sign that there is some value in pairs with similar backgrounds.

Established relations between NVT members demonstrate to have a particularly strong effect. Family members are around three times more likely to co-move and NVT members with prior joint experience are around 2.7 times more likely. The latter demonstrates that some individuals tend to follow each other in their career trajectory.

Furthermore, male dyads are 1.3 times more likely to co-move than other gender dyads, although this effect drops to 1.2 times more likely to co-move in Model 2

where we apply more detailed industry controls. Where more detailed industry controls are applied, the female dyads are more likely to co-move (odds ratio of 1.16) although on a 10 percent level of significance. Foreign dyads are 1.44 times as likely to co-move compared to any other dyad. As expected, when firms perform better, there is also a higher likelihood that co-mobility occurs.

Our sample of NVT members include all individuals that were part of the new venture from founding to dissolution. The question that might arise is whether early NVT relationships drive the co-mobility process, or through involving new team members in later years better matches are created that might lead to post-dissolution co-mobility. In Model 3, we investigate the subsample of NVT members that were present in the new venture in the year of founding. The ascribed characteristics and previous co-worker relationships are stronger determinants of co-mobility; similar to these measures are also strong determinants of team formation (Ruef et al., 2003). The education-based measures lose some of their effect and the technical and business dyads are only significant on the 10 percent level of significance. Why we see this weaker effect among these education-based variable might be explained by the founding process of new ventures being driven first and foremost by similarity in the ascribed characteristics; when the business grows, founders are aware of the competences they lack and let NVT members with greater skills sets join (Kaiser & Müller, 2015). Furthermore, when the business grows, it is also easier to involve more highly educated members in the new venture (Bublitz et al., 2018). Since these skills are then important in further development of the business, the value is identified and NVT members might recognize the potential value post-dissolution. Family and NT members with prior joint experience maintain their strong effect. The performance of the new venture remains positive, but better performance is a stronger motivator for first year NVT members to remain together.

“Insert Table 4 Here”

As the previous models have demonstrated, family ties and prior joint experience are strong determinants for co-mobility. Consequently, it might not necessarily be the

shared experience and joint knowledge accumulation in the new venture that makes these individuals co-move shared experiences and human capital from a previous workplace. In Model 4, we create a subsample removing dyads with such relationships. Overall, the variables point in the same direction in terms of the determinants of co-mobility. Noticeable differences visible on the male dyads are no longer significant and female dyads are more likely to co-move. Otherwise, college dyads are more likely to co-move, while technical/engineer skills lose some of their effect size, although it remains positive with a strong effect size (odds ratio of 1.44). The latter might indicate that there is a relatively higher share of individuals with a technical/engineering education background among those dyads with previous joint work experience, which a t-test confirms. Thus, the fact that individuals with a technical and engineering background have shared prior joint work experience is indicative that the joint knowledge accumulation might be valuable in a future employment setting.

Model 1 established that NVT dyads in knowledge intensive industries are more likely to co-move. In Model 5, we look more closely at NVT mobility in this industry class. In this subsample, some differences stand out. Family ties are no longer of importance, while the role of joint previous experience increases in strength (odds ratio= 3.2). Furthermore, college dyads are no longer a factor that plays a role, but if it does it is negative. Dyads that comprise of two NVT members with a technical/engineering education demonstrate the strongest effect yet (odds ratio =2.1). Since we earlier established that these dyads also tend to have prior joint work experience, it appears that in these there is a strong connection between these individuals in terms of co-mobility. Individuals with a technical and engineering background might thus jump in and out of entrepreneurship in a team in a form of habitual hybrid entrepreneurship. Contrary to other subsamples, the performance of the new venture is no longer significant.

In Table 5, we will utilize the different level of turnover prior to dissolution to make a distinction between low-performing and high-performing dissolution. As noted previously, entrepreneurs close their business for various reasons and a closure can

therefore not necessarily be regarded as failure. Nevertheless, closure associated with poor performance is more likely to be perceived as failure as fall in revenues and rise of expenses are major issues that the firm becomes insolvent and founders cannot continue the business (Shepherd, 2003) and we expect differences in mobility patterns and characteristics of NVT dyads. To test this we ran six models for testing the co-mobility in low-performing (failure) vs. high-performing businesses. We by identifying whether the new venture had above or below median turnover (Model 6, Model 7 and Model 8) in the year prior to dissolution and if the new venture belonged to respectively the top bottom quartile of performance (Model 9, Model 10 and Model 11).

Model 6 and Model 9 in Table 5 confirm that NVT with higher level of performance are more inclined to co-move. Above median performance are 1.43 ($E^{0.362}$) more likely to co-move than below median performers. The upper quartile of performance are nearly twice as likely to co-move (odds ratio of $E^{0.64}=1.89$) times more likely to co-move (compared to a benchmark of those teams that perform between the 25th and 75th percentile), while the bottom quartile has a lower probability (odds ratio of $E^{-0.145}=0.87$) of co-moving.

Subsample analysis demonstrates that that family co-movement and team members with prior work experiences tend to co-move in both high and low performing businesses. This can be the evidence that irrespective of the new venture performance, persistent work relationships and strong ties can be the elements that provide the trust and commitment among team members and facilitate resource acquisition and implementation of techniques (Venkataraman, 1997) to the organization they move. Another interesting finding is that co-mobility is significant among the end dyads in both high and low performing dissolutions. This might be a sign that individuals with a short period of joint working experiences tend to continue working with each other and build their relationships and trust in order to boost their performance in new organizations. Furthermore, founding dyads are more likely to co-move even in low-performing businesses. This may be because of

the joint decision of the founders in termination of the business to discover new opportunities, or switching costs (Bates, 2005).

“Insert Table 5 Here”

Destination of NVT co-movers

While we established that co-mobility is rather common among NVT members and that some NVT members are more likely to co-move than others, e.g. those with a technical/engineering background and those who work in knowledge-intensive industries, we have not established the location where they move to.⁹ For destination characteristics, we focus on the following metrics: size, industry, and whether the future career track is a newly established venture. Descriptive statistics are presented in Table 6, Table 7, and Table 8.

“Insert Table 6 Here”

“Insert Table 7 Here”

“Insert Table 8 Here”

In terms of size (see table 6), co-movers, tend to move to smaller employers rather than larger employers. Since co-movers move to smaller firms, this might also strengthen the claim that they are actually collaborating in their future career. Co-movers are also more likely to move to firms that are active in the same four-digit NACE industry class, which might indicate that they also rely more heavily on the same industry experience. In terms of re-entry into entrepreneurship, the results are rather striking (see Table 8). Co-movers are affiliated with 783 unique post-dissolution firms; however, 177 (22.6%) are new ventures. This stands in stark

⁹ However, in our sample selection we identified that a large share of those confronted with exits remain active on the labor market

contrast with the number of new ventures that non-co-movers are associated with (which is 619, but only 9.4 percent). This might also link strongly to the results in Table 6 and Table 7, as most of the new ventures will be small in size and are most likely to be established in the same industry.

On the individual level, just over 22 percent of co-movers are affiliated with a new venture compared to 6.5 percent of non-co-movers. Although 18 percent of NVT co-movers make up 43 percent of NVT members that are part of a newly established venture following the dissolution. Consequently, not only are co-movers linked to new ventures, but they also establish a relatively large share of the new ventures, potentially as serial or habitual NVTs.

To analyze the distinction between co-movers and co-movers who enter into entrepreneurship more explicitly, we ran two sets of regressions, which we present in Table 9. First, we ran a logistic model comparing co-moving dyads that re-enter into entrepreneurship with co-moving dyads who do not (Model 12, Model 14, and Model 16). In addition, we ran three multinomial logistic models (Model 13, Model 15, and Model 17), which extend the models presented in Table 4. Here we compare the two types of co-moving dyads to non-co-moving dyads.

“Insert Table 9 Here”

What these models demonstrate is that the determinants of co-mobility into entrepreneurship and co-mobility in other forms of employment are not the same. Especially the education-based measures point in different directions in the difference models. While dyads with a college degree are more likely to co-move, they are less likely to do so in the form of re-entry into entrepreneurship. A potential reason might be that their opportunity cost of continuing entrepreneurship is too high. Similar patterns can be observed for dyads with a technical/engineering background. The instances where dyads are more likely to re-enter into entrepreneurship are when it involves a founder and in case of knowledge-intensive new ventures where the dyad had prior joint work experience and demonstrated better performance in the new venture.

4.5 Discussion and final remarks

We know very little about what happens to NVTs when new ventures dissolve. It is expected that most NVT members, just like their owner managers (Jenkins & McKelvie, 2017), will continue their careers by applying their skills and competencies in other organizational settings. In the context of NVTs, investigating post-dissolution job mobility is valuable, as much of the shared experience and team human capital might disappear if the team dissolves along with the new venture.

We demonstrate that the closure of the new venture does not necessarily mean that NVT work relationships end. With the purpose of contributing to the debate on the extent of co-movement of NVTs after new venture exits, we ran an analysis on Danish new ventures. We analyzed 2,403 NVTs consisting of 11,903 individuals whom we identified from the Danish register in the period between 2001 and 2006. This sample allowed us to identify NVT co-mobility, the determinants of this co-mobility at the dyad levels, and the destination of co-movers, specifically re-entry into entrepreneurship.

The first contribution of this study is that it establishes that NVT co-mobility is a common phenomenon, as 18.3% of the samples are shown to have co-moved (conditional on being active on the labor market). Thus, these relationships persist after new venture closure, despite a diminished quality of social relationships (Sutton & Callahan, 1987) and the consequence of the creation of a stigma around new venture closures (Cardon et al., 2011). Furthermore, previous social ties play a particularly important role, as prior joint work experience and family ties increase the likelihood of individuals co-moving. Therefore, it appears that some individuals follow each other in their careers. Having such strong social ties might be important in itself, as they are believed to improve the performance of both workers and firms (Boselie et al., 2001; Gelderblom & de Koning, 1996).

The dyad-level analysis highlights that co-mobility occurs more frequently among homogeneous groups, indicating that people with similar human capital characteristics (age, gender, education, and occupation) are more inclined to

collectively pursue their careers. The results of previous research have also shown that team composition is based on similarities rather than differences (Ruef et al., 2003). This might be due to the existence of common interests (Martin & Yeung, 2006). As Louch (2000) indicated, it would be harder for people with different tastes and interests to remain in contact and work together. Previous research has also shown that from the gender point of view, men's business discussion networks contain few women and, therefore, contribute to gender homogeneity (Aldrich, 1999; Carter, 1994).

Co-mobility occurs more frequently among individuals with technical and engineering backgrounds. This might be explained by the importance of collaboration and complementarities that emerge in their method of working and the overall complexity of technical work (Janz et al., 1977), such as the hand-overs involved in particular technical/engineering tasks. This was also shown by Ganco (2013), who found that co-inventors of patents were more likely to patent together again (at a different firm) when they had worked on more complex technologies. In these technical and engineering teams, complementarities may include learning to work with a shared set of tools or technologies. Such mutually dependent work relationships are also more frequent in knowledge-intensive industries in general; consequently, higher rates of co-mobility are not only found among workers with technical and engineering backgrounds, but also among NVT members working in knowledge-intensive startups.

The second contribution of this study is the finding that a relatively large share of co-movers re-enters into entrepreneurship, i.e., larger compared to one-person attempting to establish a new business. Consequently, many newly established team-based ventures are comprised of individuals who have shared experience of starting new ventures, and they might be referred to as a serial entrepreneurial team. However, the determinants of co-mobility for established firms and re-entry into entrepreneurship are not the same, particularly when it comes to more highly educated individuals.

Given the negative emotions associated with business failure, including pain, humiliation, blame, and anger (Cope, 2011; Shepherd, 2003; Singh et al., 2007), such failure may lead to the fear of continuing the entrepreneurial process and staying together may provide the restart with greater access to the financial, social, and human resources (Kor & Mahoney, 2000) needed to re-enter. Furthermore, each team member keeps adding to the variety of views, skills, and knowledge, and this enables the team to complete complex tasks (Ucbasaran et al., 2003). Furthermore, as the re-entry of NVTs occurs frequently, curiosity arises regarding aspects of team-level learning from failure within entrepreneurship, in addition to the individual-level learning currently investigated within the field of entrepreneurship (Nielsen & Sarasvathy, 2016; Sarasvathy et al., 2013; Shepherd, 2003; Stam & Schutjens, 2006).

Limitations and Future Research

Before concluding, we would like to highlight a number of limitations of our analysis. Since the study focused on Denmark, how valid our findings are for the institutional context in other countries remains an open question. Furthermore, we obtained our data from the Danish register, which was gathered using government records. Even though the data were heavily detailed and longitudinal, they pose some limitations with regard to investigating entrepreneurship. First, there were constraints on firm registrations and a lack of information on nascent entrepreneurship and the motivation for startup and closure. In addition, observations were only made once a year; we did not observe startups that entered and dissolved within the first year. Also, we only observed individuals with a formal attachment to the organization, and the exact role of each individual in the NVT was not known.

With these caveats in mind, we have found support for co-mobility and subsequent team-level re-entry into entrepreneurship. Identifying the existence of these mobility patterns opens up other avenues for research. To better understand the mechanisms behind this co-moving behavior, it would be highly relevant to conduct field work aimed at constructing more grounded theory regarding NVT co-mobility. This is

pivotal, since it will allow researchers to observe different factors that cannot be identified through the dataset used in the present study, including what the underlying motives are for co-moving.

Another implication of NVT co-mobility could be looking at this specific phenomenon from the firm-level perspective. It would be advantageous to understand how the entrepreneurs' co-mobility affects the organization for which they work following the new venture dissolution. Does the new firm benefit from hiring these entrepreneurs? Besides, since founding a new venture is one of the results of our study, researchers might be interested in exploring how joint movement affects the success of a new venture. Does the new venture perform well, and how can the previous experience of the NVT that closed benefit the performance of the new venture?

Finally, we want to introduce a new perspective to the growing body of literature on serial and habitual entrepreneurship—that is, the serial or habitual entrepreneurial team. The data suggest that this is not an uncommon phenomenon, particularly in high-tech and knowledge-intensive ventures. The existence of serial new venture teams would also call for studies that consider team-level perspective on failure and learning.

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Table 1: Labor market status of NVT members in the year following the new venture closure

Labor market status in the year after new venture dissolution (n=18,509)	count	%
Wage earner/entrepreneur	15,038	81.25 %
Unemployed/leave of absence	1,240	6.70 %
Outside the labor force	1,443	7.80 %
Unknown (i.e. migrated, missing, died)	788	4.26 %
Total	18,509	100.00 %

Table 2: Variables and Variable Description

Variable	Description
Male dyad	Both NVT members in the dyad are male
Female dyad	Both NVT members in the dyad are female
Mix gender dyad	Dyad with male and female
Average age dyad	The average age of the NVT members in the dyad
Age difference dyad	The absolute age difference NVT members in years
Dane dyad	Both NVT members have the Danish nationality
Foreign dyad	Both NVT members have a non-Danish nationality
Dane-foreign dyad	Dyad with Danes and non-Danes
Family dyad	Both NVT members are part of the same family
Prior joined experience	Both NVT members worked at the same workplace prior to starting the new venture
Average education year dyad	The average years of education of the NVT members in the dyad
Education year difference dyad	The absolute difference in years of education between NVT members in the dyad
1 NVT member with college degree	Only one of the NVT members has a college degree (or higher)
1 NVT member with technical education	Only one of the NVT members has an education background in engineering
1 NVT member with business education	Only one of the NVT members has an education background in business and/or economics
College degree dyad	Both NVT members have a college degree
Technical/engineering education dyad	Both NVT members have an educational background in Engineering
Business/administration dyad	Both NVT members have an educational background in Business and Economics
1 NVT member present at end	Only one of the NVT members was present in the year prior to new venture exit
1 NVT member present at start	Only one of the NVT members was present in the year of new venture founding
End dyad	Both NVT members where present in the final observation before new venture exit
Start dyad	Both NVT members where present in the first observation following firm founding
Founder dyad	the registered founder/owner of the new venture is part of the dyad
Copenhagen	The new venture was located in the Larger Copenhagen Area
Family firm	The new venture is considered to be a family firm
Knowledge-intensive industry	The new venture is active in a knowledge intensive industry
Last-year turnover (10.000 DKK)	Turnover in the year prior to new venture exit

Table 3: Descriptive statistics and difference-in-means test for dyads (n=36,403)

Variable	Mean	SD	Difference-in-means co-mobility		
			no (n = 33,533)	yes (n = 2,870)	p-value
Male dyad	0.413	0.492	0.405	0.499	0.000
Female dyad	0.285	0.452	0.289	0.238	0.000
Mix gender dyad	0.302	0.459	0.305	0.262	0.000
Average age dyad	28.632	9.371	28.289	32.643	0.000
Age difference dyad	10.122	9.389	10.083	10.580	0.007
Dane dyad	0.856	0.351	0.856	0.863	0.263
Foreign dyad	0.041	0.198	0.040	0.051	0.006
Dane-foreign dyad	0.103	0.303	0.104	0.086	0.002
Family dyad	0.022	0.146	0.019	0.056	0.000
Prior joined experience	0.064	0.245	0.057	0.148	0.000
Average education year dyad	1.428	1.361	1.401	1.747	0.000
Education year difference dyad	1.393	1.509	1.396	1.357	0.188
1 NVT member with college degree	0.155	0.362	0.156	0.145	0.111
1 NVT member with technical education	0.176	0.380	0.172	0.214	0.000
1 NVT member with business education	0.203	0.403	0.202	0.221	0.013
College degree dyad	0.032	0.177	0.030	0.055	0.000
Technical/engineering education dyad	0.074	0.262	0.069	0.127	0.000
Business/administration dyad	0.033	0.178	0.032	0.045	0.000
1 NVT member present at end	0.206	0.404	0.214	0.110	0.000
1 NVT member present at start	0.280	0.449	0.278	0.296	0.044
End dyad	0.260	0.438	0.231	0.590	0.000
Start dyad	0.262	0.440	0.267	0.208	0.000
Founder dyad	0.196	0.397	0.192	0.242	0.000
Copenhagen	0.250	0.433	0.251	0.239	0.181
Family firm	0.236	0.425	0.241	0.187	0.000
Knowledge-intensive industry	0.122	0.328	0.118	0.175	0.000
Last-year turnover (10.000 DKK)	33.894	60.984	31.105	66.488	0.000

Values in bold are significantly higher on the 5 percent level

Table 4: Logistic Regression Results Dyads

	MODEL 1	MODEL 2	MODEL 3	MODEL 4	MODEL 5
Sample	All dyads	All dyads	Founding year dyads	Excluding family and prior joined experience dyads	Knowledge intensive and High tech industries
Male dyad	0.261*** (0.05)	0.166** (0.06)	0.361** (0.12)	0.112 (0.06)	0.369** (0.14)
Female dyad	0.081 (0.06)	0.153* (0.06)	0.206 (0.14)	0.177** (0.06)	-0.039 (0.24)
Average age dyad	0.037*** (0.00)	0.028*** (0.00)	0.018** (0.01)	0.032*** (0.00)	0.050*** (0.01)
Age difference dyad	-0.006* (0.00)	-0.005 (0.00)	-0.009 (0.01)	-0.002 (0.00)	-0.019* (0.01)
Dane dyad	-0.103 (0.07)	-0.122 (0.07)	-0.028 (0.18)	-0.226** (0.08)	0.308 (0.22)
Foreign dyad	0.321** (0.12)	0.367** (0.12)	0.650** (0.25)	0.387** (0.13)	0.256 (0.43)
Family dyad	1.150*** (0.12)	1.148*** (0.12)	1.004*** (0.20)		0.243 (0.56)
Prior joined experience dyad	0.933*** (0.07)	0.936*** (0.07)	1.096*** (0.10)		1.170*** (0.16)
Average education year dyad	-0.029 (0.02)	-0.045** (0.02)	-0.096 (0.06)	-0.067*** (0.02)	0.069 (0.04)
Education year difference dyad	-0.157*** (0.03)	-0.140*** (0.03)	0.040 (0.04)	-0.171*** (0.03)	0.047 (0.07)
1 NVT member with college degree	0.175* (0.07)	0.200** (0.07)	0.009 (0.17)	0.303*** (0.07)	-0.507** (0.19)
1 NVT member with technical education	0.162* (0.07)	0.126 (0.07)	0.158 (0.15)	0.136 (0.07)	0.065 (0.17)
1 NVT member with business education	0.155* (0.06)	0.139* (0.06)	-0.089 (0.14)	0.132 (0.07)	-0.380* (0.15)
College degree dyad	0.838*** (0.13)	0.829*** (0.13)	0.240 (0.33)	1.022*** (0.14)	-0.679* (0.28)
Technical/engineering education dyad	0.577*** (0.10)	0.526*** (0.10)	0.479* (0.21)	0.367** (0.12)	0.759*** (0.23)
Business/administration dyad	0.303* (0.13)	0.216 (0.13)	0.522* (0.24)	0.320* (0.14)	-0.401 (0.26)
1 NVT member present at end	-0.167* (0.07)	-0.168* (0.07)	-0.192 (0.14)	-0.061 (0.08)	-1.332*** (0.28)
1 NVT member present at start	0.085 (0.06)	0.183** (0.06)		0.218*** (0.07)	0.224 (0.16)
End dyad	1.376*** (0.05)	1.330*** (0.05)	0.676*** (0.11)	1.560*** (0.06)	1.076*** (0.17)
Start dyad	-0.244** (0.08)	-0.125 (0.08)		-0.006 (0.09)	-0.476* (0.23)
Founder dyad	0.269*** (0.06)	0.308*** (0.06)	0.233* (0.11)	0.355*** (0.07)	0.447** (0.17)
Copenhagen	0.031 (0.05)	-0.058 (0.05)	-0.160 (0.10)	-0.046 (0.06)	1.099*** (0.17)
Family firm	-0.026 (0.06)	0.031 (0.06)	0.111 (0.13)	0.073 (0.07)	-0.071 (0.37)
Knowledge-intensive industry	0.423*** (0.06)				
Last-year turnover (10.000 DKK)	0.003*** (0.00)	0.004*** (0.00)	0.007*** (0.00)	0.004*** (0.00)	-0.001 (0.00)
Constant	-4.153*** (0.19)	-4.235*** (0.20)	-3.723*** (0.45)	-4.472*** (0.22)	-4.728*** (0.56)
Year dummies	yes	yes	yes	yes	yes
Startup size dummies	yes	yes	yes	yes	yes
Industry dummies	no	yes	yes	yes	yes
firm age dummies	yes	yes	yes	yes	yes
Pseudo R2	0.151	0.162	0.135	0.166	0.267
Log Likelihood	-8524.205	-8419.641	-1932.575	-7030.669	-1138.614
N	36,403	36,403	9,551	33,317	4,323

significance levels ***< 0.01; **<0.05; *0.10

Table 5: analysis of the co-mobility on low-performing vs. high-performing dissolution

Sample	MODEL6	MODEL7	MODEL8	MODEL9	MODEL10	MODEL11
	All dyads	All dyads Below median turnover	All dyads above median turnover	All dyads	All dyads Bottom last turnover quartile	All dyads Top last turnover quartile
Male dyad	0.202*** (0.05)	0.031 (0.07)	0.463*** (0.10)	0.205*** (0.05)	0.319* (0.14)	0.058 (0.09)
Female dyad	0.153* (0.06)	0.274*** (0.08)	-0.017 (0.11)	0.168*** (0.06)	-0.143 (0.17)	0.119 (0.10)
Average age dyad	0.030*** (0.00)	0.025*** (0.00)	0.029*** (0.00)	0.028*** (0.00)	0.038*** (0.01)	0.017*** (0.00)
Age difference dyad	-0.005* (0.00)	0.000 (0.00)	-0.013** (0.00)	-0.004 (0.00)	-0.016** (0.01)	-0.002 (0.00)
Dane dyad	-0.060 (0.07)	-0.196* (0.10)	-0.067 (0.12)	-0.086 (0.07)	0.183 (0.20)	-0.278* (0.13)
Foreign dyad	0.351** (0.12)	0.477** (0.16)	0.220 (0.19)	0.343*** (0.12)	0.326 (0.28)	-0.332 (0.24)
Family dyad	1.169*** (0.12)	1.142*** (0.20)	1.166*** (0.16)	1.202*** (0.12)	1.357*** (0.24)	1.282*** (0.34)
Prior joined experience dyad	0.925*** (0.07)	0.864*** (0.09)	1.053*** (0.11)	0.941*** (0.07)	0.882*** (0.17)	0.872*** (0.13)
Average education year dyad	-0.127*** (0.03)	-0.093** (0.04)	-0.225*** (0.05)	-0.133*** (0.03)	-0.131 (0.08)	-0.005 (0.05)
Education year difference dyad	-0.052** (0.02)	-0.067** (0.02)	0.001 (0.03)	-0.056*** (0.02)	0.055 (0.04)	-0.076** (0.03)
1 NVT member with college degree	0.222** (0.07)	0.111 (0.09)	0.314** (0.11)	0.242*** (0.07)	0.076 (0.11)	-0.203 (0.12)
1 NVT member with a technical education	0.175** (0.07)	0.007 (0.08)	0.296* (0.12)	0.195** (0.07)	0.032 (0.19)	-0.065 (0.11)
1 NVT member with a business education	0.135* (0.06)	0.103 (0.08)	0.114 (0.12)	0.142* (0.06)	0.016 (0.18)	0.014 (0.10)
College degree dyad	0.835*** (0.13)	0.365 (0.22)	1.079*** (0.17)	0.904*** (0.13)	0.428 (0.29)	-0.314 (0.30)
Technical/engineering education dyad	0.525*** (0.10)	0.189 (0.13)	0.974*** (0.17)	0.571*** (0.10)	0.459 (0.27)	0.032 (0.18)
Business/administration dyad	0.181 (0.13)	0.072 (0.16)	0.327 (0.24)	0.223 (0.13)	0.231 (0.37)	-0.246 (0.20)
1 NVT member present at end	-0.173* (0.07)	-0.252** (0.10)	-0.157 (0.11)	-0.231** (0.07)	-0.122 (0.17)	-0.350** (0.13)
1 NVT member present at start	0.203*** (0.06)	0.340*** (0.08)	0.023 (0.10)	0.224*** (0.06)	-0.221 (0.16)	0.455*** (0.10)
End dyad	1.318*** (0.05)	1.309*** (0.07)	1.002*** (0.10)	1.207*** (0.05)	0.889*** (0.16)	1.471*** (0.10)
Start dyad	-0.106 (0.08)	0.114 (0.11)	-0.319* (0.13)	-0.078 (0.08)	-0.684*** (0.21)	0.200 (0.18)
Founder dyad	0.274*** (0.06)	0.310*** (0.09)	0.424*** (0.10)	0.307*** (0.06)	0.566*** (0.16)	0.316** (0.12)
Copenhagen	-0.049 (0.05)	-0.259** (0.08)	-0.017 (0.09)	-0.053 (0.05)	0.047 (0.13)	-0.754*** (0.13)
Family firm	0.020 (0.06)	-0.212* (0.09)	0.286** (0.09)	-0.015 (0.06)	0.011 (0.16)	-0.950*** (0.16)
last year turnover (above median)	0.362*** (0.05)					
last year turnover (top quartile)				0.640*** (0.05)		
last year turnover bottom quartile)				-0.145* (0.07)		
Last year turnover (10.000 DKK)		0.004*** (0.00)	0.030** (0.01)		-0.171** (0.05)	0.002*** (0.00)
Constant	-4.513*** (0.20)	-4.150*** (0.29)	-4.463*** (0.31)	-4.303*** (0.20)	-5.022*** (0.60)	-4.389*** (0.43)
Year dummies	yes	yes	yes	yes	yes	yes
Startup size dummies	yes	yes	yes	yes	yes	yes
industry dummies	yes	yes	yes	yes	yes	yes
firm age dummies	yes	yes	yes	yes	yes	yes
Pseudo R2	0.157	0.132	0.176	0.163	0.155	0.211
log likelihood	-8470.497	-5101.675	-3171.607	-8408.309	-1384.362	-3057.457
N	36,398	18,196	18,202	36,398	8,549	9,080

significance levels***< 0.01; **<0.05; *0.10

Table 6: Destination, size categories

	# Firms				
	Comovers		Non- Comovers		Total
<10 employees	337	13.3 %	2,204	86.7 %	2,541
		46.4 %		36.9 %	37.9 %
11-25 employees	149	10.8 %	1,228	89.2 %	1,377
		20.5 %		20.6 %	20.6 %
26-50 employees	73	9.0 %	734	91.0 %	807
		10.1 %		12.3 %	12.1 %
51-100 employees	45	7.8 %	533	92.2 %	578
		27.0 %		8.9 %	8.6 %
101-250 employees	27	5.3 %	486	94.7 %	513
		3.7 %		8.1 %	7.7 %
>250 employees	95	10.8 %	785	89.2 %	880
		13.1 %		13.1 %	13.1 %
Total	726	10.8 %	5,970	89.2 %	6,696

# Individuals					
	Comovers		Non- Comovers		Total
<10 employees	1,028	<i>31.2 %</i>	2,270	<i>68.8 %</i>	3,298
		<i>40.5 %</i>		<i>26.6 %</i>	<i>29.8 %</i>
11-25 employees	550	<i>29.7 %</i>	1,303	<i>70.3 %</i>	1,853
		<i>226.0 %</i>		<i>15.3 %</i>	<i>16.8 %</i>
26-50 employees	239	<i>22.6 %</i>	817	<i>77.4 %</i>	1,056
		<i>9.4 %</i>		<i>9.6 %</i>	<i>9.6 %</i>
51-100 employees	301	<i>32.5 %</i>	626	<i>67.5 %</i>	927
		<i>11.9 %</i>		<i>7.3 %</i>	<i>8.4 %</i>
101-250 employees	100	<i>13.7 %</i>	632	<i>86.3 %</i>	732
		<i>3.9 %</i>		<i>7.4 %</i>	<i>6.6 %</i>
>250 employees	320	<i>10.0 %</i>	2,871	<i>90.0 %</i>	3,191
		<i>12.6 %</i>		<i>33.7 %</i>	<i>28.9 %</i>
Total	2,538	<i>23.0 %</i>	8,519	<i>77.0 %</i>	11,057

Table 7: Destination, same industry (4 digit NACE rev2)

	# Firms				
	Comovers		Non- Comovers		Total
Same Industry	294	21.4 %	1,080	78.6 %	1,374
	41.4 %		18.3 %		20.7 %
Other Industry	417	7.9 %	4,832	92.1 %	5,249
	58.6 %		81.7 %		79.3 %
Total	711	10.7 %	5,912	89.3 %	6,623
	# Individuals				
	Comovers		Non- Comovers		Total
Same industry	1,183	49.2 %	1,222	50.8 %	2,405
	48.0 %		14.5 %		22.0 %
Other industry	1,282	15.1 %	7,226	84.9 %	8,508
	52.0 %		85.5 %		78.0 %
Total	2,465	22.6 %	8,448	77.4 %	10,913

Table 8: Destination, new established firm

	# Firms				
	Comovers		Non- Comovers		Total
Established firms	606	9.2 %	5,951	90.8 %	6,557
	77.4 %		90.6 %		89.2 %
New ventures	177	22.2 %	619	77.8 %	796
	22.6 %		9.4 %		10.8 %
Total	783	10.6 %	6,570	89.4 %	7,353

	# Individuals				
	Comovers		Non- Comovers		Total
Established firms	1,693	15.7 %	9,093	84.3 %	10,786
	77.9 %		93.5 %		90.6 %
New ventures	481	43.1 %	636	56.9 %	1,117
	22.1 %		6.5 %		9.4 %
Total	2,174	18.3 %	9,729	81.7 %	11,903

Table 9: Regression Re-entry into Entrepreneurship

Sample	MODEL 12	MODEL 13		MODEL 14	MODEL 15		MODEL 16	MODEL 17	
	All dyads	All dyads (mlogit)		Excluding family and prior joined experience dyads	Excluding family and prior joined experience dyads (mlogit)		Knowledge intensive and High tech industries	Knowledge intensive and High tech industries (mlogit)	
		Comove Non_e'ship	Comove e'ship		Comove Non_e'ship	Comove e'ship		Comove Non_e'ship	Comove e'ship
Male dyad	0.214 (0.15)	0.089 (0.06)	0.502*** (0.12)	0.249 (0.17)	0.011 (0.07)	0.554*** (0.13)	-0.453 (0.52)	0.405** (0.15)	0.366 (0.33)
Female dyad	-0.688*** (0.19)	0.210** (0.06)	-0.268 (0.16)	-0.708*** (0.21)	0.232*** (0.07)	-0.202 (0.17)	-0.202 (0.87)	-0.064 (0.26)	0.278 (0.52)
Average age dyad	0.014* (0.01)	0.027*** (0.00)	0.035*** (0.01)	0.024** (0.01)	0.028*** (0.00)	0.047*** (0.01)	0.044 (0.04)	0.046*** (0.01)	0.055* (0.02)
Age difference dyad	-0.014* (0.01)	-0.002 (0.00)	-0.014* (0.01)	-0.016* (0.01)	0.001 (0.00)	-0.015* (0.01)	-0.055 (0.03)	-0.011 (0.01)	-0.070*** (0.02)
Dane dyad	-0.089 (0.20)	-0.112 (0.08)	-0.133 (0.16)	-0.268 (0.22)	-0.215* (0.09)	-0.214 (0.17)	-0.162 (0.91)	0.215 (0.23)	0.301 (0.50)
Foreign dyad	-0.135 (0.34)	0.320* (0.14)	0.286 (0.24)	-0.437 (0.43)	0.340* (0.15)	0.239 (0.26)	2.54 (1.50)	-0.223 (0.52)	1.574* (0.79)
Family dyad	0.196 (0.28)	1.167*** (0.13)	1.066*** (0.22)				1.672 (1.57)	-0.637 (0.75)	1.343 (0.82)
Prior joined experience dyad	-0.662*** (0.20)	1.027*** (0.08)	0.525*** (0.16)				0.574 (0.54)	1.086*** (0.17)	1.368*** (0.36)
Average education year dyad	0.042 (0.07)	-0.048** (0.02)	-0.021 (0.04)	0.034 (0.09)	-0.069*** (0.02)	-0.043 (0.04)	0.555* (0.27)	0.037 (0.05)	0.256** (0.09)
Education year difference dyad	0.015 (0.05)	-0.156*** (0.03)	-0.102 (0.06)	0.029 (0.06)	-0.191*** (0.03)	-0.132* (0.07)	0.267 (0.17)	0.029 (0.07)	0.515** (0.16)
1 NVT member with college degree	0.300 (0.18)	0.152* (0.08)	0.444** (0.14)	0.245 (0.22)	0.255** (0.08)	0.578*** (0.16)	-1.755 (0.92)	-0.368 (0.20)	-2.065*** (0.52)
1 NVT member with technical education	-0.259 (0.18)	0.202** (0.07)	-0.207 (0.15)	-0.334 (0.22)	0.225** (0.08)	-0.243 (0.17)	-0.495 (0.65)	0.097 (0.19)	-0.313 (0.37)
1 NVT member with business education	-0.747*** (0.18)	0.266*** (0.07)	-0.538*** (0.15)	-0.923*** (0.22)	0.265*** (0.07)	-0.629*** (0.18)	-0.015 (0.63)	-0.425* (0.17)	-0.333 (0.35)
College degree dyad	-1.311*** (0.36)	0.990*** (0.14)	0.087 (0.34)	-1.420*** (0.41)	1.201*** (0.15)	0.173 (0.38)	-4.996*** (1.30)	-0.551 (0.31)	-3.240*** (0.85)
Technical/engineering education dyad	-0.005 (0.28)	0.566*** (0.11)	0.448** (0.20)	-0.05 (0.33)	0.386** (0.13)	0.381 (0.23)	1.143 (0.95)	0.893*** (0.25)	0.199 (0.51)
Business/administration dyad	-0.808* (0.39)	0.356* (0.14)	-0.461 (0.30)	-1.031 (0.54)	0.499** (0.15)	-0.581 (0.40)	-1.499 (0.95)	-0.283 (0.27)	-1.221* (0.62)
1 NVT member present at end	0.479* (0.19)	-0.293*** (0.08)	0.262 (0.14)	0.640** (0.24)	-0.216* (0.09)	0.445** (0.15)	0.318 (1.18)	-1.345*** (0.32)	-1.324* (0.64)
1 NVT member present at start	-0.009 (0.16)	0.194** (0.07)	0.158 (0.13)	-0.033 (0.18)	0.242*** (0.07)	0.169 (0.14)	-0.205 (0.63)	0.266 (0.17)	0.056 (0.42)
End dyad	0.088 (0.16)	1.333*** (0.06)	1.314*** (0.12)	0.14 (0.19)	1.577*** (0.07)	1.528*** (0.13)	-1.085 (0.61)	1.409*** (0.19)	0.148 (0.40)
Start dyad	-0.293 (0.21)	-0.057 (0.09)	-0.347* (0.17)	0.127 (0.24)	-0.005 (0.11)	-0.022 (0.17)	-1.914* (0.85)	-0.277 (0.24)	-1.082* (0.54)
Founder dyad	0.389* (0.16)	0.223** (0.07)	0.592*** (0.13)	0.355 (0.19)	0.282*** (0.08)	0.586*** (0.14)	1.379* (0.57)	0.245 (0.19)	1.153** (0.37)
Copenhagen	1.114*** (0.18)	-0.265*** (0.06)	0.691*** (0.10)	1.541*** (0.22)	-0.279*** (0.07)	0.803*** (0.12)	-0.674 (0.68)	1.084*** (0.18)	1.007* (0.47)
Family firm	0.786*** (0.15)	-0.175* (0.07)	0.667*** (0.12)	1.026*** (0.18)	-0.184* (0.08)	0.830*** (0.12)	2.074 (1.68)	0.131 (0.36)	0.293 (1.10)
Last-year turnover (10.000 DKK)	-0.001 (0.00)	0.004*** (0.00)	0.002** (0.00)	0 (0.00)	0.004*** (0.00)	0.002** (0.00)	0.033*** (0.01)	-0.009*** (0.00)	0.021*** (0.00)
Constant	-1.069 (0.55)	-4.679*** (0.22)	-5.298*** (0.39)	-2.331*** (0.64)	-4.758*** (0.25)	-6.173*** (0.45)	-1.498 (2.38)	-5.862*** (0.63)	-5.114*** (1.33)
Year dummies	yes	yes	yes	yes	yes	yes	yes	yes	yes
Startup size dummies	yes	yes	yes	yes	yes	yes	yes	yes	yes
Industry dummies	yes	yes	yes	yes	yes	yes	yes	yes	yes
firm age dummies	yes	yes	yes	yes	yes	yes	yes	yes	yes
Pseudo R2	0.210	0.169	0.267	0.267	0.179	0.553	0.320		
Log Likelihood	-1085.246	-9496.803	-821.391	-821.391	-7854.759	-99.865	-1227.852		
N	2,851	36,404	2,316	2,316	33,428	443	4,456		

significance levels ***<0.01; **<0.05; *0.10

Chapter 5. Background paper: Open for entrepreneurship: How open innovation can foster new venture creation¹⁰

Abstract

This paper explores how an open approach to new venture creation – purposefully managing knowledge flows across the venture’s organizational boundary – can be beneficial for start-up entrepreneurs. Our inductive case study, of both failure and success, identifies the key attributes of this open approach and how they affect start-ups’ short-term survival. We find that ecosystem collaboration, user involvement and an open environment directly influence new venture survival, and that their effects were moderated by the entrepreneurs’ open mindset. These findings carry a number of implications for entrepreneurship and innovation research and practice, providing some attention points for researchers, entrepreneurs, investors and policy makers interested in developing successful new ventures.

¹⁰ This paper, co-authored with Marcel Bogers, has been published in *Creativity and Innovation Management Journal* in 2015

5.1 Introduction

Venture creation is an important topic in entrepreneurship research (Shook, Priem & McGee, 2003). New firms are key drivers of economic development and industry evolution (Schumpeter, 1934). They are also essential job creators and competition facilitators (Birch, 1987). Technology start-ups are an important source of innovation and wealth creation and have thus become an important area of research (Shane & Venkataraman, 2003; Gruber, MacMillan & Thompson, 2008; Beckman et al., 2012). However, a large proportion of new firms fail quickly (Phillips & Kirchhoff, 1989; Dahl & Reichstein, 2007), and few grow to medium size (Kirchhoff, Linton & Walsh, 2013). A variety of factors, such as size, access to resources and the age of the new venture, have been suggested as determinants of the survival and success of new firms (Phillips & Kirchhoff, 1989; Klepper, 2002; Shane, 2003; Dahl & Reichstein, 2007). One of the factors suggested as being crucial to new venture success is openness to external knowledge sources, the importance of which is driven by the liabilities of smallness. The increased costs of research and development (R&D) and lack of resources have made open innovation increasingly important for researchers, practitioners and policy makers (Chesbrough, 2003; Dahlander & Gann, 2010; de Jong, Kalvet & Vanhaverbeke, 2010). Open innovation implies leveraging external knowledge and commercialization opportunities by managing the flows of innovation-related knowledge and technologies across corporate boundaries (Chesbrough & Bogers, 2014; West & Bogers, 2014). While the extant research has explored some of the implied benefits (and costs) of open innovation in general and for entrepreneurship in particular, the exact mechanisms by which openness benefits entrepreneurs are not yet fully understood. Moreover, while some determinants have been identified, a holistic view of how different openness factors jointly determine the likely success of new ventures has yet to be proposed. We address this research gap by investigating how openness to external knowledge sources can facilitate successful new venture creation. We explore how an open innovation approach can sustain start-ups by addressing the following research questions: What are the key attributes of an open

approach to new venture creation, and how do they affect a start-up's short-term survival? We investigate these questions through an exploratory multiple case study that sheds light on the advantages of open innovation for start-ups.

5.2 Background

Virtues and Challenges of Entrepreneurial Start-ups

Entrepreneurship, the creation of new wealth through innovative activities, plays an important role in the development and commercialization of new technologies (Drucker, 1985; Dollinger, 1994). Entrepreneurs create value by leveraging innovation to exploit new opportunities and create new product market domains (Miles, 2005). The term 'start-up' implies that a venture is new and may be seeking to create a new market. Since new ventures introduce new products or services that overturn the positions of incumbent firms, they are often considered the sources of 'gales of creative destruction' (Criscuolo, Nicolaou & Salter, 2012). They are also assumed to be more innovative than established firms (Bhide, 2000; Shane, 2008). Since start-ups are pivotal for job generation and economic growth, they are becoming an increasingly important part of the economic system (Reynolds & White, 1997). However, new ventures have both limited resources and numerous investment needs, including R&D, organization building and market development. How to allocate these limited resources is perhaps an entrepreneur's most critical decision.

Although entrepreneurs may be technically familiar with their own field, their technical focus may have a negative effect on the managerial skills necessary to run a successful business (Teece, 1986). Regardless of whether these owner entrepreneurs possess adequate skills, they are often responsible for all facets of firm operation (McGregor & Gomes, 1999), including general, financial, human resource and production management (Almeida & Fernando, 2008). A lack of knowledge of how to identify and exploit opportunities may also pose a challenge to entrepreneurs' decision making (Alvarez & Barney, 2010).

The Openness Advantage for Entrepreneurial Start-ups

Given the resource-constrained context, entrepreneurial growth is dependent on a combination of internal knowledge and external resources (Eisenhardt & Schoonhoven, 1996; Presutti, Boari & Majocchi, 2011). Diverse external knowledge-sourcing relationships are an important determinant of entrepreneurs' ability to identify more (and more varied) market opportunities (Gruber, MacMillan & Thompson, 2013), implying that entrepreneurs need to develop business models that allow for external sources of knowledge to flow into the new venture. Such openness as a way to accelerate internal innovation activities has attracted increasing attention in both research and practice (Chesbrough & Bogers, 2014; West & Bogers, 2014). Moving beyond the individual company-level perspective, openness to external knowledge sources is also reflected more generally in the larger innovation ecosystem, network, cluster and institutional context (Powell, Koput & Smith-Doerr, 1996; Dahl & Pedersen, 2004; Adner, 2006). In fact, entrepreneurs' new venture success can be significantly challenged by the innovation ecosystem in which it is embedded (Nambisan & Baron, 2013). However, while entrepreneurs in particular, and small and medium-sized companies in general, stand to benefit significantly from external sources of innovation, this topic has not received much attention in the open innovation literature (van de Vrande et al., 2009; Chesbrough & Bogers, 2014). New ventures' acquisition and exploration of external knowledge depends on issues such as the frequency of interactions with external partners (Harms, Konrad & Schwarz, 2009; Presutti, Boari & Majocchi, 2011) and the general network embeddedness and knowledge spillovers that the venture can capture in developing its business model (Greve & Salaff, 2003; Gilbert, McDougall & Audretsch, 2008; van de Vrande et al., 2009; Chesbrough & Bogers, 2014). At the same time, new ventures must consider cost increasing effects and decreasing returns (Laursen & Salter, 2006; Faems et al., 2010), while considering how to manage inflows of new ideas and intellectual property when looking for variety and diversity in external knowledge acquisition (Chesbrough, 2003; Bogers, Bekkers & Granstrand, 2012; Gruber, MacMillan & Thompson, 2013). Many factors can affect

how openness to external sources fosters successful new venture creation, although the specific attributes and relations are not fully understood.

5.3 Research Method

Case Study

Given the state of the literature and the need for a holistic approach to understanding how an open approach to new venture creation influences a start-up's short-term survival, we conducted an exploratory and inductive case study (Eisenhardt, 1989; Yin, 2009). We build on two cases involving iFabrikken, an entrepreneurship factory in Sønderborg, southern Denmark, where various start-ups can work as part of an entrepreneurship incubator. We adopt the replication method, in which the cases are selected so that they predict (a) similar results (literal replication) or (b) contrasting results (theoretical replication), which will lead to the development of a rich theoretical framework (Yin, 2009). In developing the design of the case study, we conducted an extensive pilot study with eight preliminary interviews.

Data Collection

We collected data from three sources. First, interviews were conducted during the first half of 2013. In addition, non-participant observation and written documentation served as complementary data sources. As part of a preliminary pilot study, we conducted eight semi-structured interviews with the start-ups in southern Denmark (see Table 1). The interviews took place in iFabrikken and at the university where the research took place. These preliminary interviews helped us to select two appropriate cases for this study. The main selection criteria for the two central cases in our study were the characteristics of the cases of success, survival and failure in the market. The first case, eholms, was considered a successful case that had substantial growth in the local and international markets. The second case, Stenbaek, failed. Its founder then developed a new concept that he had not yet commercialized and tried to find a way to survive in the market following the previous failure. These two cases were appropriate for contrasting and comparing

different degrees of progress in releasing a product/service to the market, survival and failure. The main themes discussed in the semi-structured interviews were the vital challenges and barriers for the company's survival, the mechanisms employed to overcome these challenges and how open innovation mechanisms influenced this process. For the selected cases, we conducted two semi-structured interviews and three informal conversations with the founders of these two companies. The semi-structured interviews lasted one hour, and the informal meetings each lasted 30 minutes on average; the interviews were all audio-recorded and transcribed. The transcripts were complemented with notes about the non-recorded aspects of the interviews as soon as each interview finished. We collected the documentation data in the form of information gathered from the websites, contents of e-mails and the standardization protocols. These data are related to the companies' strategies, partners and product/service. In addition, direct, nonparticipant observations of the entrepreneurs' activities, meetings and interactions at iFabrikken were used as a data source. These observations occurred three times in March and April 2013. During each observation, we monitored the networking aspects of the startups to understand the effect of the environment (i.e., iFabrikken) on the start-ups' way of doing work. We constructed a narrative of the findings using a combination of the interviews, documents and observations. We chose eholms as a case of success because this start-up grew quickly in the short time between its inception in 2010 and the study period, and made significant progress in commercializing the product into local and international markets within less than two years. The other case was chosen as a case of failure, as its first business failed (in 2010), and it was investing in a new business concept (2012), which had not yet been commercialized.

Table 1: Overview of Start-Ups Interviewed in Preliminary Pilot Study

Start-up	Age (years)	Domain	Number of employees	Situation in the market	Collaboration with iFabrikken
eholms	2.5	Product, technology based	4	Commercialized the product, growth in selling	Yes
Stenbaek	2.5	Service, technology based	1	Failed (Internet advertisement) Not commercialized (Mobile platform)	No Yes (Mobile platform)
FYDI	3	Product, technology based	7	Not commercialized	No
InnoPlus	2.5	Product, technology based	3	Not commercialized	No
SJService	3	Product, technology based	2	Not commercialized	Yes
U&I Marketing	1	Service	2	Giving the service to the small number of customers	Yes
Lifedrone	3	Product, technology based	1	Not commercialized	Yes
Sanse og Motorikhus	1	Service	1	Not commercialized	Yes

Data Analysis

Data analysis began with writing the case stories (Eisenhardt, 1989; Langley, 1999). First, we transcribed all interviews. We entered the data into chronologically ordered narratives. The observations and documents were used as secondary to the case stories. Next, we grouped the quotes and observations into emerging themes. During this process, a number of chronologic moments emerged that corresponded to the progress milestones for both start-ups, from generating an idea to commercializing the product/service. Within the start-ups' development, we investigated the pivotal challenges and ways of overcoming them. Observations and document information were examined and matched. Then, we began the cross-case analysis, in which we identified key similarities and differences between the cases, using theoretical and literal replication as the basis (Yin, 2009). We performed the comparison using all sources of data and identified the main mechanisms affecting the start-ups' survival

challenges. While external validity was addressed through the case selection (e.g., having cases of both success and failure), construct validity was established by using the general structure of questions for the initial exploratory interview. Furthermore, it was made explicit how certain situations caused specific results in each case (establishing the chain of evidence). Reliability was addressed by establishing a case study protocol for the interviews and by using different sources of information (i.e., documents, interviews and observations). To minimize the biases associated with data collection, all notes and reflections were written during or immediately after each interview session.

5.4 Findings

Case Descriptions

The successful case, eholms, was established in October 2010 by two private founders. At the time of the study, four people were working in the company – the two founders and two employees. The idea behind eholms was to design, develop and manufacture slim magnetic wall mounts for flat screens. They started from the local stores in southern Denmark and then expanded to Germany, followed by Sweden, Norway, the Netherlands, Italy, Spain, France and Turkey. The second case, Stenbaek, experienced an initial failure and was still surviving while implementing its new business concept. It was set up in October 2010 and had one founder who was still working on his own. Stenbaek's business was commercials and banner advertisements on the Internet. This business did not go well, and the founder changed his business to a new concept. The new idea was to develop a new application for a mobile platform that would facilitate searches for local businesses. The development of the new concept started in December 2012. The cases were analysed by looking at the ways in which the two start-ups had developed and used the key attributes of open innovation to survive in the market. On a very general level, our analysis initially highlighted the process (and related challenges) that the entrepreneurs went through from the start (e.g., investment and lack of market knowledge), to market entrance (e.g., customers' needs and capacity), to

internationalization (e.g., commercialization), to mass production (e.g., lack of resources), to location (e.g., lack of networking). On this basis, our subsequent analysis revealed a set of main concepts that drove the new ventures' short-term survival (see Figure 1 for a visual representation of the emergent framework).

Engaging Collaboration in the Ecosystem

Eholms' founder made a prototype in 2009, after which he lacked resources such as funding and market knowledge, which thus needed to be sourced externally. He stated that, after meeting a local investor and entrepreneur, 'He found it a good idea and we made a partnership with each other. He is the investor at the beginning.' The founder was working for the investor, who was well known in the area and managed some local restaurants and tourism centres. Knowing this, he shared his idea and showed him the first prototype. From his market knowledge, the investor found the idea valuable, and he decided to invest in the product. Moreover, they pursued a wide range of collaborative activities with different providers such as making connections with different partners through conferences. Stenbaek's founder, who had an IT background, was working on his first business idea for two years on his own. He already had expertise in programming, so he started selftraining to enhance his capability to start his own business. For example, he tried to gain some practical knowledge of internet advertising. When starting the business, he did not find it necessary to seek help or collaborate with more skilled people in the market. Nor did he find it necessary to collaborate with others to invest or acquire the knowledge he needed to start the business. However, he eventually faced so many different problems that his business failed and lost all the customers that had been acquired in a short time. However, in the new business, he was trying to build collaborative relationships to compensate for his weakness in the market dimension. These examples show that entrepreneurs find opportunities through unique resources, such as personal contacts (Baron, 2006). Leveraging external sources of knowledge through collaboration could be one of these unique resources for opportunity recognition. These cases show that technological expertise needs to be complemented by market knowledge, which may have to come from outside the

start-up and thus require complementary knowledge. Collaboration helps the new venture to pursue innovativeness through the sharing of ideas, knowledge, expertise and opportunities (Ketchen, Ireland & Snow, 2007). To purposively generate knowledge flows into the new venture, supporting its business model (Chesbrough & Bogers, 2014), the venture must collaborate with various partners in its value network or ecosystem (Bogers & West, 2012; Gruber, MacMillan & Thompson, 2013; Nambisan & Baron, 2013). We thus propose the following:

Proposition 1: New ventures that collaborate with various partners in their ecosystem are more likely to overcome the survival challenges of resource constraints and knowledge absence and are consequently more likely to survive in the market than those that do not engage in such collaboration.

Enabling User Involvement

For eholms, market entry occurred through a local store, with six products in the shop used to observe the market reaction, receive feedback from the store and hear customers' ideas about the product. This close relationship with potential users, including end users and intermediate customers (Bogers, Afuah & Bastian, 2010), helped eholms make some progress, as they received 10 more orders in a couple of weeks. Enabling user involvement helped to not only improve the quality of the product but also attract customers. In Stenbaek's first business, the founder thought he knew the needs of the market well enough. He had no contact nor pursued collaboration with the final users or customers. Clearly, he learned from this experience: 'I have lost some customers, because they say, "I don't know what you're talking about, I don't know what I'm buying".' He continued: 'From the first experience, I've realized I just need to go to the customer and try to explain and then get feedback: "Is this understandable, or do I need something else?" ' These cases show that user involvement helped to obtain more information about the market situation, the customers' reaction to the new concept, and the market capacity through being close to the users, in line with recent notions of 'customer development' (Blank, 2013) and the 'lean startup' (Reis, 2011) as well as the earlier literature on markets and customer orientation (Narver & Slater, 1990; Gatignon &

Xuereb, 1997). Firms that get users engaged in transferring their inputs will also access the user knowledge embedded in these inputs, which may relate to both user needs and solutions (von Hippel, 2005; Bogers, Afuah & Bastian, 2010). As the analysis of the cases shows, a close relationship with the user (both intermediate and end-users) and the constant collection of user feedback play a pivotal role in overcoming the main survival challenges, particularly commercialization. Our analysis shows that the intermediate and end-users can both enhance the innovation capabilities of the new ventures. We thus propose the following:

Proposition 2: New ventures that enable user involvement are more likely to bring a successful product/service to the market, and they are consequently more likely to survive in the market than those that do not enable user involvement.

Locating in an Open Environment

Eholms was located in iFabrikken, a local entrepreneurship incubator, which allowed the founder to engage with a local community. He had different brainstorming meetings with other entrepreneurs, who suggested new ideas and solutions. By working in such a place, he not only saved money (on the location), but also took advantage of the co-operative knowledge and communication embedded in close relationships with other partners. The physical space configuration facilitates co-ordination and information sharing and influences behaviour. A closed workspace can be transformed into an open space to encourage communication, which is critical in an innovative process (Allen & Henn, 2007). Therefore, this location provides an open environment for entrepreneurs to network, obtain new ideas and exchange experiences. Working closely with an associate not only facilitates communication but also leads to the exchange of knowledge and expertise, which can enrich a partnership with new solutions and new ideas. The repetitive benefits of problem solving increase levels of trust and mutual understanding among participants. Eholms' founder mentioned that 'The CEO of the iFabrikken guides us as a mentor on how to find customers and how to build partnership with other customers.' Accordingly, shared problem solving in an open environment is regarded as a factor in the new venture's success. In his first

business, Stenbaek's founder was sitting alone, as he thought there was no need to use an open space. As he stated in the interview, however, this strategy did not work, and he lost all of his customers quickly, leading to business failure. Subsequently, he joined iFabrikken, where he found new networks, used the market analysis guidance of other entrepreneurs, and had an opportunity to present the new concept to multiple industry stakeholders. He obtained their feedback and found a number of potential partners and customers. As he emphasized, 'I've been trying to build a network; also, coming down here just sitting and talking and knowing what all the people are doing and, again, knowing a little about my weak points – and that is selling. I don't have an education in selling and not much training in that. Of course I'm experienced now, but marketing and training or selling is not my strongest point. So, I am looking around a little to see if there is somebody with whom we could form a joined venture or partnership.' Proximity has a strong effect on communication during an innovation process, as people are more likely to know and understand each other and thereby better co-ordinate their work. Moreover, physical proximity to those with knowledge of developments inside or outside an organization increases one's likelihood of staying informed about those developments (Allen & Henn, 2007). An open environment promotes conversation between different disciplines, which can enable a better leveraging of external sources of knowledge (Bogers & Lhuillery, 2011; Gruber, MacMillan & Thompson, 2013; West & Bogers, 2014). The nature of the workspace also affects organizational performance (Sailer & McCulloh, 2012). Both organizational structure and space influence the interaction patterns among entrepreneurs that are central to the innovation process, while organizational design affects the interface between the organization and the environment in which it operates (Sarasvathy et al., 2008). We thus propose the following:

Proposition 3: New ventures that are located in an open environment are better able to tap into relevant external knowledge sources, and they are consequently more likely to survive in the market than those that do not work in such environment.

Moderating Role of the Entrepreneur's Mindset Based on the findings, we have so far proposed that ecosystem collaboration, user involvement and an open environment are conducive to new ventures' survival, as they positively affect opportunity recognition and commercialization (see Figure 1). Furthermore, our analysis has revealed another factor that does not directly affect new ventures' survival but rather acts as a moderating variable between ecosystem collaboration, user involvement and open environment, on the one hand, and new ventures' survival, on the other: we find that the entrepreneur's mindset moderates these relationships, in that an open mindset fosters the entrepreneur's opportunity recognition and commercialization, thus positively influencing the likelihood of new venture survival (if those direct effects are established). Stenbaek's founder was sure that his knowledge was sufficient for starting the business. He thought the required information would be acquired through self-study. In the next step, he entered the market and found a few customers who expressed interest in his product, although the overall interest declined quickly. He did not ask external parties to guide him in the right direction. By contrast, for his new business idea, he found it necessary to collaborate with people to develop the new business concept. This was an immediate result of a change in the founder's way of thinking about doing business. Eholms' venture development involved, from the beginning, collaboration with external partners, and the necessity of exploiting external knowledge is related to the founders' method of starting collaborations. The innovation culture for opening up firm boundaries can be shaped by management in pursuit of strategic goals (Herzog & Leker, 2010). More generally, organizational culture can be considered among the capabilities needed for value creation and capture in line with the business model (Zott, Amit & Massa, 2011; Afuah, 2014). Culture plays an important role in the use of external knowledge sources in this process – for example, as a factor in its integration (Herzog & Leker, 2010; Chesbrough & Bogers, 2014; West & Bogers, 2014). Individuals with an entrepreneurial mindset passionately seek new opportunities, pursuing the best ones with enormous discipline, and focusing on execution (McGrath & MacMillan, 2000). As a result, the entrepreneurs' mindset about collaborating with external parties helps them to survive in the market

(Ireland, Hitt & Sirmon, 2003). The open mindset does not in itself lead to new venture success; it does not generate or transfer any resources by itself. Rather, it increases the effectiveness of the entrepreneur's collaboration within the new venture's ecosystem. Similarly, merely having an ecosystem does not lead to success, but an open mindset will assist the entrepreneur in identifying valuable knowledge sources and recombining them into successful innovation (Gruber, MacMillan & Thompson, 2013; Nambisan & Baron, 2013; West and Bogers, 2014). We thus propose the following:

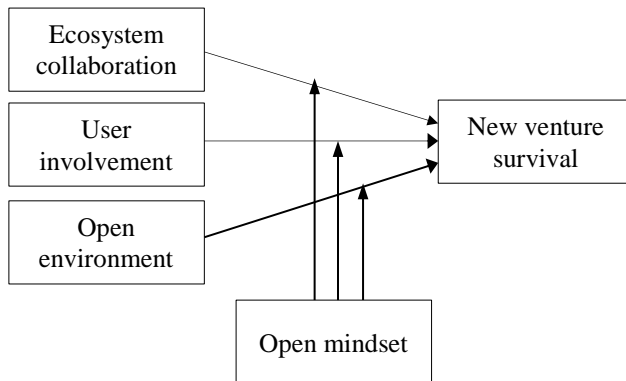
Proposition 4a: The entrepreneur's open mindset positively moderates the relationship between ecosystem collaboration and new venture survival.

In his first failure, the founder of Stenbaek lost all of his customers quickly. He confirmed that building a close relationship with the users is a vital factor in business success, as he found out, because such a relationship informs entrepreneurs of their customers' needs and of the market capacity for new ideas, and makes their ideas understandable to the users. As a result, the commercialization of the product/service will be implemented more effectively. Eholms's founder had a close relationship with the users, as he openly discussed his ideas with them and actively collected their feedback. This helped him to find new customers as well. Our observations and interviews show that the founders' way of thinking about user involvement and the role of the users as sources of innovation facilitates product/service development and eases market entry (Bogers, Afuah & Bastian, 2010). Believing in the role of customers in product/service development could be vital for new venture survival. Starting a conversation with potential customers may lead to positive cash flow. Moreover, an open mindset assists in identifying and engaging the right users as well as executing and capitalizing on the established engagement, turning into real value for the new venture (McGrath & MacMillan, 2000; Zott, Amit & Massa, 2011). We thus propose the following:

Proposition 4b: The entrepreneur's open mindset positively moderates the relationship between user involvement and new venture survival.

Stenbaek’s founder found it necessary to obtain the required knowledge and information for the new idea from external people and organizations. He located his office in iFabrikken in order to be close to other stakeholders and use the guidance of other entrepreneurs. He recognized the vital role of an open space in the development of his new business concept (Allen & Henn, 2007). It is also evident that eholms’ founder participated in conferences and located his business in an open space because doing so is important for an organization that wants to communicate and exploit knowledge (Allen & Henn, 2007). Thus, a successful innovation process requires that the organization be able to access, maintain and transfer knowledge from person to person (Allen, 1977; Allen & Henn, 2007). Our observations show that working in an open space is especially effective if the entrepreneur has an open mindset, creates a trust-based relationship, and turns potential connections into actual value-generating partnerships (Ketchen, Ireland & Snow, 2007; Afuah, 2014). On the one hand, the wide range of inputs provides the start-ups with a higher chance of obtaining more stakeholders and opportunities (Gruber, MacMillan & Thompson, 2008, 2013; Alvarez & Barney, 2010). On the other, engaging in such an environment encourages the start-ups to participate in debates and interactions with others, which may help them improve the quality of their product/service (McGrath & MacMillan, 2000; West & Bogers, 2014). We thus propose the following: Proposition 4c: The entrepreneur’s open mindset positively moderates the relationship between an open environment and new venture survival.

Figure1. Framework for the Open Innovation Advantage for New Ventures



5.5 Concluding Discussion

In this paper, we presented an exploratory case study to show that new venture survival is influenced by (1) ecosystem collaboration, (2) user involvement and (3) open environment, and that this relationship is moderated by (4) the entrepreneur's open mindset.

Implications for Entrepreneurship and Innovation Research

Our study is based on research conducted in southern Denmark with a limited number of cases. One worthwhile extension of this study would be to expand it to different regions and other settings. It would also be valuable to strengthen the empirical validity of this work by considering a larger number of cases and testing some of the propositions with a larger dataset. A longitudinal research design may be particularly useful for obtaining a more detailed insight into some of the dynamics and contingencies of our framework. Our study adds to the emerging open innovation literature, in which research in the context of entrepreneurship has been scarce (Chesbrough & Bogers, 2014). The research has been based on opportunity seeking (Gruber,

MacMillan & Thompson, 2008, 2013), alliance formation and strategies (Colombo, Grilli & Piva, 2006; Neyens, Faems & Sels, 2010), and open source software (Gruber & Henkel, 2006), while our study focused on the effect of open innovation on new venture survival. We build on the fact that new ventures face pivotal challenges such as capital resource constraints and a lack of market knowledge as well as commercialization and networking limitations. The case study has shown that an open approach to entrepreneurship helped the founders overcome some of these challenges; future research should further explore the internal and external mechanisms that enable or prevent these processes (Ketchen, Ireland & Snow, 2007; West & Bogers, 2014) in line with the venture's business model (Zott, Amit & Massa, 2011; Afuah, 2014; Chesbrough & Bogers, 2014). More generally, our findings show that the basic themes of entrepreneurship theory, such as challenges and opportunities (Deeds, 2001; Yli-Renko, Autio & Sapienza, 2001), must be

explored in more depth. Understanding the main barriers as well as the strengths of startups helps new venture management gain more perspective on market entry. Despite the emphasis on innovative start-ups, researchers must pay more attention to the fact that not all highly innovative start-ups will have the same future (Kirchhoff, Linton & Walsh, 2013).

Implications for Entrepreneurship and Innovation Practice

The results of this study reveal that ecosystem collaboration, user involvement and open environment are three main factors in startups' market survival. Our analysis of two specific cases showed that collaboration enables a start-up to overcome the internal challenges flowing from a lack of market knowledge and capital constraints. This happens through collaboration with external parties, including people and organizations, based on trust and commitment (Ketchen, Ireland & Snow, 2007). A collaborative approach is sometimes essential for innovators and entrepreneurs to capture a significant share of the economic value (Teece, 1986). User involvement, the close relationship between entrepreneurs and users (i.e., intermediate users and end-users), is the second element of an effective open innovation model (Bogers, Afuah & Bastian, 2010). A significant component of innovation might be traced back to users (von Hippel, 2005; Shah & Tripsas, 2007). One way of innovating is involving lead users and collecting information about their needs. Producers can benefit from users to develop breakthrough products, which tend to have higher performance than other innovations (von Hippel, 2005). User involvement can help the entrepreneur build a strong relationship with users and collect their feedback regularly, thereby increasing the chances of successful exploitation of the innovative ideas, in line with the recent notions of customer development (Blank, 2013) and the lean start-up (Reis, 2011). An open environment was found to be another mechanism that enables the start-up to enhance its networking skills and learn about stakeholders and the industry situation. Open office designs are adopted by many companies because of the reduced costs and their facilitation of communication and productivity (Boje, 1971; Pile, 1978; Allen & Henn, 2007). Employees who perceive their jobs as tedious may find the contact with other people stimulating

(Brennan, Chugh & Kline, 2002). Such an environment provides an opportunity for entrepreneurs to become closer, share ideas and obtain the knowledge and information needed for their work. The findings indicate that an open environment is the leveraging factor by which entrepreneurs may compensate for their smallness and lack of market power. Moreover, we found that the entrepreneurs' way of thinking affects what they may choose to use or what works from among the three openness variables. The entrepreneurial mindset directs the search for opportunities and the way those opportunities are exploited (Senges, 2007). Establishing an entrepreneurial mindset is essential to sustain the competitiveness of economic organizations (Neneh, 2012). It allows the entrepreneurs to establish new and valuable ideas (Thompson, 2004). The presence of an open culture within the startup's management would enhance the effect of ecosystem collaboration, user involvement and open environment on survival and thus has an indirect effect on the survival chances of the new venture. Entrepreneurs should have a plan for growth in order to increase their chances of survival (Phillips & Kirchoff, 1989); they will face many challenges. The results of this study may provide a clearer understanding of the survival barriers that should be taken into account when entering the market. The findings show that new ventures lack market and industry knowledge and face internal capital issues. In addition, they have difficulty connecting to external parties when entering the market and in exploiting their innovations and new ideas. They also lack networking skills, as they lack knowledge of the market, partners and stakeholders. In establishing relationships, tensions may occur depending on the type of connection, and the entrepreneur will need to balance co-operation and competition (Nalebuff & Brandenburger, 1997; Bouncken et al., 2015) and consider how to manage knowledge flows across boundaries (van de Vrande et al., 2009; Dahlander & Gann, 2010) and how to protect intellectual property (Chesbrough, 2003; Bogers, Bekkers & Granstrand, 2012). For investors in new ventures, the findings reveal that an open mindset while entering the market may moderate the relationship and impacts of collaboration. Since start-ups are small and new to the market, it may be vital that they have a close relationship with outside parties. This depends highly on the founders' way of thinking. Finally, more generally, policy

makers should consider which investments are more likely to lead to new venture survival. Our results indicate that direct investments are not a sufficient condition, and that facilitating open innovation among start-ups may help increase their survival chances (de Jong, Kalvet & Vanhaverbeke, 2010; Chesbrough & Bogers, 2014).

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