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Entrepreneurial motivation:
The role of the opportunity, team, and uncertainty

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III List of Tables

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V List of Abbreviations

AI	Artificial Intelligence
AMJ	Academy of Management Journal
BEST	Building Entrepreneurial Success Teams
C	Contacted
CEO	Chief executive officer
CI	Confidence interval
Diff.	Difference
EKG	Erfolgsfaktor Unternehmenskultur in Gründungen
Entrepre.	Entrepreneurial
Entrepreneur. / Entrepreneurial self-eff.	Entrepreneurial self-efficacy
ERI	Entrepreneurship Research Institute
Est	Estimate
Exp.	Experience
FM	Full model
FTE	Full-time equivalent
H	Hypothesis
Habil.	Habilitation
IF	Impact factor
IM	Interaction model
Int.	Interviews
IT	Information technology
IV	Independent variable
JBV	Journal of Business Venturing
LL	Lower limited
LQ	Long questionnaire
MTZ	Münchner Technologiezentrum
n/a	Not available

Opport. / Opportunity b.	Opportunity beliefs
ORM	Organizational Research Methods
P	Participated
Perf.	Performance
PR	Participation rate
PSED	Panel Study of Entrepreneurial Dynamics
Res.	Responses
RoI	Return on investment
RR	Registration rate
RR	Response rate
SD	Standard deviation
SE	Standard error
SMJ	Strategic Management Journal
SQ	Short questionnaire
TUM	Technical University of Munich
UL	Upper limit
YMCA	Young Men's Christian Association

VI Abstract

This dissertation examines the interplay of entrepreneurs' perception of the opportunity, team, and uncertainty in affecting entrepreneurs' motivation. It addresses important gaps in prior research concerning the team's relevance next to the opportunity, the opportunity's relevance post venture foundation, and when and which type of uncertainty inhibits or promotes entrepreneurs' motivation. In particular, uncertainty stemming from the venture (i.e., task uncertainty or unknowingness what to do next), team (i.e., lack of shared venture experience), and individual (i.e., lack of entrepreneurial experience) are examined. To study the interplay, a sample of 276 entrepreneurs active in 127 teams in Germany is used. Results show that both the opportunity and team are important for entrepreneurs' motivation. However, this relationship is contingent on the type of uncertainty. Specifically, the more uncertainty entrepreneurs perceive at the team and individual level, the more is their team relevant for their motivation compared to when team- or individual-level uncertainty is low. However, the more team- or individual-level uncertainty entrepreneurs perceive, the less is the opportunity relevant for their motivation compared to when team- or individual-level uncertainty is low. Surprisingly, results show a tendency that the opportunity becomes more relevant for entrepreneurs' motivation the less entrepreneurs know what to do next or, in other words, perceive more venture uncertainty. However, there is no such finding concerning the team. Findings suggest that uncertainty can shape how entrepreneurs' opportunity and team beliefs translate into motivation in a facilitating or inhibiting role. Further, the findings suggest that the team is more important for entrepreneurs the less experience they have in working together with their team or as entrepreneurs. These findings carry important implications for practitioners and academics interested in entrepreneurial motivation and cognition, uncertainty, shared experience, and entrepreneurial experience.

Keywords: Entrepreneurial motivation, entrepreneurial cognition, uncertainty, entrepreneurial experience, expectancy theory, trust, opportunity beliefs, task uncertainty, shared venture experience, goal progress

VII Zusammenfassung

Diese Dissertation untersucht das Zusammenspiel der Wahrnehmungen von Gründenden in Hinblick auf ihre Geschäftsidee, das Team und Unsicherheit und deren Einfluss auf die Gründermotivation. Die Dissertation beleuchtet damit wichtige Forschungslücken hinsichtlich der Relevanz des Teams neben der Geschäftsidee, der Geschäftsidee nach der Gründung und wann bzw. welche Unsicherheitsart die Gründermotivation hemmt oder fördert. Insbesondere werden Unsicherheiten resultierend aus dem Unternehmen (d.h. Aufgabenunsicherheit oder Unwissen, was als nächstes zu tun ist), dem Team (d.h. mangelnde Teamerfahrung) und dem Individuum (d.h. mangelnde Gründungserfahrung) betrachtet. Grundlage der Analyse ist eine Stichprobe aus 276 Gründenden, die in 127 Teams in Deutschland aktiv sind. Die Ergebnisse zeigen, dass sowohl die Überzeugung von der Geschäftsidee als auch das Team für die Gründermotivation wichtig sind. Dieser Zusammenhang ist jedoch abhängig von der Unsicherheitsart. Je mehr Unsicherheit vom Team oder Individuum ausgeht, desto motivationsrelevanter ist das Team als unter vergleichsweise geringer Team- oder Individualunsicherheit. Allerdings zeigt sich, je mehr Unsicherheit vom Team oder Individuum ausgeht, desto weniger motivationsrelevant ist die Geschäftsidee im Vergleich zu geringer Team- oder Individualunsicherheit. Überraschenderweise deuten die Ergebnisse an, dass die Geschäftsidee jedoch umso motivationsrelevanter ist, je weniger die Gründenden wissen, was sie als nächstes tun sollen bzw. umso mehr Unsicherheit vom Unternehmen ausgeht. Eine solche Tendenz offenbart sich jedoch nicht für das Team. Die Ergebnisse deuten darauf hin, dass Unsicherheiten die Gründermotivation aus der Geschäftsidee und dem Team sowohl verstärken als auch hemmen können. Darüber hinaus deuten die Ergebnisse darauf hin, dass das Team umso wichtiger für Gründende ist, je weniger Team- oder Gründungserfahrung sie haben. Die Ergebnisse sind damit relevant für akademisch und praktisch Orientierte, die sich für Gründermotivation und -kognition, Unsicherheit, Teamerfahrung und Gründungserfahrung interessieren.

Schlagwörter: Gründermotivation, Gründerkognition, Unsicherheit, Gründungserfahrung, Valenz-Instrumentalitäts-Erwartungs-Theorie, Vertrauen, Überzeugung von der Geschäftsidee, Aufgabenunsicherheit, Teamerfahrung im Gründungsteam, Fortschritt

1 Introduction

> *"If you want to start a company, you have to work super hard. […] When my brother and I were starting our first company, instead of getting an apartment, we just rented a small office and we slept on the couch. We showered at the YMCA[1] and we were so hard-up that we only had one computer. The website was up during the day and I was coding it at night, seven days a week, all the time."* [2]
>
> − Elon Musk, 2014 University of South Carolina commencement speech

Intended as an advice to young graduates at the commencement ceremony, Elon Musk highlighted his first principle to successfully found a venture: hard work. While Elon Musk may be an extreme example of hard work in running two of his own ventures, namely, Tesla and SpaceX, at the same time (Yurieff, 2020), academics agree that founding a new venture usually requires hard work (Dimov, 2010; Edelman & Yli-Renko, 2010; Gatewood, Shaver, Powers, & Gartner, 2002; Hoang & Gimeno, 2010; Patzelt & Shepherd, 2011; Rauch, Fink, & Hatak, 2018). More so, entrepreneurs need to invest months or years of continued effort to establish a new venture (Davidsson & Gordon, 2009). A particular challenge of the entrepreneurial journey is a lack of resources (Zott & Huy, 2007), such as, financial resources (Winborg & Landström, 2001) and time (Roure & Maidique, 1986). Furthermore, when founding high tech ventures, entrepreneurs usually do not have all skills themselves making them reliant on support from team members (Gartner, 1985). There is also no guarantee that entrepreneurs will be successful in venturing (Shane & Venkataraman, 2000) and even though entrepreneurs may hold a strong belief in their idea, there is no blue print to realize the idea (Barreto, 2012; Hsieh, Nickerson, & Zenger, 2007). Thus, entrepreneurs need to be highly motivated over a prolonged time to establish a new venture.

[1] Young Men's Christian Association; this relates to the fitness-related facilities provided by the organization.
[2] Retrieved from https://youtu.be/e7Qh-vwpYH8 on 27.05.2020.

But what motivates entrepreneurs? How has research addressed this question, what do we know and what do we not know about entrepreneurial motivation? In the following chapter, I will elaborate on these aspects. Hereafter, I will summarize and highlight the gaps in research, specify respective research questions and discuss how they address current calls for research (Chapter 1.2). At the end of this introduction, I will provide an outlook of the thesis and how it is structured to advance research (Chapter 1.3).

1.1 Research on entrepreneurial motivation

Early studies on entrepreneurial motivation addressed the question why some are motivated to become an entrepreneur while others are not. These studies also represent the first studies in the modern field of entrepreneurship and they sought the answer in examining personal characteristics, i.e., traits, which should differentiate entrepreneurs from non-entrepreneurs (Carlsson et al., 2013). Academics found that it was entrepreneurs' need for achievement (McClelland, 1961), risk-taking propensity (Brockhaus, 1980), and tolerance for ambiguity (Schere, 1982), which distinguishes them from non-entrepreneurs. Yet, studies lacked a clear definition what entrepreneurship means leading to the agglomeration of findings on heterogeneous groups, such as, business owners, founders, and real estate brokers (Gartner, 1985). Concerns grew that not traits but entrepreneurial behavior should define entrepreneurs (Gartner, 1988; Shaver & Scott, 1992).

Also, empirical support linking traits to entrepreneurial behavior provided only mixed results. In their review of entrepreneurial motivation, Shane et al. (2003) summarized studies examining the traits need for achievement, risk taking propensity, tolerance for ambiguity, locus of control, and self-efficacy beliefs and noted they found consistent findings for self-efficacy only. More recently, Zhao et al. (2010) conducted a meta-analysis to understand the effect of the big five personality traits (i.e., conscientiousness, openness to experience, emotional stability, extraversion, agreeableness) and risk-taking propensity on entrepreneurial intentions and performance. Consolidating the insights of 60 studies, they argue that contractionary findings, which led to concluding mixed results in the work of Shane et al. (2003), are primarily due to "the lack of theoretically derived hypotheses and various research artifacts" (Zhao et al., 2010, p. 382). Following this claim, they find evidence for a positive and significant effect of all traits except agreeableness on entrepreneurial intentions and a positive and significant effect of all traits except agreeableness and risk taking propensity on entrepreneurial performance. However, after the concerns raised by Gartner (1988), the field had moved into a direction away

from studying traits and towards a focus on entrepreneurial behavior to explain entrepreneurship (Carlsson et al., 2013). This shift meant focusing on the situational context leading to the foundation of a venture. Notably, the opportunity received much attention as a corner stone of entrepreneurial behavior (McMullen & Shepherd, 2006) and has been positively linked to entrepreneurs' decision to enter entrepreneurship in multiple studies since then (Autio, Dahlander, & Frederiksen, 2013; Dimov, 2010; Dubard Barbosa, Fayolle, & Smith, 2019; Edelman & Yli-Renko, 2010; Gatewood et al., 2002; Laffineur, Dubard Barbosa, Fayolle, & Montmartin, 2019, forthcoming; Vilanova & Vitanova, 2020). Also, the resource endowment of entrepreneurial actors received attention and studies analyzed resources, such as, human capital (Cooper, Gimeno-Gascon, & Woo, 1994; Dickson, Solomon, & Weaver, 2008; Gimeno, Folta, Cooper, & Woo, 1997), cognitive abilities (Busenitz & Barney, 1997; Gaglio & Katz, 2001), social capital (Clark, Alvarez, & Barney, 2003; Davidsson & Honig, 2003; Yli-Renko, Autio, & Sapienza, 2001), and financial capital (Cooper et al., 1994; Holtz-Eakin, Joulfaian, & Rosen, 1994; Lee, Lee, & Pennings, 2001).

Many of these insights helped explain why some individuals pursue an entrepreneurial career while others do not. However, the entrepreneurial journey does not stop at venture foundation (Davidsson, 2005). Post venture foundation, entrepreneurs face challenges, such as, finding the right solution to the problem they tackle (Hsieh et al., 2007), responding to substantial changes in pivoting on their initial idea (McDonald & Gao, 2019, forthcoming), working effectively in a team (Jung, Vissa, & Pich, 2017) and dealing with role novelty (Hoang & Gimeno, 2010) and stress (Cardon & Patel, 2015). Rather than being a sprint, the entrepreneurial journey requires months or years of continued motivation for effort (Davidsson & Gordon, 2009) and some entrepreneurs eventually abandon efforts, i.e., their venture cannot be pursued anymore and fail (Cope, 2011). Based on these conditions, the question arises why some entrepreneurs are more motivated than others to sustain their efforts.

While the examination of entrepreneurs' continued motivation post venture foundation has found less attention than entrepreneurs' decision to enter the entrepreneurial journey, there is some evidence on influencing factors. For instance, entrepreneurs' traits like passion for bricolage (Stenholm & Renko, 2016) or desire to be rich (Morris, Miyasaki, Watters, & Coombes, 2006) have been positively linked to venture performance. Also, entrepreneurs' aspirations in terms of growth and/ or goal difficulty have been positively linked to venture performance (Baron, Mueller, & Wolfe, 2016b; Baum, Locke, & Smith, 2001; Moen, Heggeseth, & Lome, 2016). Further, entrepreneurs' psychological conditions have been shown

to affect entrepreneurs' motivation. For instance, Cacciotti et al. (2016) suggest that entrepreneurs' perceptions of internal cognitive evaluations (e.g., personal ability) and external situated social cues (e.g., financial security) affect whether fear of failure either translates into higher motivation as entrepreneurs are convinced more effort reduces the risk of failure or translates into lower motivation as every next step is expected to fail. Empirically, Burmeister-Lamp et al. (2012) find that entrepreneurs' regulatory focus, that is, whether entrepreneurs' aim is to prevent losses or to maximize gains, affects their effort decision. Also entrepreneurs' momentary situation, like, affect (Uy, Sun, & Foo, 2017) and sleep quality (Williamson, Battisti, Leatherbee, & Gish, 2019), has been shown to affect entrepreneurs' motivation.

Surprisingly, opportunity's relevance to entrepreneurs' motivation post venture foundation has – to the best of my knowledge – not been examined (Murnieks, Klotz, & Shepherd, 2020b). For one, this is surprising as entrepreneurs' opportunity beliefs have been extensively studied until the establishment of the venture as outlined above and it should remain relevant to entrepreneurs post venture foundation. Most ventures require years before generating revenues or generating profit (Davidsson & Gordon, 2009), which are milestones indicating that an opportunity for profit not only potentially exists, but indeed is existent and can be successfully exploited. Until these milestones are reached, the profit potential of the opportunity forms solely in entrepreneurs' beliefs as "entrepreneurial opportunities exist primarily because different members of society have different beliefs about the relative value of resources, given the potential to transform them into a different state" (Shane & Venkataraman, 2000, p. 220). Even after reaching these milestones, it might be that first revenues and profits serve the purpose of reducing risk and funding additional development stages (Schoonhoven, Eisenhardt, & Lyman, 1990) thereby resembling an intermediate stage of opportunity exploitation, which again means entrepreneurs are to some extent reliant on their opportunity beliefs. For another, this is surprising as similar constructs have been examined post venture foundation. For instance, Lowe and Ziedonis (2006) suggest that due to entrepreneurs' overconfidence or overoptimism[3] entrepreneurs invest more effort in realizing a project before terminating it compared to organizations. Entrepreneurs' overconfidence has also been used to explain non-rational or excess market entry (Camerer & Lovallo, 1999) and finds application in hubris theory explaining such entrance (Hayward, Shepherd, & Griffin, 2006).

[3] Following Moore and Healy (2008), the terms find mixed and inconsistent application in research, but generally refer to biased perceptions of the individual's (relative) performance or precision of individual's beliefs.

Thus, in this thesis, I seek to shed light on entrepreneurs' motivation in examining to what extent entrepreneurs' belief in the opportunity affects entrepreneurs' motivation post venture foundation.

Further, previous studies examining the opportunity—entrepreneurial actor nexus primarily focus on the solo entrepreneur neglecting the relevance of the team. In particular, when examining the relevance of the opportunity, authors commonly describe entrepreneurs' motivation as the result of the entrepreneurs' belief in the opportunity and/ or belief in personal capabilities (see Dimov, 2010; Dubard Barbosa et al., 2019; Edelman & Yli-Renko, 2010; Gatewood et al., 2002; Laffineur et al., 2019, forthcoming; McMullen & Shepherd, 2006; Renko, Kroeck, & Bullough, 2012; Vilanova & Vitanova, 2020). This focus on the solo entrepreneur is surprising for three reasons. First, academics agree that entrepreneurship is rather a social activity (Beckman, 2006; Cooney, 2005; Dimov, 2007; Klotz, Hmieleski, Bradley, & Busenitz, 2014; Ruef, Aldrich, & Carter, 2003) and new venture teams typically consist of two to three team members (see Breugst, Patzelt, & Shepherd, 2020, forthcoming; Ensley & Hmieleski, 2005; Ensley, Pearson, & Amason, 2002; Steffens, Terjesen, & Davidsson, 2012). Thus, it is important to consider the team for entrepreneurs' motivation. Second, evidence suggest that the team is indeed relevant for the success of the a new venture (Breugst et al., 2020, forthcoming; Breugst & Shepherd, 2017; Saud Khan, J. Breitenecker, & J. Schwarz, 2014; Schjoedt, Kraus, Schenkel, & Garrison, 2009; Talaulicar, Grundei, & Werder, 2005; Zheng, 2012). In particular high-technology ventures require more skills than the solo entrepreneur possesses (Gartner, 1985) making entrepreneurs dependent on their team to realize the venture. Also, the entrepreneurial journey is an 'emotional rollercoaster' (Cock, Denoo, & Clarysse, 2020), which can be arousing (Jennings, Edwards, Jennings, & Delbridge, 2015), but also frustrating or stressful (Cardon & Patel, 2015) by times, for instance, when receiving negative feedback about the current product or solution entrepreneurs develop (Domurath, Patzelt, & Liebl, 2020). While entrepreneurs may have capabilities to handle this rollercoaster, like, psychological capital (Hmieleski, Carr, & Baron, 2015) or coping mechanism (Uy, Foo, & Song, 2013), the team can be helpful in providing emotional support to entrepreneurs (Burtscher, Meyer, Jonas, Feese, & Tröster, 2018). Also, the team can be an immediate source of motivation (Zhu, Gardner, & Chen, 2018). This suggests that the team is instrumental to entrepreneurs in realizing the venture. Third, work explaining entrepreneurs' motivation resulting from the team has started to surface, for instance, work on team entrepreneurial passion by Cardon et al. (2017). Consistently, theories from organizational

psychology, such as, expectancy theory (Vroom, 1964) are capable to explain individuals' motivation stemming from the team (Hertel, Konradt, & Orlikowski, 2004; Hüffmeier et al., 2017). Thus, explaining and examining entrepreneurs' motivation from the team is theoretically possible, but for some reason has not sufficiently caught attention (for an exception, see Breugst et al., 2020, forthcoming).

Thus, in this thesis, I seek to shed light on entrepreneurs' motivation in examining to what extent entrepreneurs' belief in the team affects entrepreneurs' motivation post venture foundation.

Importantly, the entrepreneurial journey is shrouded in uncertainty (McMullen & Shepherd, 2006; Packard, Clark, & Klein, 2017) which affects entrepreneurs' cognitive processes (Rauch et al., 2018) and is, thus, important to entrepreneurs' motivation. While ample conceptualization and operationalization of uncertainty exist within entrepreneurship (McKelvie, Haynie, & Gustafsson, 2011), an array of studies examined its effect on entrepreneurial activity.

For instance, perceived uncertainty has been linked to reduced motivation and action (Meijer, Hekkert, & Koppenjan, 2007). Societies which are more comfortable with bearing uncertainty have been shown to predict higher level of entrepreneurial activity (Bogatyreva, Edelman, Manolova, Osiyevskyy, & Shirokova, 2019). Further, Edelman and Yli-Renko (2010) show that uncertainty (operationalized as dynamic market conditions) negatively affects entrepreneurs' venture creature effort mediated by its effect on the perceived market opportunity. Acting under uncertainty has also been related to negative outcomes for the individual, such as, stress (Bliese, Edwards, & Sonnentag, 2017), anxiety and depression (Caplan & Jones, 1975), and team conflict (Jung et al., 2017). Acting under such aversive conditions requires high levels of self-control and, consequently, has been shown to increase inaction (Blunt & Pychyl, 2000; Milgram, Marshevsky, & Sadeh, 1995). More distant, uncertainty affects the effectiveness to which experience, knowledge or information translate into willingness to invest capital (Wood & Pearson, 2009) or into firm performance (Hmieleski et al., 2015). These findings suggest that uncertainty inhibits entrepreneurs' motivation.

Yet, uncertainty can also promote entrepreneurs' motivation. Following the seminal work of Knight (1921), uncertainty indicates profit. This means the more uncertainty entrepreneurs perceive, the more profit and potential motivation entrepreneurs perceive. Empirically, Wood and Pearson (2009) find in a conjoint experiment that entrepreneurs are more motivated to invest in an opportunity the more uncertainty they perceive – a result opposite to what they hypothesized. Uncertainty offers the potential to increase performance by deviating from

historic business strategies (Hmieleski & Baron, 2008a; Miles, Covin, & Heeley, 2000). It also makes different decision-making strategies, such as, effectuation, more productive (Brettel, Bendig, Keller, Friederichsen, & Rosenberg, 2014), which suggests that entrepreneurial behavior is particularly rewarding under higher uncertainty.
Thus, it is not clear when uncertainty inhibits and when it promotes entrepreneurs' motivation – this lack of knowledge was already pointed out by work on different types of uncertainty almost ten years ago (McKelvie et al., 2011) and has – to the best of my knowledge – not sufficiently been addressed until today.

As already outlined above, uncertainty has been operationalized in a number of ways in entrepreneurship (McKelvie et al., 2011) stemming from, e.g., the market environment (Autio et al., 2013; Edelman & Yli-Renko, 2010), technology (Heavey & Simsek, 2013), business model (Andries, Debackere, & van Looy, 2013) or entrepreneurs themselves (Freel, 2005; Hoang & Gimeno, 2010). In particular, the review of work on uncertainty in entrepreneurship by Townsend et al. (2018) shows a strong focus on uncertainty stemming from the market environment or venture and – to a minor extent – from the individual. However, these perspectives again neglect one crucial dimension: the team. Not only is the team a source of support for entrepreneurs, but also a source of uncertainty. For instance, entrepreneurs may not know who in the team possess which capabilities and experience (Eisenhardt & Schoonhoven, 1990), whether team members are dependable (De Jong & Elfring, 2010), whether they are committed to contribute to the joint goal of establishing a successful venture (Powell, Galvin, & Piccoli, 2006), and whether they will be supportive (Burtscher et al., 2018). Examining uncertainty stemming from the team is important as it affects the effectiveness of entrepreneurs (Jung et al., 2017), their teams (Sieweke & Zhao, 2015) and, thereby, their thoughts processes and motivation (Hüffmeier et al., 2017). Thus, research on uncertainty stemming from the team appears to be a promising opportunity.
Yet, the team is not the only source of uncertainty providing an opportunity for more research. Uncertainty for entrepreneurs means they are unaware how the future will develop (Townsend et al., 2018). In other words, they do not know what to expect. Such expectancies are, in particular, built on past experiences (Roese & Sherman, 2007; Thagard, 2005). For instance, entrepreneurs can gather experience in working together with the team to establish expectancies and, thereby, reduce uncertainty stemming from the team (Beckman, 2006; Kor, 2003; Zheng, 2012). But also acting as an entrepreneur is a source of uncertainty to entrepreneurs. This can stem from not knowing how to fulfill the role of an entrepreneur (Hoang & Gimeno, 2010),

how to pitch to customers (Baron et al., 2016b) or how to use entrepreneurial methods like effectuation (Perry, Chandler, & Markova, 2012). However, the more entrepreneurial experience entrepreneurs possess, the better they are able to act as entrepreneurs (Chen, Greene, & Crick, 1998; Dimov, 2010; Gielnik, Zacher, & Wang, 2018; Zhao, Seibert, & Hills, 2005) and, thus, reduce uncertainty in acting as an entrepreneur.

Interestingly, entrepreneurial experience has been mostly pictured by academics from a human capital perspective (see Farmer, Yao, & Kung-Mcintyre, 2011; Gottschalk, Greene, & Müller, 2017; Politis, 2005; Toft-Kehler, Wennberg, & Kim, 2014; Ucbasaran, Westhead, & Wright, 2009) and rarely from an uncertainty perspective (for exceptions, see Freel, 2005; Hoang & Gimeno, 2010). Further, similar to uncertainty in general, entrepreneurial experience has been shown to both positively and negatively affect entrepreneurs; while entrepreneurial experience has been shown to be beneficial as it helps entrepreneurs assess what is required to realize opportunities (Farmer et al., 2011), it has also been shown to be disadvantageous as it relates to overconfidence (Toft-Kehler et al., 2014), rumination and doubt in case of failure experiences (Ucbasaran et al., 2009), and insomnia (Kollmann, Stöckmann, & Kensbock, 2019). Thus, continuing research on entrepreneurial experience as uncertainty stemming from the entrepreneur can help understand its positive and negative effects for entrepreneurs from a rarely chosen perspective offering different mechanisms compared to the human capital perspective.

Conclusively, examining when different types of uncertainty affect entrepreneurs' motivation presents an opportunity for more research.

1.2 Research questions and calls

In the previous chapter, I described how research on entrepreneurs' motivation has developed, what we know today, and what remains unknown and will be examined in this thesis. In the following, I briefly summarize the gaps in research, which important research questions arise from these gaps that will be in this thesis, and how my thesis addresses current calls for research.

So far, research on the opportunity—entrepreneurial actor nexus not only stops at examining entrepreneurs' motivation at venture foundation but also largely neglects the team. However, the opportunity is likely to influence entrepreneurs' motivation post venture foundation as it requires months to years before the opportunity (fully) materializes in revenue or profit meaning entrepreneurs are left to their opportunity perception to reason their behavior. Also, the team is

important as most ventures are founded in teams. Hence, their success is dependent on the team and so is the entrepreneur. Thus, I seek to contribute to research on entrepreneurial motivation and cognition in general and to research on the opportunity and team in particular by answering the question:

RESEARCH QUESTION 1: To what extent do entrepreneurs' beliefs in the opportunity affect entrepreneurs' motivation post venture foundation?
RESEARCH QUESTION 2: To what extent do entrepreneurs' beliefs in the team affect entrepreneurs' motivation post venture foundation?

Focusing on these research questions addresses multiple calls for research, which are summarized in Table 1. Most recently, Murnieks et al. (2020b) have published a review on 71 articles relating to entrepreneurs' motivation. In their review, the authors highlight the relative scarcity of research focusing on the intensity of motivation during the new venture creation process. Similarly, Hisrich et al. (2007) call for more research on the cognitive processes of entrepreneurs, particularly during opportunity exploitation. Examining opportunity's relevance post venture foundation is also relevant as Davidsson (2015) suggests that the opportunity is not equally important in every stage of the entrepreneurial journey. This issue is further elevated considering team's importance for venturing and the suggestion by Höhmann and Welter (2005) that the relevance of entrepreneurs' beliefs in the team, such as, trust, changes with the development of the venture.

Further, entrepreneurs act under uncertainty affecting their motivation. However, uncertainty can be both promoting and inhibiting to entrepreneurs' motivation as it can be perceived as an indicator for profit (promoting) or as a challenge (inhibiting).
Moreover, the team as a source of uncertainty has been mostly neglected in entrepreneurship. Also, the individual or the entrepreneur as a source of uncertainty has not found sufficient attention. However, these types of uncertainty likely affects entrepreneurs' motivation. Thus, I seek to contribute to research on entrepreneurial motivation in general and to research on uncertainty in particular by answering the following question:

RESEARCH QUESTION 3: To what extent do different types of uncertainty affect entrepreneurs' motivation post venture foundation?

This question again address multiple calls for research. For instance, McKelvie et al.'s (2011)

		Call	
Dimension	**Authors**	Synthesized	In paper
Opportunity—entrepreneurial actor nexus	Murnieks et al. (2020b)	Advancing our understanding how entrepreneurs' motivation is intensified	"Decidedly less research examines how motives affect the intensity and duration of founder behavior during the new venture process." (p. 23f)
	Davidsson (2015)	More nuanced understanding of opportunity's relevance for entrepreneur during different stages of venture foundation	"[L]ittle progress has been made on several core questions pertaining to "opportunities" and the nexus. There is still very little solid knowledge about what the salient characteristics of "opportunities" are, and what direct and actor-moderated effects they have at different critical stages of the journey from non-existence to existence of new economic activities." (p. 676)
	Hisrich et al. (2007)	Advancing our understanding of entrepreneurial cognition relating to opportunity exploitation	"What is the nature of the cognitive process underlying opportunity recognition and exploitation?" (p. 581)
Uncertainty	Townsend et al. (2018)	More nuanced understanding of how different forms of uncertainty affect entrepreneurs' motivation	"Thus, there is an urgent need for more research that (i) builds on the seminal work of Knight (1921) and others to disaggregate extant conceptions of uncertainty, (ii) identifies and explicates the nature of knowledge problems that have been subsumed errantly by uncertainty, and (iii) explores alternative models of action that entrepreneurs use to mitigate this array of knowledge problems." (p. 660)
	Packard et al. (2017)	More nuanced understanding of how different forms of uncertainty affect entrepreneurs	"Future research should include empirical investigation of the performance implications of entrepreneurs' perceptions of different types of uncertainty." (p. 853)
	McKelvie et al. (2011)	Advancing our understanding when uncertainty promotes and inhibits entrepreneurs' motivation	"It is our hope that this article motivates additional empirical research positioned to investigate the complex and sometime counter-intuitive ways that uncertainty might propel — or impede — entrepreneurial action." (p. 289)

Table 1: Overview of selected research calls
Source: Own illustration

call for research to understand when uncertainty increases and when uncertainty decreases entrepreneurs' motivation. Further, Townsend et al. (2018) as well as Packard et al. (2017) raise the point that we need a more nuanced understanding how different types of uncertainty affect entrepreneurs.

1.3 Structure of thesis

In this thesis, I seek to find answers to the research questions presented above. The structure of the thesis is as follows.

In Chapter 2, I focus on the theoretical background. For this, I introduce the main theory to be used, namely, expectancy theory (Vroom, 1964), (Chapter 2.1). Hereafter, as expectancy theory originates from an organizational context, I focus on translating expectancy theory in an entrepreneurial context (Chapter 2.2) and derive the hypotheses to be tested (Chapter 2.3).

In Chapter 3, I explain the methodology. This includes the approach of the data collection (Chapter 3.1) as part of the 'BEST project', a joint collection effort of multiple researchers at the Entrepreneurship Research Institute, the description of the sample (Chapter 3.2), the selection and description of measured used (Chapter 3.3), and procedure of the data analysis (Chapter 3.4).

In Chapter 4, I continue with the results. First, I provide the descriptive statistics (Chapter 4.1). Then, I proceed with the results of the hypotheses testing (Chapter 4.2) and robustness checks (Chapter 4.3) before providing a summary of the results and respective hypotheses tests (Chapter 4.4).

In Chapter 5, I engage into the discussion how this thesis holds contributes for academics (Chapter 5.1) and practitioners (Chapter 5.2). I also discuss the limitations of this research (Chapter 5.3) before providing a conclusion and outlook what avenues for future research emerge from this thesis (Chapter 5.4).

2 Theoretical background

To understand entrepreneurial motivation, prior studies have not relied on one consistent theoretical perspective, but on an array of theories (Carsrud & Brännback, 2011). In particular, Ajzen's theory of planned behavior (1985) and the entrepreneurial event model by Shapero and Sokol (1982) have been taken up by numerous academics[4] (Meoli, Fini, Sobrero, & Wiklund, 2020; Mwangi & Rotich, 2019). While stemming from different fields and carrying different names, both theories "are largely homologous to another" (Krueger, Reilly, & Carsrud, 2000, p. 419) and carry a common origin (Steel & König, 2006): Vroom's expectancy theory (1964).

Expectancy theory represents the theoretical lens for this thesis. In the next chapter, I will first introduce the tenets of expectancy theory. In its origin, expectancy theory was intended to understand work motivation in an organizational context (Kanfer, Frese, & Johnson, 2017) but also found application in the entrepreneurial context (e.g., Gatewood et al. (2002) or Edelman and Yli-Renko (2010)). Thus, I will start introducing expectancy theory in an organizational context (Chapter 2.1) before elaborating on its role in an entrepreneurial context (Chapter 2.2). Thereafter, I will derive the hypotheses (Chapter 2.3).

2.1 Expectancy theory

With his expectancy theory, Vroom sought to "organize the evidence on such problems as occupational choice, job satisfaction, and motivation for effective work performance" (1985, p. 20). As an endogenous theory it describes the psychological process driving individual's motivation and decision to invest effort into an activity (Grant & Shin, 2012). Whether an individual invests effort depends on three beliefs: valence, instrumentality, and expectancy.

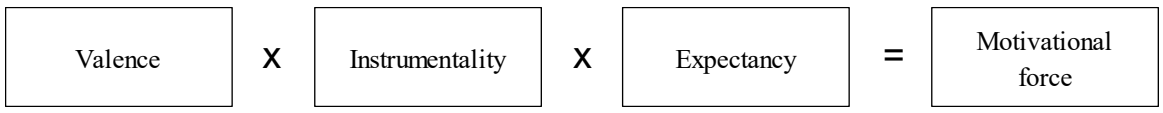

Figure 1: Illustration of expectancy theory
Source: Own illustration

[4] For an in-depth review on emergence, relevance and development of theories to explain motivation, in particular in an organizational context, please refer to the work of Kanfer et al. (2017).

These three beliefs affect motivation in a multiplicative manner (see Figure 1) such that the absence of one leads to no action (Porter & Lawler, 1968). Among different options, the individual will act on the activity providing the largest positive motivational force.
In the following, every dimension (valence, instrumentality, expectancy, and motivational force) will be described. To illustrate the effects, the cognitive process of an employee in an organization will be described.

Valence

Valence refers to individual's beliefs of the outcome—reward link, that is, the "the importance, attractiveness, desirability, or anticipated satisfaction" (van Eerde & Thierry, 1996, p. 576) that is connected to an outcome. This definition is line with Vroom's original definition from 1964 and also other studies and reviews conducted in subsequent years (see Table 2).

An example could refer to an employee in an organizational context who decides on investing effort in his or her job. In this case valence describes the extent to which a potential reward, such as a promotion, recognition or successful placement into a different department, is desirable to the employee. Only if such a reward is desirable, the employee will invest effort. This also holds true for potential negative rewards, i.e., sanctions.

Empirical results show support for the relevance of valence. For instance, Pritchard and Sanders (1973) note that among the three factors explaining work motivation to invest effort, valence was the strongest predictor in their sample of post office workers. Relating to occupational choice, Mitchell and Knudsen (1973) show that attitude towards a field of occupation explained students' occupational choice. In the same line, Wanous et al. (1983) review 16 studies on occupational choices, of which 63% correctly predict the choice based on individuals'

Authors	Definition
Kanfer et al. (2017)	"[T]he level of satisfaction expected from achieving work outcomes" (p. 344)
Grant & Shin (2012)	"[O]utcomes are important or valued" (p. 3)
Klein (1991)	"[T]he affective orientation towards [an] outcome" (p. 231)
Wanous et al. (1983)	Desirability of an outcome
Heneman & Schwab (1972)	Value of rewards
Hackman & Porter (1968)	Degree to which an individual likes an outcome
Vroom (1964)	"[T]he affective orientation towards particular outcomes" (p. 15)

Table 2: Selected definitions of valence
Source: Own illustration

perceived organizational attractiveness. Relating to the relevance of specific outcomes, Nebeker and Mitchell (1974) show that supervisors in a naval aviation team put most effort towards the outcomes most relevant to them (e.g., productivity or moral) as indicated by their team members. In a more recent study, Burns et al. (2018) show that employees' assessed importance of organizational information security positively relates to their intentions to comply with organizational security standard to protect organizational information assets. Relating to rewards, Kominis and Emmanuel (2007) find managers to be more motivated by rewards if rewards' perceived value is larger. Similarly, Kahn and Sherer (1990) find managers to show increased performance levels after bonus payments in case such bonus is important to them. Also, the introduction or existence of bonus schemes has been shown to increase efforts, e.g., for police officers reducing crime (Cabral, Firpo, Costa, Monteiro, & Viotti, 2019) or employees referring colleagues to other position in the same organization (Pieper, Greenwald, & Schlachter, 2018). Last, outside organizations, yet in a high performance environment, Hüffmeier et al. (2017) show that participation in high stake championships (e.g., Olympic Games or world championships) leads to increased efforts and performance for swimmers.

Instrumentality

In his original work, Vroom (1964) describes instrumentality as the relationship of different outcomes to another, i.e., to what extent one outcomes leads to another outcome. In my work, I follow the interpretation of instrumentality as a belief describing to what extent performance leads to an outcome, which can also be described as the likelihood or probability performance translates into an outcome (Kanfer et al. (2017), see Table 3).

In an organizational context, an employee's instrumentality belief might relate to his or her perception that high performance on the job will translate into a promotion, increase of salary

Authors	Definition
Kanfer et al. (2017)	"[T]he likelihood of achieving those outcomes by attaining a particular level of performance" (p. 344)
Grant & Shin (2012)	"[P]erformance will lead to outcomes" (p. 3)
Klein (1991)	Attainment of an outcome
Wanous et al. (1983)	Belief about outcome-performance link
Heneman & Schwab (1972)	Performance-reward probability
Vroom (1964)	Subjective correlation between outcomes

Table 3: Selected definitions of instrumentality
Source: Own illustration

or new position. Only if he or she is confident that instrumentality is high, the employee will be motivated to invest effort.

Both theoretical and empirical works support the relevance of instrumentality. For instance, Dachler and Mobley (1973) highlight that employees need transparency about the performance—outcome link in order to be motivated. Further, Oliver (1974) examines salespersons' beliefs and shows that employees believing high volumes sold translate into positive outcomes (e.g., high compensation) indeed sell higher volumes. Also, perceptions of the pay—performance link strength have been shown to positively affect future employee performance (Nyberg, Pieper, & Trevor, 2016), to be stronger if linked to individual rather than collective efforts (Conroy & Gupta, 2019), and to be stronger if compensation is based on relative performance within the organization in case employees perceive a fair chance in competing with colleagues, i.e., perceive that effort pays off in higher relative performance (Backes-Gellner & Pull, 2013). With respect to organizational citizenship behavior (behavior exceeding job requirements (Morrison, 1994)), employees believing such behavior translates into valued outcomes exert more organizational citizenship behavior (Haworth & Levy, 2001; McAllister, Kamdar, Morrison, & Turban, 2007). While only derived theoretically, Beus and Taylor (2018) propose that employees engage in more safe behavior at work if they think that their behavior makes the workplace safer and, vice-versa, engage in more unsafe behavior if they think their behavior does not lead to an accident. Again referring to the work by Hüffmeier et al. (2017), athletes in teams show higher level of motivation and performance if they perceive a higher chance of winning as a team (2017). More distant and in a consumer context, Chopra (2019) finds consumers to adopt new technologies (i.e., AI-driven chatbots) to inform their purchasing decision only if they believe such technologies are helpful. Last, Mento et al. (1992) note students select more effortful goals if they perceive them so relate stronger to positive outcomes (e.g., development of skills).

Expectancy

Expectancy refers to individual's belief how likely effort translates into performance (Kanfer et al., 2017). It is important to note that expectancy only refers to the effort—performance link and not to the effort—outcome link, with the latter "confound[ing] expectancy with instrumentality" (van Eerde & Thierry, 1996, p. 576). This becomes apparent reviewing some definitions applied by different authors as shown in Table 4. For instance, both Klein (1991) as

Authors	Definition
Kanfer et al. (2017)	"[T]he likelihood that one (with effort) will reach a certain level of performance" (p. 344)
Grant & Shin (2012)	"[E]ffort will lead to performance" (p. 3)
Klein (1991)	"[T]he likelihood that a particular outcome will result from [an] action" (p. 230f)
Wanous et al. (1983)	Probability of performance
Heneman & Schwab (1972)	"[T]he perceived probability that an […] effort will result in the achievement of [a] performance level" (p. 2)
Hackman & Porter (1968)	"[L]evel of certainty […] that […] outcomes will in fact be obtained" (p. 418)
Vroom (1964)	"[A] momentary belief concerning the likelihood that a particular act will be followed by a particular outcome" (p. 17)

Table 4: Selected definitions of expectancy
Source: Own illustration

well as Hackman and Porter (1968) refer to the action—outcome link in defining expectancy. Yet, this link mixes the concepts of expectancy and instrumentality.

In an organizational context an employee's expectancy belief might relate to his or her perception of goal difficulty, self-efficacy, control or risk and uncertainty. For instance, in order to be motivated, an employee needs to be convinced that he or she is able to perform a task. Also, employee's perception to possess the skills required to perform a task might affect his or her motivation.

Empirical results on the outcomes of expectancy have been mixed and at the center of controversial discussions. In particular, goal difficulty and self-efficacy contributed to this discussion. Starting with goal difficulty, Klein (1991) argues that goal difficulty does not affect expectancy but rather resembles an immediate step before goal realization, i.e., effort exertion. This means that goal difficulty marks an aspired level of effort but does not affect motivation. In his study, he finds empirical support that goal difficulty serves as a mediator of the expectancy—performance link. Other work describes goal difficulty to indicate the probability that a goal can be attained. However, empirical results are mixed. In their meta-analysis, Locke and Latham (1990) note that individual's motivation and performance is highest under middle or high level of task difficulty. In student samples, Locke et al. (1968) and Matsui et al. (1981) note students to show higher performance when they set more difficult tasks to perform. Yet, the authors note potential issues of which two are particularly noteworthy. For one, the incentive provided might be unbalanced for different level of task difficulty, i.e., incentives might be relatively large for high goal difficulty compared to when goal difficulty is low. For another,

goal difficulty might affect expectancy and valence at the same time resulting in opposing effects as more difficult goals are more unlikely to achieve (reducing expectancy), yet promise higher rewards (increasing valence). Moreover, Harrell and Stahl (1984) find results contrary to the findings of Locke et al. (1968) and Matsui et al. (1981). In an experiment regarding managers' project investment decisions in an organization, they could show that participants' motivation decreases with increasing level of goal difficulty, i.e., decreasing likelihood to achieve organization's goal to stay within a pre-set budget, which is in line with expectancy theory. Other work also supports expectancy theory. For instance, Beuk et al. (2014) find sales agents achieve higher new product sales the more they are convinced of product's success prior to the sales start. Similarly, Scott and Townsend (1992) show that sales agents achieve higher performance the more they are convinced sales goals are attainable. Also, Lawler and Suttle (1973) find individuals to achieve higher performance if they are convinced that hard work relates to high performance; similar results have been derived for employee's intention to protect organizational information assets and their perception that effort translates into protective behavior (Burns et al., 2018).

Subsequently, self-efficacy theory (and more broadly, social learning theory) has been introduced to resolve these conflicting findings (Bandura & Walters, 1977; Locke, Motowidlo, & Bobko, 1986). The concept of expectancy or beliefs about the effort-performance link is captured by self-efficacy, i.e., individual's perception to be able to execute an action (Bandura & Walters, 1977). Following self-efficacy theory, individuals high in self-efficacy select more difficult goals compared to individuals low in self-efficacy and, thus, individuals high in self-efficacy perform better. This is in line with the results by Locke et al. (1968) and Matsui et al. (1981), who used student samples, as well as the review by Locke and Latham (1990). Further, Zimmerman et al. (1992) find students' beginning of year efficacy beliefs to positively relate to end of year grade performance. In an organizational context, general efficacy beliefs have been positively related to performance (Lee, Locke, & Phan, 1997) and creative self-efficacy beliefs in particular have been linked to increased creative performance (Malik, Butt, & Choi, 2015). However, following Vroom's expectancy theory (1964), the concept of ability is described as another factor which moderates the effort—actual performance link. Thus, self-efficacy is distinct from expectancy (see Heneman & Schwab, 1972; Lawler & Suttle, 1973; Mitchell & Nebeker, 1973). This distinction is also made in Bandura's social learning theory (Williams, 2010), yet, Locke et al. (1986) do not disentangle effects.

Besides conceptualization as goal difficulty and self-efficacy, expectancy has also been described in terms of control, i.e., individuals perceived control over their behavior and

situation (Malik et al., 2015). Perception of control has been related to expectations in general (Sims, Szilagyi, & McKemey, 1976), higher creative performance (Malik et al., 2015) or job performance (Broedling, 1975). Notably, Broedling reasons that control affects motivation via instrumentality as both relate to individual's perceived environmental influence. I argue this to be true and follow the line of thought by Hüffmeier et al. (2017) judging individual's environmental influence to relate to the effort—performance link as with increasing relevance of the individual effort should more immediately influence the environment and, thus, have stronger effects on performance.

Last, expectancy has been conceptualized as risk or uncertainty. For instance, Pieper et al. (2018) find employees to be less likely to refer a colleague for a position if they perceive the referring to be risky. Further, Ferris (1978) finds less predictive power of expectancy theory explaining employee's motivation under high uncertainty regarding the effort—performance link. Related to the consumer context, Schade et al. (2018) show consumers to be less inclined to use location-based advertisement if they perceive a high risk of privacy invasion.

Motivational force

In his work, Vroom does not clearly specify what motivational force means and it rather serves as a 'metaphor' (van Eerde & Thierry, 1996, p. 577). As such it has been defined as both motivation and behavior ranging from intentions, preferences, and choices over to decisions, effort, and performance. An overview of selected definitions is provided in Table 5 showing the range of definitions.

While Vroom states that motivational force predicts behavior, criticists argue that as expectancy theory describes a cognitive choice it should be a better predictor of intentions than behavior

Authors	Definition
Kanfer et al. (2017)	None
Grant & Shin (2012)	Effort
van Eerde & Thierry (1996)	Effort, intention, preference, choice, performance
Klein (1991)	Effort
Wanous et al. (1983)	Choice of action, metarializing in effort, occupational choice, job satisfaction
Heneman & Schwab (1972)	Effort
Hackman & Porter (1968)	Effort, performance
Vroom (1964)	None

Table 5: Selected definitions of motivational force
Source: Own illustration

(Kanfer, 1990). In their meta-analysis on expectancy theory, van Eerde and Thierry (1996) also note that indeed expectancy theory serves better as a predictor for intentions than for behavior. Part of this shortcoming has been picked up by Ajzen's theory of planned action (1985) in suggesting that next to intentions perceived control affects behavior or action (Gollwitzer, 1993). Nonetheless, intentions are the single best predictor for action (Krueger et al., 2000) suggesting expectancy theory to be appropriate to explain both intentions and action.

Empirically, expectancy theory has been applied to predict a variety of motivational forces, e.g., intentions (Hayton & Cholakova, 2012; Renko et al.; Schade et al., 2018), effort (Hüffmeier et al., 2017; Kominis & Emmanuel, 2007; Nebeker & Mitchell, 1974), performance (Beuk et al., 2014; Cabral et al., 2019; Hüffmeier et al., 2017; Oliver, 1974) or occupational choices (Mitchell & Knudsen, 1973; Wanous et al., 1983).

2.2 Expectancy theory in the entrepreneurial context

In the next chapter, I will introduce expectancy theory to the entrepreneurial context before deriving the hypotheses. I start with briefly elaborating on valence and motivational. Then, I will extensively focus on instrumentality and expectancy. Last, I will provide a summary on the concepts.

Motivational force and valence

Unfortunately, Vroom's definition of motivation is rather vague (van Eerde & Thierry, 1996). Instead, I subscribe to the definition of work motivation by Pinder (1998), which finds application in important reviews on work motivation (Latham & Pinder, 2005) and entrepreneurial motivation (Murnieks et al., 2020b). Following Pinder, work motivation is "a set of energetic forces that originate both within as well as beyond an individual's being, to initiate work-related behavior and to determine its form, direction, intensity, and duration" (1998, p. 11). Put in the entrepreneurial context, this means entrepreneurial motivation is a set of energetic forces that originate both within as well as beyond the entrepreneur, to initiate entrepreneurial behavior and to determine its form, direction, intensity, and duration.

However, as motivation is contextual (Latham & Pinder, 2005), this definition of entrepreneurial motivation means it covers entrepreneurial intentions, entrepreneurial behavior, and entrepreneurial performance depending on the context.

Recapturing the context described in the introduction, the focus of this dissertation lies on entrepreneurs' motivation after venture foundation. After venture foundation, entrepreneurs seek to exploit the opportunity (Shane & Venkataraman, 2000). Yet, the goal of entrepreneurs is not the exploitation process itself, but to successfully build a venture which exploits the opportunity. In this vein, Amit and Zott (2001) suggest that entrepreneurs seek to successfully build a venture providing a business model that "depicts the content, structure, and governance of transactions designed so as to create value through the exploitation of business opportunities" (p. 511). This means, the outcome for entrepreneurs in the exploitation phase is the successful establishment of a venture with a viable business model.
In this light, entrepreneurs' motivation is to initiate entrepreneurial behavior to successfully advance towards such a venture or, in other words, to achieve goal progress (Brunstein, 1993).

The outcome of successfully establishing a venture with a viable business model also affects entrepreneurs' valence. Repeating its definition, valence refers to individual's beliefs of the outcome—reward link, that is, the "the importance, attractiveness, desirability, or anticipated satisfaction" (van Eerde & Thierry, 1996, p. 576). Given that entrepreneurs have already made the decision to engage in the entrepreneurial journey, I argue that the expected rewards of successfully establishing a venture with a viable business model, e.g., high job satisfaction (Bradley & Roberts, 2004) or economic rewards (e.g., money, prestige or power, see Carsrud & Brännback, 2011), are sufficiently large to motivate further entrepreneurial behavior. Thus, valence will not be focused for theorizing.

Instrumentality

Recapturing the definition of instrumentality, instrumentality refers to the extent performance leads to an outcome. The outcome refers to the successfully establishment of a venture with a viable business model. The performance evaluation is left to entrepreneurs' judgement due to the absence of a supervisor and only a limited role description (Wincent & Örtqvist, 2009). However, as the establishment of the venture goes in hand with specific tasks, such as, the completion of product development (Baron et al., 2016b), entrepreneurs can rely on such tasks to assess performance. More so, having successfully completed the tasks means entrepreneurs established a venture with a viable business model which exploits the opportunity and creates value. This means performance refers to task completion. Combining the definitions of outcome and performance, instrumentality in the entrepreneurial context refers to the task completion—

venture establishment link or, in other words, to what extent entrepreneurs believe task completion translates into the successful establishment of a venture with a viable business model. Given that task completion is based on perceptions, entrepreneurs' goal progress or advancements towards establishment of a venture with a viable business model is also based on the entrepreneurs' perceptions.

Following Shane and Venkataraman (2000), two factors are central to entrepreneurship: the opportunity and the set of individuals pursuing it. I argue that both factors are relevant to entrepreneurs' instrumentality beliefs.

For one, entrepreneurs' belief in the opportunity is relevant for entrepreneurial motivation. It is the entrepreneurs' perception whether an opportunity for profit exists (Shane & Venkataraman, 2000). This perception is the ignition for further entrepreneurial activity, as entrepreneurs not only are required to perceive an opportunity as existent (third-person opportunity), but also to be worth pursued by themselves (first-person opportunity) (McMullen & Shepherd, 2006). Further, entrepreneurs need to remain confident in the opportunity as otherwise efforts to establish the venture will be discontinued (Dimov, 2007). Thus, the entrepreneurs' belief in the opportunity leads to the emergence of entrepreneurial intentions (Autio et al., 2013; Townsend, Busenitz, & Arthurs, 2010), decision to start a venture (Dimov, 2010), and decision to invest effort towards venture establishment (Edelman & Yli-Renko, 2010; Laffineur et al., 2019, forthcoming) even when perceiving negative feedback (McMullen & Kier, 2016; Yang, Liu, Zhang, Chen, & Niu, 2015). This means, the opportunity is instrumental to entrepreneurship (Klein, 2008). Consequently, entrepreneurs' belief in the opportunity is relevant for entrepreneurial motivation.

Prior work has established ample descriptions of opportunity beliefs which will be exemplified in Table 6. Following the reasoning above, entrepreneurs' belief in the opportunity comprises entrepreneurs' confidence that upon completion of all tasks required they can establish a venture to exploit the opportunity. Reviewing the definitions provided in Table 6, the definition of opportunity recognition beliefs by Grégoire et al. (2010b) matches this description very well. Other definitions are more general (Wood, McKelvie, & Haynie, 2014), include different additional dimensions, such as, ability or self-efficacy (Dimov, 2010), are less explicitly defined (Barreto, 2012) or itself are related to a multi-step process (McMullen & Shepherd, 2006).

Authors	Concept	Definition
Wood et al. (2014)	Opportunity belief	Belief that acting on an opportunity idea will result in a desired end state
Barreto (2012)	Entrepreneurial interpretation	Perceived match between entrepreneurs' opportunity template [that is "mental templates of organized knowledge related to an information domain" (p. 362)] and the information related to a shock observed
Dimov (2010)	Opportunity confidence	Belief that an opportunity is feasible and the entrepreneur able to establish a venture that exploits it
Gregoire et al. (2010b)	Opportunity recognition belief	Belief that an opportunity is marketable, feasible and desirable
McMullen and Shepherd (2006)	First-person opportunity	Belief that a third-person opportunity is feasible and desirable to the entrepreneur
	Third-person opportunity	Belief that a potential opportunity for someone in the marketplace exists

Table 6: Selected definitions of opportunity beliefs
Source: Own illustration

For another, entrepreneurs' belief in the team is relevant. In pursuing the opportunity, the entrepreneurs "seek to convince, engage, or organize other social actors" (Dimov, 2007, p. 714). Indeed, most ventures are founded by teams rather than solo entrepreneurs (Klotz et al., 2014; Ruef et al., 2003) and "team involvement is often necessary for success" (Schjoedt, Monsen, Pearson, Barnett, & Chrisman, 2013, p. 3). This might be due to entrepreneurs' need for a team as building a new venture can be challenging and exceed the capabilities of the solo entrepreneur (Gartner, 1985). Beyond serving entrepreneurs' need, collaboration with other entrepreneurs can also help advance the venture as teams offer the possibility for specialization (Rau, 2005), help in processing unfamiliar information (Healey, Vuori, & Hodgkinson, 2015), and support in withstanding the emotional rollercoaster of entrepreneurship (Burtscher et al., 2018). Teams also affect entrepreneurs' cognitive processes as social structures affect how one structures information (Krueger, 2007). At the same time, collaboration with other entrepreneurs can slow down progression towards venture establishment as teams can be a source of coordination errors (Sieweke & Zhao, 2015), conformity in thinking (Baron, Vandello, & Brunsman, 1996) and conflict (Breugst, Patzelt, & Rathgeber, 2015).

Further, team's relevance for entrepreneurs immediately follows expectancy theory. In case entrepreneurs think own efforts in advancing the venture will be offset by team members, they will no longer be motivated (Hüffmeier et al., 2017). Consequently, entrepreneurs' belief in the team is relevant.

As entrepreneurs are dependent on their team, their dependency relates both to cognitive dependency (e.g., dependency on team members' competence) and affective dependency (e.g.,

Authors	Concept	Definition
Mach et al. (2010)	Team cohesion	"[D]egree to which team members work together as they pursue the team's goals" (p. 774)
McAllister (1995)	Cognitive and affective trust	"[E]xtent to which a person is confident in, and willing to act on the basis of, the words, actions, and decisions of another" (p. 25)
Guzzo et al. (1993)	Potency	"[C]ollective belief in a group that it can be effective" (p. 87)
Cohen and Bailey (1997)	Team effectiveness	Performance, attitudinal and behavioral outcomes of a team
Edmondson (1999)	Psychological safety	"Shared belief that the team is safe for interpersonal risk taking" (p. 354)

Table 7: Selected definitions of team beliefs
Source: Own illustration

dependency on team members' emotional support). Reviewing potential definitions of team beliefs as presented in Table 7, the definition provided by McAllister (1995) closely conveys this notion. Other definitions are more reliant on one dimension; for instance, potency (Guzzo, Yost, Campbell, & Shea, 1993) and team effectiveness (Cohen & Bailey, 1997) rather describe the cognitive dependency and psychological safety (Edmondson, 1999) and thus relates to affective dependencies within the team. Also, other definitions, i.e., team cohesion (Mach, Dolan, & Tzafrir, 2010) refer to a mediating factor translating individuals belief into performance. Hence, I follow McAllister's definition of trust (1995), that is, the "extent to which a person is confident in, and willing to act on the basis of, the words, actions, and decisions of another" (p.25), to describe entrepreneurs' belief in the team. Thus, entrepreneurs' team belief describes entrepreneurs' trust in the team.

Expectancy

Recapturing the definition provided earlier, expectancy describes how likely effort translates into performance. As previously stated, performance refers to task completion. Consequently, expectancy describes how likely task effort translates into task completion. In other words, entrepreneurs' expectancy is the perceived predictability of the task effort—task completion link.

Expectancy theory's meaning of expectancy as predictability is in the entrepreneurial context most commonly captured by its reverse side, namely, uncertainty (see Dimov, 2010; Edelman & Yli-Renko, 2010; McMullen & Shepherd, 2006; Vilanova & Vitanova, 2020). Yet, while uncertainty and entrepreneurship are inherently intertwined making uncertainty a prominent

topic in the field (Barreto, 2012; Dimov, 2010; McMullen & Shepherd, 2006; Packard et al., 2017), its conceptualization has been troublesome (Packard et al., 2017; Townsend et al., 2018) leading to "overuse and misuse" (Townsend et al., 2018, p. 670). Thus, in the section to follow, I will briefly review and define the term uncertainty.

A summary of selected uncertainty definitions is provided in Table 8. The definitions by Knight (1921) and Milliken (1987) have been influential within the general field of management, but are also relevant to entrepreneurship (McMullen & Shepherd, 2006), whereas the conceptualizations by Packard et al. (2017) and Townsend et al. (2018) are recent contributions to provide a more nuanced picture specifically for entrepreneurship. While I subscribe to the thoughts of Townsend et al. (2018) and Knight (1921), every definition will be shortly described in the following.

With more than 23,400 citations[5], Knight's seminal work on uncertainty (1921) substantially contributes to the field of management and economics (Busenitz, 2007; Davidson, 1988; Packard et al., 2017; Sarasvathy, 2001). Following Knight, at the time uncertainty and risk were errantly used interchangeably. In his work, he clearly distinguishes these two concepts: Whereas risk refers to a probability, i.e., can be estimated and is known before a decision is made, uncertainty refers to the absence of knowing of such probabilistic distribution. Hence, the success of an action cannot be objectively estimated, yet, the individual can hold a subjective confidence in an expected probability. In this context, entrepreneurial behavior is rewarded with profit as the individual bears uncertainty.

Another influential and more nuanced conceptualization is provided by Milliken (1987), which also finds application in McMullen and Shepherd's (2006) theorizing on entrepreneurial action under uncertainty. Following Milliken (1987), uncertainty in general refers to individual's inability for accurate predictions. This inability materializes as state, effect and response uncertainty. For the individual, this means he or she might be not able to predict environmental changes (state uncertainty), how he or she will be affect by such a change (effect uncertainty), and how to react accordingly (response uncertainty).

In their work, Packard et al. (2017) extend the thoughts provided by Knight and Milliken. Referring to the sets of options the individual can do and the set of possible outcomes resulting for the individual, they describe four clusters relevant to the individual. First, if all outcomes

[5] Retrieved from Google Scholar on 13.01.2020.

Authors	Concept	Comments
Townsend et al. (2018)	Ambiguity	- "Collapse of sensemaking" (p. 671) - Definition of *real* world unclear, meaning that ambiguity is reduced by generating an "intersubjective agreement" (p. 671) - Situation of high ambiguity results if, for instance, information is abundant but its realibility is unclear
	Equivocality	- "[E]xistence of multiple meanings or interpretations" (p. 672) - Individual interpretation is clear (absence of ambiguity), but collectively differ, meaning that additional information do not resolve equivocality - Situation resembles confusion not providing any objective answer
	Complexity	- Results from *detail* and *dynamic* complexity - Detail complexity "is the multiplicity of variables" (p. 673) - Dynamic complexity "is the multiplicity of the interactions that occur between these variables over time" (p. 673) - Situation comprises inability to identify all relevant factors and how they interact
	Uncertainty	- Imperfect understanding of real world due to unclear action-outcome link - Related to predictability of outcome probabilities - Uncertainty is reduced by identification of critical information
Packard et al. (2017)	Absolute uncertainty	- Open set of options (i.e., all possible actions) and open set of outcomes (i.e., all possible outcomes) - Example: Commercialization of new technology - Milliken's response uncertainty corresponds to this
	Creative uncertainty	- Open set of options (i.e., all possible actions) and closed set of outcomes (i.e., finite number of outcomes) - Example: Finding solution to a problem
	Environmental uncertainty	- Closed set of options (i.e., finite number of actions) and open set of outcomes (i.e., all possible outcomes) - Example: Make or buy decision - Milliken's state and effect uncertainty corresponds to this
	Risk and ambiguity	- Closed set of options (i.e., finite number of actions) and closed set of outcomes (i.e., finite number of outcomes) - Risk: Known probability (e.g., gambling) - Ambiguity: Probability could be known, but is not (e.g., in a bidding contest, individual's perceive ambiguity regarding bets of contestors), which sets ambiguity apart from uncertainty - Risk the same as Knight's understanding of risk
Milliken (1987)	State uncertainty	- "[P]erception by an individual that a particular component of the environment is unpredictable; more specifically, that one does not understand how the components of the environment are changing" (p. 137)
	Effect uncertainty	- "Inability to predict what the nature of the impact of a future state of the environment or environmental change will be on the organization" (p. 137)
	Response uncertainty	- "[L]ack of knowledge of response options and/or an inability to predict the likely consequences of a response choice" (p. 137)
	(Uncertainty)	- "[I]ndividual's perceived inability to predict something accurately" (p. 136) - General definition serving as the starting point to alleniate the three uncertainty types above
Knight (1921)	Risk	- Probability, i.e., known distribution of outcomes
	Uncertainty	- No probability available, i.e., distribution of outcomes is unknown - Can resemble subjective confidence in expected probability

Table 8: Selected definitions of uncertainty
Source: Own illustration

and options are limited, the individual is either confronted with risk (i.e., is able to estimate probabilities) or ambiguity (i.e., could be able to estimate probability in theory, but cannot do so due to lack of information). If there is a limited set of outcomes but an infinite number of actions the individual can perform, the individual faces creative uncertainty. In the entrepreneurial context, this could be the case for entrepreneurs knowing what customer problems their future product should solve but do not know how the solution should look like. If there is a limited set of potential actions but an open set of outcomes, the individual faces environmental uncertainty, for instance, when an entrepreneur decides on an investment, the decision is discrete (yes/ no), but the outcome might be unknown. Last, if neither outcome nor actions are limited, the individual faces absolute uncertainty. Entrepreneur face absolute uncertainty, for instance, when they have to assess the market potential (unlimited outcomes) of new technologies (unlimited action, i.e., unclear limits how a technology could be used).

Most recently, Townsend et al. (2018) have contributed to the ongoing discussion on uncertainty. They criticize that within the field of entrepreneurship, uncertainty has been used as an umbrella for every sort of unknowningness regardless of the nature of the problem the individual faces. Further, they note four distinct cases of unknowningness with each case resembling a different problem with a different type of resolution to overcome the absence of knowledge. First, they introduce ambiguity which refers to the 'collapse of sensemaking' (Townsend et al., 2018, p. 671). In this case, the individual does not know which perception of the world to believe as, for instance, the reliability or interpretation of information are unclear. Hence, to reduce ambiguity, entrepreneurs need to establish an 'intersubjective agreement' (Townsend et al., 2018, p. 671), e.g., via finding more reliable sources of information or conduct additional technology tests. Second, equivocality refers to "the existence of multiple meanings or interpretation that are individually unambiguous but collectively lie in direct conflict with one another" (Townsend et al., 2018, p. 660). This means, additional information are not beneficial in reducing this type of unknowningness, as individuals do not lack reliability but are confused which meaning to trust. Again, this knowledge problem can be reduced by generating intersubjective agreement. Third, complexity refers to the result of detail and dynamic complexity, with the former relating to the quantity of issue variables and the latter relating to the unknowningness, which variables relate how to each other. To resolve the issue, entrepreneurs might engage in effectuation, that is, "tak[ing] a set of means as a given and focus on selecting between possible effects that can be creates with that set of means" (Sarasvathy, 2001, p. 245). Last, uncertainty refers to not knowing how action translates into possible

outcomes. Townsend et al. (2018) suggest that entrepreneurial actions do not affect outcome probabilities, but can provide additional information which resolve uncertainty.

As stated earlier and following expectancy theory, uncertainty can be seen as the reverse side of the coin of expectancy. Specifically, the uncertainty definition by Townsend et al. (2018) matches the notion of expectancy very well. Following Townsend et al. (2018), uncertainty is a knowledge problem or unknowningness of the action—outcome relation. As Townsend et al. (2018) do not specifically distinguish between performance and outcome as it is not the primary concern of their work, I adapt their definition of uncertainty to describe an unknowningness of the action—performance relation. Recapturing the introduction of this section, this means that entrepreneurs cannot precisely assess to what extent task effort translates into task completion. This means, uncertainty refers to entrepreneurs' inability to predict how task effort translates into task completion. This level of precision or the predictability is best described as a continuum ranging from certainty to uncertainty. This resembles as social constructivist's view.

Uncertainty can span multiple dimensions, e.g., as suggested by Milliken (1987) or Packard et al. (2017) (see Table 8). In my work, I also want to focus on multiple dimensions, yet make use of the lens as suggested by Hitt et al. (2007). Intended to serve a ground for academics in the field of management in general, they suggest to make a distinction between six dimensions or level of analysis for further research: individuals, groups, subunits, organizations, interorganizational networks, and environments. Yet, not all level will be considered.
While most new ventures are founded by teams rather than a single person (Klotz et al., 2014), the majority of new venture does not have any employees in their early stages (Cooper, Woo, & Dunkelberg, 1989). Moreover, entrepreneurial teams are typically rather small and include on average between two and three members (Breugst et al., 2020, forthcoming). Thus, the differentiation between groups and subunits within an organization becomes obsolete. Further, interorganizational networks, such as, alliances, are beneficial to firms (Schilling & Phelps, 2007) and new ventures (Shan, Walker, & Kogut, 1994), but their appearance is rather uncommon[6] and concentrated in some industries[7]. Consequently, they will not be focused in this work. Last, ample research has already considered the effect environmental uncertainty

[6] In their work on interfirm cooperation, Schibany et al. (2000) report a total of 857 alliances occurring between 1980-94 considering all companies within Germany.
[7] Hagedoorn's (1993) work shows high a concentration in the biotechnology sector, which accounted for more than 20% of alliance activity.

(Bruneel, Clarysse, & Autio, 2018; Dimov, 2010; Edelman & Yli-Renko, 2010; Hmieleski & Ensley, 2007; McMullen & Kier, 2016; Russell & Russell, 1992; Vilanova & Vitanova, 2020), thereby limiting any novelty in focusing on the environment.

Taken together, I will direct the focus towards the individual, group, and organization or, more specifically for the entrepreneurial context, the individual, (founding) team, and venture. This is important as entrepreneurs face uncertainty stemming from multiple dimensions affecting their motivation (Townsend et al., 2018). Further, the differentiation between the individual, team, and venture has also found application in a conceptual model explaining entrepreneurs' motivation for growth intentions by Kolvereid and Bullvag (1996).

Last, I briefly define what individual-, team-, and venture-level uncertainty mean. At every level, entrepreneurs hold specific performance expectations, that is, to what extent task effort will translate into task completion.

At the individual-level, entrepreneurs hold expectations to what extent they can complete a task. Acting entrepreneurial, entrepreneurs face uncertainty about how to manage the entrepreneurial journey. Specifically, entrepreneurs face uncertainty how to solve entrepreneurial tasks like developing products, pitching to customers or convincing investors (Baron et al., 2016b), use entrepreneurial methods like effectuation (Perry et al., 2012), manage negative feedback (Domurath et al., 2020), and cope with demands like role uncertainty (Hoang & Gimeno, 2010) or stress (Uy et al., 2013). This sort of unknowingness can be resolved, for instance, by increasing experience in entrepreneurial action, that is, entrepreneurial experience (Chen et al., 1998; Dimov, 2010; Gielnik et al., 2018; Zhao et al., 2005).

At the team-level, entrepreneurs hold expectations to what extent the team can complete a task. Working together with a team, entrepreneurs face uncertainty about team members' capabilities and how to work together. Specifically, entrepreneurs face uncertainty who in the team possess which skill and experience (Eisenhardt & Schoonhoven, 1990), who is dependable (De Jong & Elfring, 2010), whether potential mistakes on the entrepreneurial journey will be tolerated (Weinzimmer & Esken, 2017), whether the team is committed (Powell et al., 2006), and whether they will be supportive in high stress situations (Burtscher et al., 2018). This sort of unknowingness can be resolved, for instance, by increasing experience working together as a team (Beckman, 2006; Kor, 2003; Zheng, 2012) or, in other words, increasing shared venture experience.

At the venture-level, entrepreneurs hold expectations what to do next. This might be more or less clear to entrepreneurs. Not only might it be unclear to entrepreneurs which specific business

model to develop (Hsieh et al., 2007), but also the path towards one specific business model and its subsequent tasks might be opaque (Barreto, 2012). As a firm, this relates to the question "how can a firm know what to do next" (Wiltbank, Dew, Read, & Sarasvathy, 2006, p. 981). For entrepreneurs directing the venture, this means facing uncertainty what to do next. This level of unknowingness can be resolved by gathering experience about the aspired business model, for instance, by gathering experience about the technology to be used (Haynie, Shepherd, & McMullen, 2009), the target business model (Andries et al., 2013) or market demand (Autio et al., 2013).

Summary

In this section, I briefly summarize the critical elements of expectancy theory and the relevant definitions made in the previous chapter, which will serve as a ground for deriving the hypotheses in the next chapter. A summary of all previous definitions is provided in Table 9.

First, expectancy theory can help to describe entrepreneurs' motivation as the result of valence, instrumentality and expectancy (Vroom, 1964). Adapting the definition provided by Pinder (1998), I define entrepreneurs' motivation as a set of energetic forces that originate both within as well as beyond the entrepreneur, to initiate entrepreneurial behavior and to determine its form, direction, intensity, and duration. More specifically, I focus on entrepreneurs' motivation to initiate entrepreneurs' behavior to achieve goal progress (Brunstein, 1993).

Valence describes the outcome—reward link (Vroom, 1964). With outcome, I refer to the successful establishment of a venture with a viable business model (Amit & Zott, 2001). Subsequently, the reward link describes to what extent this is desirable to the entrepreneur. Given that individuals who have already decided for an entrepreneurial career are likely to consider being an entrepreneur and having a successful venture as desirable, valence will not be in the main focus of this thesis.

Instrumentality describes the performance—outcome link (Vroom, 1964). In the entrepreneurial context, instrumentality describes to what extent task completion translates into the successful establishment of a venture with a viable business model. Specifically in this thesis, I focus on beliefs formed about the opportunity and team, which are central to entrepreneurship (Shane & Venkataraman, 2000). Opportunity beliefs refer to entrepreneurs'

belief that the opportunity is marketable, feasible and desirable (Grégoire et al., 2010b). Team beliefs refer to entrepreneurs' trust in the team, that is, belief in and willingness to act on the basis of, the words, actions, and decisions of another (adapted from McAllister, 1995).

Last, expectancy describes the effort—performance link (Vroom, 1964). In the entrepreneurial context, expectancy describes to what extent task effort translates into task completion. This notion is captured by expectancy's reverse side, namely, uncertainty. In defining uncertainty, I follow Townsend et al. (2018) who define uncertainty as a form of knowledge problem or unknowingness which expresses as an inability to make prediction. Specifically in the

Expectancy theory element		**Further application in entrepreneurial context**	
Dimension	**Definition**	**Dimension**	**Definition**
Motivational force	Entrepreneurs' motivation: Set of energetic forces that originate both within as well as beyond the entrepreneur, to initiate entrepreneurial behavior and to determine its form, direction, intensity, and duration (adapted from Pinder, 1998)	Entrepreneurs' motivation	Entrepreneurs' behavior to achieve goal progress (Brunstein, 1993)
Valence (outcome—reward link)	To what extent is the successful establishment of a venture with a viable business model desirable	None	
Instrumentality (performance—outcome link)	To what extent does task completion translate into the successful establishment of venture with a viable business model	Opportunity belief	Belief that an opportunity is marketable, feasible and desirable (Grégoire et al., 2010b)
		Team belief	Trust in the team, i.e., belief in and willingness to act on the basis of, the words, actions, and decisions of another (adapted from McAllister, 1995)
Expectancy (effort—performance link)	To what extent does task effort translate into task completion	Uncertainty	Inability to predict to what extent task effort translates into task completion (adapted from Townsend et al., 2018)
		Individual-level uncertainty	Inability to predict to what extent the entrepreneur can complete a task
		Team-level uncertainty	Inability to predict to what extent the team can complete a task
		Venture-level uncertainty	Inability to predict what to do next

Table 9: Overview of definitions
Source: Own illustration

entrepreneurial and expectancy theory context, I define uncertainty as entrepreneurs' inability to predict to what extent task effort translates into task completion, that is, uncertainty represents expectancy. I argue that uncertainty materializes at three distinct levels, that is, at the individual-, team-, and venture-level. Individual-level uncertainty refers to entrepreneurs' inability to predict to what extent entrepreneurs can complete a task. This uncertainty can be resolved, for instance, by entrepreneurial experience. Team-level uncertainty refers to entrepreneurs' inability to predict to what extent the team can complete a task. This uncertainty can be resolved, for instance, by shared venture experience with the team. Venture-level uncertainty refers to entrepreneurs' inability to predict what to do next. This uncertainty can be resolved, for instance, by gathering experience about the aspired business model.

2.3 Hypotheses development

In the chapter to follow, I derive eight hypotheses to predict entrepreneurs' goal progress based on expectancy theory. As belief are not only the starting point of the entrepreneurial journey (Shane & Venkataraman, 2000), but are also are instrumental to entrepreneurial motivation (Edelman & Yli-Renko, 2010; Laffineur et al., 2019, forthcoming) to an extent that effects of expectation diminish when controlling for beliefs (Townsend et al., 2010; Vilanova & Vitanova, 2020), I build hypotheses related to opportunity and team beliefs. Further following expectancy theory, expectancies moderate the motivational effect of instrumentality. Hence, for each belief, I will start deriving the immediate effect on entrepreneurs' goal progress and will continue to predict the contingent effect of expectancies; or in this case of uncertainty, at a venture-, team-, and individual-level. In the following, I will start with the effects of opportunity beliefs before continuing with team beliefs. After all hypotheses have been developed, I will summarize the hypothesized effects.

2.3.1 Opportunity beliefs

Recapturing the definition from above, opportunity beliefs refer to entrepreneurs' belief that an opportunity is marketable, feasible and desirable (Grégoire et al., 2010b). They refer to entrepreneurs' perception and indicate that they work on an opportunity, which – in case entrepreneurs successfully act on it – will translate into profit (Shane & Venkataraman, 2000). The origin of the opportunity is argued to be market failure and the perception of an opportunity means entrepreneurs perceive a way of action solving this market failure (Grégoire et al., 2010b, p. 117). Entrepreneurs' perceived opportunity beliefs are influenced by three distinct factors.

Following Grégoire et al. (2010b), marketable refers to entrepreneurs' perception that a specific supply or technology can serve the need of a particular market; feasible refers to entrepreneurs' perception that it is "reasonably possible to achieve [the opportunity] within a foreseeable future" (Grégoire et al., 2010b, p. 122); and desirable refers to entrepreneurs' perception that the new goods or services to be built are useful as well as necessary and/or provide value (non-necessarily economic). In the following, I argue that opportunity beliefs increase entrepreneurs' confidence in the opportunity, which, in turn, lead to entrepreneurs working harder and, thereby, perceiving more goal progress.

Following the description of opportunity beliefs above, opportunity beliefs indicate that an envisioned course of action will lead to a profit. In other words, opportunity beliefs suggest that working hard on the opportunity will pay off in profits in the foreseeable future (Grégoire et al., 2010b). Generally, entrepreneurs who believe working hard on a venture translates into profit show higher intentions to start a new venture (Dubard Barbosa et al., 2019; Renko et al., 2012). Specifically, entrepreneurs' confidence in the opportunity has been positively linked to entrepreneurs' decision to invest effort towards venture creation (Edelman & Yli-Renko, 2010; Laffineur et al., 2019, forthcoming; Renko et al., 2012; Vilanova & Vitanova, 2020) and decision to start a venture (Autio et al., 2013; Dimov, 2010; Dubard Barbosa et al., 2019; Renko et al., 2012; Townsend et al., 2010; Vilanova & Vitanova, 2020).

While to the best of my knowledge no entrepreneurial study focuses explicitly on the motivational effect stemming from the opportunity past venture foundation, there is reason to expect that entrepreneurs' confidence in the opportunity extends to entrepreneurs' motivation beyond the decision to start a venture. In particular, studies examining related constructs find such a positive link. For instance, Townsend et al. (2010) as well as Dubard Barbosa et al. (2019) frame opportunity beliefs as overconfidence, that is, entrepreneurs' "overestimat[ion of] the likelihood that their venture will succeed and that they can ensure such success" (Hayward et al., 2006, p. 161), which they argue leads to entrepreneurs' decision to start a venture despite failure being more likely than not (Dubard Barbosa et al., 2019). In turn, overconfidence has been positively related to high level of commitment and effort (McMullen & Kier, 2016). Similarly, excessive level of optimism[8] have been linked to increased venture performance

[8] In their work on entrepreneurial overconfidence, Townsend et al. (2010) suggest that optimism and overconfidence are closely related as they not only speak of overconfidence, but of 'optimistic overconfidence' (p. 193).

(Hmieleski & Baron, 2008b) and delayed termination of projects (Lowe & Ziedonis, 2006), which suggests continuously high level of entrepreneurial motivation post venture foundation. Thus, the more entrepreneurs are convinced of the opportunity, the more they are convinced hard work will pay off. Following expectancy theory (Vroom, 1964), entrepreneurs are more motivated to work hard advancing their venture and hence will perceive more goal progress.
In contrast, the less entrepreneurs are convinced of the opportunity, the less they are convinced that their hard work will pay off. In turn, they will perceive goal progress to be lower. I predict:

HYPOTHESIS 1a: Entrepreneurs' opportunity belief is positively related to entrepreneurs' perceived goal progress.

Moderating effect of uncertainty

Following expectancy theory, the motivational effect of instrumentality is contingent on entrepreneurs' expectancy. As outlined in the previous chapter, expectancy refers to entrepreneurs' perceived predictability of the task effort—task completion link. This notion of predictability is most commonly captured by its reverse side in entrepreneurship, that is, uncertainty (see Dimov, 2010; Edelman & Yli-Renko, 2010; McMullen & Shepherd, 2006; Vilanova & Vitanova, 2020). Generally, this means that under increasing uncertainty, the perceived predictability of the task effort—task completion link weakens. While uncertainty from the venture, team and individual generally weaken the predictability of the task effort—task completion link, I will argue in the following how each uncertainty specifically affects entrepreneurs' motivation. I start how venture-level uncertainty affects entrepreneurs' motivation before continuing with team- and individual-level uncertainty.

Moderating effect of venture-level uncertainty

The first expectancy to be considered is venture-level uncertainty. Before explaining the mechanism, I briefly recapture what venture-level uncertainty means. At the venture-level, entrepreneurs hold expectations what to do next. Predicting what to do next is challenging for entrepreneurs as it might be unclear which business model to select (Hsieh et al., 2007) and how to get to one specific business model (Barreto, 2012). In other words, there is no pre-defined procedure entrepreneurs can follow to reach their goals. This lack of a pre-defined procedure means entrepreneurs do not know which activity to do next or when to do it (Eisenhardt & Schoonhoven, 1990; Schoonhoven et al., 1990), for instance, whether to take

care of accounting or human resource management first (Laffineur et al., 2019, forthcoming), whether to pitch to customers or investors first (Baron et al., 2016b) or whether to focus on prototype development or releasing it as is (Schoonhoven et al., 1990).

This notion of unpredictability is best captured by task uncertainty (Withey, Daft, & Cooper, 1983). Task uncertainty means to what extent a task is analyzable and can be completed following an "objective, computational procedure to solve" (Withey et al., 1983, p. 46). In the following, I argue that task uncertainty or not knowing what to do next weakens entrepreneurs' perceived predictability of the task effort—task completion link affecting entrepreneurs' motivation and perceived goal progress. This relates to (i) entrepreneurs' ability to process new information, (ii) entrepreneurs' perceived ability to complete tasks, and (iii) entrepreneurs' goal selection.

The first two arguments relate to entrepreneurs' mental model of the world. Mental models are cognitive constructs entrepreneurs hold to understand how the world around them works (Johnson-Laird, 1983). This includes how tasks are connected and how they contribute to the establishment of the venture (Goldsmith & Kraiger, 1997). Based on this mental model, entrepreneurs decide what do in order to complete a task (Johnson Laird, 1983; Rouse & Morris, 1986). This means entrepreneurs' mental model conveys entrepreneurs' prediction of the task effort—task completion link. This also means that under higher task uncertainty entrepreneurs' mental model is more opaque, i.e., provides less guidance to what extent tasks contribute to the establishment of the venture and how tasks relate to each other.

For one, this means entrepreneurs' ability to process new information is impaired. Mental models offer entrepreneurs a grid to cluster new information (Grégoire, Barr, & Shepherd, 2010a), which makes the proper processing of new information more likely (Morris, Kuratko, Schindehutte, & Spivack, 2012). As the mental model is more opaque under higher task uncertainty, it is unclear to entrepreneurs whether new information collected on the entrepreneurial journey require attention or not. More so, whether new information relate to tasks necessary to achieve goal progress or can be neglected. For instance, entrepreneurs might receive feedback from customers and employees, which is common along the entrepreneurial journey (Domurath et al., 2020). Yet, under higher task uncertainty, it is unclear to entrepreneurs whether they need to focus on both the customer and employee or just one of them. It is also unclear to what extent tasks emerging from the feedback relate to each other, for instance, whether solving the customer feedback task also addresses the employee feedback or vis-à-vis. This means it is unclear to entrepreneurs how much task effort is required to

achieve task completion. In turn, entrepreneurs are less motivated to work hard on the opportunity and, thus, perceive less goal progress. In contrast, under lower task uncertainty, it is clear to entrepreneurs what to do next and how different tasks relate to each other. This means entrepreneurs can better predict how much task effort is required to achieve task completion. In turn, entrepreneurs are more motivated to work hard on the opportunity and, thus, perceive goal progress to be higher.

For another, a more opaque mental model means entrepreneurs feels less able to complete tasks. Mental models have been positively related to individuals' perceived ability (Gigerenzer, Hoffrage, & Kleinbölting, 1991). In turn, entrepreneurs' ability perceptions have been positively linked to entrepreneurs' motivation (Dimov, 2010; Dubard Barbosa et al., 2019) and decision to invest effort (Laffineur et al., 2019, forthcoming; Vilanova & Vitanova, 2020). Thus, as under higher task uncertainty entrepreneurs feel less able to complete a task, they will be less motivated. Consequently, entrepreneurs work less hard on the opportunity and, thus, perceive less goal progress. In comparison, under lower task uncertainty, entrepreneurs feel better able to complete a task. This means entrepreneurs work harder on their opportunity and, in turn, perceive goal progress to be higher.

Last, under higher task uncertainty, entrepreneurs are likely to find it more difficult to select a motivating goal. Following literature on task motivation, Bellu and Sherman (1995) find entrepreneurs' planning of the future and setting goals to be positively related to entrepreneurs' motivation and behavior. The opportunity to derive motivation from engaging in planning and goal selection is, however, limited as under higher task uncertainty entrepreneurs do not know what to do next. Also, setting a goal which is neither too simple nor too ambitious is difficult as entrepreneurs are uncertain how much effort is required to achieve a specific level of task completion or goal progress (Hirst, 1987). Yet, selecting goals which are neither too simple nor too ambitious for entrepreneurs is important, as goal difficulty motivates entrepreneurs to invest effort (Locke, 1968) but only as long as the goal does not become unattainable, which can demotivate them (Baron et al., 2016b). As under higher task uncertainty entrepreneurs do not know what to do next, they are unlikely to plan tasks and select goals which are motivating. Thus, entrepreneurs are less motivated to work hard on the opportunity and, thus, perceive less goal progress. In contrast, under lower task uncertainty, entrepreneurs are better able to know what to do next making it more likely to plan tasks and select goals which are motivating. Thus, entrepreneurs are more motivated to work hard on the opportunity and tend to perceive goal progress to be higher.

Taken together, under higher task uncertainty, entrepreneurs are less able to process new information, feels less able to complete tasks and are less likely to select a motivating goal. In turn, entrepreneurs are less motivated to work hard on the opportunity and, thus, perceive less goal progress.
In contrast, under lower task uncertainty, entrepreneurs are better able to process new information, feel more able to complete tasks and are more likely to select motivating goals. This means, entrepreneurs are more motivated to work hard on the opportunity and, thus, perceive more goal progress. I predict:

HYPOTHESIS 2a: Under higher task uncertainty, the relationship between entrepreneurs' opportunity belief and entrepreneurs' perceived goal progress will be weaker compared to lower task uncertainty.

Moderating effect of team-level uncertainty

The second important contingency is described by team-level uncertainty. This type of uncertainty refers to entrepreneurs' perception to what extent the team can complete a task. This prediction requires entrepreneurs to know who in the team possesses which skill and experience (Eisenhardt & Schoonhoven, 1990), who is dependable (De Jong & Elfring, 2010), whether the team tolerates and learns from mistakes (Weinzimmer & Esken, 2017), whether the team is committed (Powell et al., 2006), and whether the team is supportive under pressure (Burtscher et al., 2018). Under absence of knowledge about these factors, entrepreneurs do not know how to work together in the team, whether the team can collaborate effectively, or whether the team will be supportive on the entrepreneurial journey.
This sort of unknowingness can be resolved by possessing shared experience working together in the venture or, in other words, shared venture experience (Beckman, 2006; Kor, 2003; Zheng, 2012). Based on this experience, entrepreneurs can predict to what extent the team can complete a task. In the following, I argue that under lower shared venture experience entrepreneurs' perceived task effort—task completion link is weaker affecting entrepreneurs' motivation and perceived goal progress. This relates to (i) entrepreneurs' decision to how to effectively organize the venture and (ii) entrepreneurs' benefits from team cognition.

First, under lower shared venture experience, entrepreneurs cannot decide how to effectively organize the venture. As under lower shared venture experience entrepreneurs are unaware of

skills and expertise (Eisenhardt & Schoonhoven, 1990) as well as information (Rau, 2005) in the team, they cannot decide for the most effective organizational form (Hsieh et al., 2007), role allocation (Jung et al., 2017), or allocation of decision-making rights (Alvarez & Barney, 2005). This means team members cannot specialize (Rau, 2005), i.e., be held responsible for solving specific tasks, and tasks cannot be allocated by skill (Rego et al., 2019) but, for instance, by chance who encounters the task first or has spare capacity. This not only reduces team effectiveness (Blatt, 2009; Rego et al., 2019) but also prevents team members to become an expert for a specific set of tasks as learning requires repeated and intense exposure to similar tasks (Toft-Kehler et al., 2014).

The implication for entrepreneurs' motivation is two-fold. For one, reduced team effectiveness suggests that entrepreneurs' efforts might be offset by poor team member performance, which is demotivating for entrepreneurs (Hüffmeier et al., 2017). For another, entrepreneurs are more likely to be responsible for a task they are unfamiliar with and feel a lack of competence to solve, which again negatively affects entrepreneurs' motivation (Dimov, 2010; Dubard Barbosa et al., 2019) and decision to invest effort (Laffineur et al., 2019, forthcoming; Vilanova & Vitanova, 2020). Consequently, entrepreneurs are less motivated to work hard on the opportunity and, thus, perceive less goal progress.

In contrast, under higher shared venture experience, entrepreneurs can decide how to effectively organize the venture. This means, team's performance is less likely to offset entrepreneurs' effort and entrepreneurs are more likely to work on tasks they feel competent to solve. Thus, entrepreneurs are more motivated to work hard on the opportunity and their perception of goal progress is likely to be higher.

Second, under lower shared venture experience, entrepreneurs' benefits from team cognition are limited. Team cognition refers to the cognitive mechanism affecting processes and outcomes in teams (Healey et al., 2015) and, broadly speaking, is about team knowledge and beliefs, i.e., how knowledge and beliefs are distributed in the team, the team members' awareness of the distribution of knowledge across the team members and their capability to access knowledge for information processing or reaching consensus (Mohammed & Dumville, 2001). To discuss the effects for the team, I follow the work by Mohammed and Dumville (2001) who provide an integrative team knowledge framework which captures team mental models, which is a central element of team cognition (Healey et al., 2015), and distinct, yet closely related concepts, i.e., information sharing and transactive memory systems, group learning, and cognitive consensus. Specifically, team mental models are "knowledge structures

held by members of a team that enable them to form accurate explanations and expectations for the task, and in turn, to coordinate their actions and adapt their behavior to demands of the task and other team members" (Cannon-Bowers, Converse, & Salas, 1993, p. 221).

Team mental models held by entrepreneurs help explicit coordination (e.g., role allocation) within the team and, subsequently, information processing (Healey et al., 2015). Such information processing capabilities can also emerge due to group learning, for instance, learning of procedure heuristics, i.e., how to exploit the opportunity, or temporal heuristics, i.e., how to time activities, which help the team operate more efficiently (Eisenhardt, 2013).

Team mental models also help entrepreneurs to anticipate behavior and responses of team members (Mathieu, Heffner, Goodwin, Cannon-Bowers, & Salas, 2005), which in turn helps implicit coordination. Specifically, entrepreneurs can "adapt their own behavior to facilitate the team's task completion without explicit discussion of who should do what" (Rico, Sánchez-Manzanares, Gil, & Gibson, 2008, p. 164). Team mental models also help reaching cognitive consensus in the team, which increases decision speed (Kownatzki, Walter, Floyd, & Lechner, 2013; Talaulicar et al., 2005).

Next to team mental models, which refer to the homogeneity of knowledge held in the team, transactive memory systems are another cognitive concept, which however refers to knowledge about the heterogenous distribution of knowledge within the team (Kitaygorodskaya, 2006), i.e., knowledge about expertise held by individual team members. A transactive memory system is a "shared division of cognitive labor with respect to the encoding, storage, retrieval, and communication of information from different knowledge domains" (Brandon & Hollingshead, 2004, p. 633). Transactive memory systems enable entrepreneurs to access relevant information and expertise in the team when needed (Rau, 2005). This also means entrepreneurs are not required to remember every information themselves, which reduce entrepreneurs' cognitive load and effort (Hollingshead, 1998).

In light of these benefits, multiple studies have positively linked team mental models (Bachrach et al., 2019; Healey et al., 2015; Lim & Klein, 2006; Mathieu, Heffner, Goodwin, Salas, & Cannon-Bowers, 2000; Zhang, Hempel, Han, & Tjosvold, 2007) and transactive memory systems (Akgün, Byrne, Keskin, Lynn, & Imamoglu, 2005; Faraj & Sproull, 2000; Lewis, 2004; Rau, 2005; Zhang et al., 2007) to increased team or venture performance.

However, before entrepreneurs can utilize the benefits of team mental models and their team's transactive memory, they are required to have experience working with this specific team. Shared experience working together in the venture is required for the team to develop team member schemas (Rentsch & Klimoski, 2001), that is, "the degree to which team members have

similar or compatible knowledge structures for organizing and understanding team-related phenomena" (p. 108). Such team members schemas are the basis for team mental models (Klimoski & Mohammed, 1994). Further, shared venture experience is required to unlock the benefits of the transactive memory systems (Zheng, 2012) as entrepreneurs need to know who in the team possesses which capabilities and information.

In contrast, under lower experience working together in the venture, the functioning of team mental models and transactive memory systems are limited, which reduces their benefits for entrepreneurs. In consequence, entrepreneurs' effort in realizing the opportunity might be offset by poor team functioning. Yet, in order to be motivated to invest effort, entrepreneurs needs to be convinced own efforts will not be offset by the team (Hüffmeier et al., 2017). Thus, under lower shared venture experience, entrepreneurs are less motivated to work hard on the opportunity and, thus, perceive less goal progress.

In contrast, under higher shared venture experience, entrepreneurs are more likely to benefits from the functioning of team mental models and transactive memory systems. In turn, entrepreneurs are less likely to experience offsets by the team. Consequently, entrepreneurs tend to be more motivated to work hard on the opportunity and, in turn, perceive more goal progress.

Taken together, under lower shared venture experience, entrepreneurs cannot decide how to effectively organize the venture and benefits from team cognition, i.e., team mental models and transactive memory systems, are limited. As this increases the likelihood entrepreneurs' efforts are offset by poor team performance, entrepreneurs are less motivated to work hard on the opportunity and, thus, perceive less goal progress.

In comparison, under higher shared venture experience, entrepreneurs can decide how to effectively organize the venture and are more likely to experience benefits from team cognition. Thus, they are less likely to experience offsets by poor team performance. In turn, entrepreneurs are more motivated to work hard on the opportunity and, thus, perceive more goal progress. Therefore, I predict:

HYPOTHESIS 3a: Under lower shared venture experience, the relationship between entrepreneurs' opportunity belief and entrepreneurs' perceived goal progress will be weaker compared to higher shared venture experience.

Moderating effect of individual-level uncertainty

The third important contingency is described by individual-level uncertainty. At the individual-level, entrepreneurs hold expectations to what extent they can complete a task. In particular, entrepreneurs face uncertainty how to manage the entrepreneurial journey. This extends to tasks, such as, developing products, pitching to customers or convincing investors (Baron et al., 2016b), using entrepreneurial methods like effectuation (Perry et al., 2012), managing negative feedback (Domurath et al., 2020), and coping with demands like role uncertainty (Hoang & Gimeno, 2010) or stress (Uy et al., 2013).

In case entrepreneurs possess experiences from previous venturing efforts, they can use past entrepreneurial experiences to manage such tasks (Chen et al., 1998; Dimov, 2010; Gielnik et al., 2018; Zhao et al., 2005). Consequently, entrepreneurs' experience affects entrepreneurs' decision-making (Holcomb, Ireland, Holmes Jr, & Hitt, 2009). Yet, under lower entrepreneurial experience, entrepreneurs perceive greater uncertainty how to manage entrepreneurial tasks and to what extent they can complete entrepreneurial tasks. Thus, entrepreneurs' perceived task effort—task completion link is weaker affecting entrepreneurs' motivation and perceived goal progress. In the following, I explain the underlying mechanism in detail, which relate to (i) entrepreneurs' ability to manage the entrepreneurial journey and (ii) entrepreneurs' information processing.

First, entrepreneurial experience is likely to enable entrepreneurs to manage the entrepreneurial journey and, in turn, increases entrepreneurs' confidence in translating aspirations into reality. This line of thought finds support in the review on entrepreneurial learning by Politis (2005), who suggests that experienced entrepreneurs are more effective in realizing opportunities and more capable in dealing with the liability of newness. Partially, this relates to learnings what action and resources are required to realize venture aspirations (Farmer et al., 2011). Such actions can be the use of entrepreneurial methods like heuristics (Wright, Hoskisson, Busenitz, & Dial, 2000) or effectuation (Perry et al., 2012) to deal with uncertainty. In employing effectuation, entrepreneurs use experiments instead of action planning (causation) to limit potential losses and remain flexible in decision-making under uncertainty (Chandler, DeTienne, McKelvie, & Mumford, 2011). Using such experiments can help selecting the business model (Andries et al., 2013), assessing market demand (Autio et al., 2013) or identifying the target market (Andries & Debackere, 2007). Effectuation is not only effective to manage the founding

process, but is also more commonly applied by experienced entrepreneurs rather than by novice entrepreneurs (Dew, Read, Sarasvathy, & Wiltbank, 2009).

Given entrepreneurs' experience about managing the entrepreneurial journey, they are more confident to be able to translate aspirations into reality. Indeed, studies show that experienced entrepreneurs not only are more effective in translating entrepreneurial intentions into action (Gielnik et al., 2018), but are also more confident their venture to be successful (Gottschalk et al., 2017). In turn, entrepreneurs' confidence in their abilities has been positively linked to entrepreneurs' motivation (Dimov, 2010; Dubard Barbosa et al., 2019) and entrepreneurs' decision to invest effort (Laffineur et al., 2019, forthcoming; Vilanova & Vitanova, 2020). Thus, under higher entrepreneurial experience, entrepreneurs feel more able to complete a task and will be more motivated to work hard on their opportunity leading to more perceived goal progress.

Vice-versa, under lower entrepreneurial experience, entrepreneurs feel less able to complete a task and will be less motivated. Consequently, entrepreneurs work less hard on their opportunity and, in turn, perceive less goal progress.

Second, entrepreneurial experience affects entrepreneurs' information processing. The more entrepreneurial experience entrepreneurs have, the fewer events encountered on the journey are entirely new to entrepreneurs making it more likely to properly process information (Morris et al., 2012). This ease of processing also relates to the increasingly rich mental models experienced entrepreneurs hold (Grégoire et al., 2010a; Westhead, Ucbasaran, & Wright, 2005). Given their repeated practice, experienced entrepreneurs can absorb and process more information leading to the buildup of mental models with stronger emphasis on positive cashflow generation affecting entrepreneurs' opportunity recognition (Baron & Ensley, 2006; Gruber, Kim, & Brinckmann, 2015). Further, as experienced entrepreneurs consider a broader set of opportunities before they decide to exploit one particular opportunity (Gruber, MacMillan, & Thompson, 2008), they are accustomed to respond to information making opportunities appear promising. This means experienced entrepreneurs respond stronger to opportunity cues and, thus, stronger to an opportunity once identified.

In contrast, inexperienced entrepreneurs respond weaker to opportunity cues and, thus, weaker to an opportunity once identified. Consequently, entrepreneurs work less hard on the opportunity and, in turn, perceive less goal progress.

Taken together, under lower entrepreneurial experience, entrepreneurs are less confident in their abilities to manage tasks on the entrepreneurial journey and respond weaker to opportunity cues. This means entrepreneurs are less motivated to work hard on the opportunity and, thereby, perceive less goal progress.
In comparison, under higher entrepreneurial experience, entrepreneurs are more confident in their abilities to manage tasks on the entrepreneurial journey and respond stronger to opportunity cues. This means entrepreneurs are more motivated to work hard on the opportunity and, in turn, they are more likely to perceive goal progress to be higher. I predict:

HYPOTHESIS 4a: Under lower entrepreneurial experience, the relationship between entrepreneurs' opportunity belief and entrepreneurs' perceived goal progress will be weaker compared to higher entrepreneurial experience.

2.3.2 Team beliefs

After elaborating on the effects of opportunity beliefs, I continue with the relationship between team beliefs and entrepreneurs' perceived goal progress. In this section, I build on the definition of team beliefs from Chapter 2.2 (p. 20ff): Team beliefs refer to entrepreneurs' trust in the team, that is, the belief in and willingness to act on the basis of, the words, actions, and decisions of another. Trusting the team is important for entrepreneurs as they not only commonly realize the opportunity jointly with others (Dimov, 2007; Klotz et al., 2014; Ruef et al., 2003) but also because "team involvement is often necessary for success" (Schjoedt et al., 2013, p. 3). In other words, the team is instrumental to successfully establish a venture with a viable business model. As outlined in Chapter 2.2, this dependence might be due to entrepreneurs' need (Gartner, 1985) but also due to entrepreneurs' aspired benefits from the team in realizing the venture, e.g., in offering the possibility of specialization (Rau, 2005), in turn increasing information processing capabilities, particularly in processing unfamiliar information (Healey et al., 2015), or in offering emotional support (Burtscher et al., 2018).

Before describing the mechanism affecting entrepreneurs' motivation, I want to make the distinction clear between team beliefs or trust in the team and team-level uncertainty or lower shared venture experience. Team-level uncertainty refers to entrepreneurs' inability to predict to what extent the team can complete a task. This relates to entrepreneurs' lower experience in working together with the team. This means entrepreneurs are unaware how capabilities or

information are distributed in the team and who could reliably solve a task. Thus, he or she is unaware how to *access* capabilities, information or reliability within a team. In contrast, the notion of team beliefs or trust conveys the perception that capabilities, information or reliability *exist* within a team. This means, entrepreneurs believe in the capabilities of their team members similar to believing the opportunity is 'capable' to contribute towards a successful venture.
To make the difference even more clear, one might think of the following situation: Imagine a nascent entrepreneur seeking to partner up with a successful and experienced entrepreneur. The nascent entrepreneur might be convinced the experienced entrepreneur possesses what is required to found a venture (i.e., high level of trust), but the nascent entrepreneur does neither know what specific capabilities and information the experienced entrepreneur holds nor does he or she know whether the experienced entrepreneur is dependable (i.e., high level of team-level uncertainty).

In the following, I elaborate on the immediate effect of trust in the entrepreneurial team on entrepreneurs' perceived goal progress. For this, I ground my thoughts on arguments relating to entrepreneurs' cognitive and affective dependency on the team. This relates to (i) entrepreneurs' belief in team members' capabilities and dependability, (ii) functioning of team cognition, (iii) team members' attitudes, (iv) psychological safety in the team, and (v) entrepreneurs' emotion and stress processing.

Starting with entrepreneurs' cognitive dependency, trust indicates entrepreneurs' belief in team members' capabilities and dependability, which is helpful to advance the venture. This idea follows McAllister's (1995) definition of cognitive trust, which describes a positive belief in the dependability and competence of team members. Following expectancy theory (Vroom, 1964), entrepreneurs are required to hold this positive belief about team members in order to be motivated. Otherwise, entrepreneurs are likely to be convinced that any personal effort invested will be offset by team members' poor performance. This line of thought has been supported in several empirical studies. Emich (2012) finds individuals in dyadic team challenges to exert more effort when perceiving their team member as being capable to contribute to the joint goal. Similarly, De Jong and Elfring (2010) find trust to be positively related to team effort as trust indicates team members can depend on other team members to diminish their efforts. Relying on expectancy theory, Hüffmeier et al. (2017) examine athletes' motivation to exert effort in team swimming contests. They find athletes believing that their team is capable of winning a contest to exert more effort compared to athletes who are not convinced of team's capabilities.

Trust's importance is further stretched by Hertel et al. (2004), who suggest to expand expectancy theory by including trust as an additional dimension of expectancy as individuals only invest effort if they do not expect their teammates to engage in free-riding.

Further, multiple studies have demonstrated how team members' capabilities are beneficial for the advancement of the venture, which suggests believing in the team motivates the entrepreneur. For instance, Ucbasaran et al. (2003) find that team members' skills and different perspective are particularly helpful in solving complex tasks. In particular, differing skill sets can be helpful to earn an 'entrepreneurial rent' (Foss, Klein, Kor, & Mahoney, 2008, p. 87). Also differing skills and experiences can advance the venture as the team employs techniques, such as, perspective-taking to tackle challenges through varying lenses (Hoever, van Knippenberg, van Ginkel, & Barkema, 2012), or uses the diversity to process feedback (Hoever, Zhou, & van Knippenberg, 2018). Trusting team members can also simplify role and task allocation in teams (Jung et al., 2017). Even before structures are established, trusting enables the formation of informal hierarchies which are particularly helpful in "situations that are ambiguous, ill-defined, and unstructured" (Oedzes, van der Vegt, Rink, & Walter, 2019, p. 311).

This suggests that trusting in team members' competences and dependability motivates entrepreneurs as effort invested will not be offset by team members. Because of this higher level of effort invested, they will be more likely to perceive more progresses towards their venture goals. In contrast, if trust in the team is low and entrepreneurs are not convinced of their team members' competences and dependability, they might consider their effort as futile, are likely to be less motivated to advance their venture, and thus, are less likely to make progress towards their venture goals.

The second argument suggesting a positive effect of trust on entrepreneurs' perceived goal progress relates to team cognition, in particular, team mental models; specifically, that trust fosters team mental models and, thereby, improves team's efficiency. Team mental models have been introduced earlier to explain the effect of opportunity beliefs on entrepreneurs' motivation and are equally important to understand the effects of trust. Trust is crucial for team mental models to emerge (Lim & Klein, 2006) and promotes cognitive alignment in the team (Nooteboom, 2002). Again following the framework of Mohammed and Dumville (2001), I discuss the effect of trust on team mental models and its closely related concepts, i.e., information sharing and transactive memory systems, group learning, and cognitive consensus. I argue that trust affects each of these dimensions and, thus, improves team's efficiency.

Starting with information sharing and transactive memory system, trust is suggested to increase communication of work-related matters in the team and, in turn, is suggested to increase the shared understanding and accuracy of common information held in the team (Rico et al., 2008). Empirically, Fisher et al. (2012) find trust to fosters team member's coordination efforts as team members trusting in each other's skills are more likely to build on each other's ideas requiring increased team coordination compared to low trust which means team members focus on working on their own ideas. In turn, similarity of team members' mental models increases, which improves implicit coordination and, ultimately, team performance (Fisher et al., 2012). Similarly, trust has been shown to foster exchange of information in general (Talaulicar et al., 2005), exchange of knowledge (Hsu & Chang, 2014), focus on leveraging team members' capabilities (Dubrow, Emich, & Behrend, 2018) and error communication (van Dyck, Frese, Baer, & Sonnentag, 2005). These aspects are required for group learning.

Specifically, trust also affects entrepreneurs' collaborative environment enabling group or organizational learning (Barczak et al., 2010). Group learning is important as it helps entrepreneurs transform problems faced on the entrepreneurial journey into progress (Funken, Gielnik, & Foo, 2020). Learnings can also comprise the development of heuristics helping team members how to complete entrepreneurial task (Eisenhardt, 2013). Trust enables the learning process as it buffers the potentially negative effect of feedback in causing task conflict (Peterson & Behfar, 2003; Simons & Peterson, 2000). Trust also increases entrepreneurs' willingness to accept feedback from team members (Zand, 1972) and willingness to participate in team processes (Rico et al., 2008).

Last, trust promotes finding cognitive consensus in the team. Trust increases the speed of decision-making (Kownatzki, Walter, Floyd, & Lechner, 2013; Talaulicar et al., 2005) as entrepreneurs believe in team members' capabilities (Talaulicar et al., 2005), which means they perceive less need or are reluctant to engage in monitoring or controlling activities (Langfred, 2004; Mayer, Davis, & Schoorman, 1995). Further, improved timeliness in decision-making also relates to stronger reliance on informal decision-making mechanisms (Zahra, Yavuz, & Ucbasaran, 2006).

These arguments suggest that as trust promotes team mental models in the team and, in turn, increases team efficiency, entrepreneurs are more motivated as efforts are likely not to be offset by team members' performance. Again, these higher levels of motivation tend to be connected to higher levels of perceived goal progress. In contrast, less developed team mental models and a reduced entrepreneurial team efficiency might prevent entrepreneurs from investing high

levels of effort. Thus, when trust in the team is lower, perceived goal progress is likely to be lower as well.

Besides cognitive dependency, entrepreneurs are also affectively dependent on their team. This relates to trust's effect on team members' attitudes, psychological safety, and entrepreneurs' emotion and stress processing. Each mechanism will be explained in the following.

First, trust positively affects team members' attitudes, i.e., team members' commitment, that is, "the relative strength of an individual's identification with, and involvement in, a particular […] team" (Bishop & Scott, 2000, p. 439), and team cohesion, that is, "the degree to which team members work together as they pursue the team's goals" (Mach et al., 2010, p. 774).

Empirically, trust has been positively related to team members' attitudes and effort intentions (Breuer, Hüffmeier, & Hertel, 2016). In increasing commitment, trust has also been shown to foster flexible role orientation which drives proactive work behavior in the organizational context (Parker, Williams, & Turner, 2006). This also suggests that in the entrepreneurial team context team members proactively engage in tasks outside their current role. Perceiving this commitment leads to motivational spill-overs (Breugst, Domurath, Patzelt, & Klaukien, 2012), which affects individuals goal-setting, e.g., selecting more difficult goals (Mulvey & Klein, 1998). From a social exchange perspective (Emerson, 1976), team members can also feel obliged to return high commitment given their perception of high team commitment.

Similarly, Mach et al. (2010) argue that positive expectations of team members, i.e., trust in team members, foster team cohesion given the perceived obligation to contribute to the joint team outcome. In turn, team cohesion positively affects team efficiency as team members are aware of team members' capabilities and are committed to success (Mach et al., 2010; Mathieu, Kukenberger, D'Innocenzo, & Reilly, 2015).

These aspects suggest that trust positively affects team members' attitudes and team cohesion. In turn, entrepreneurs not only perceive their team as more reliable as own efforts will not be offset but also feel obliged to contribute towards the joint team goal of establishing a venture. This means entrepreneurs are more motivated to work hard and, in turn, perceive more goal progress.

In contrast, when trust is low, team members' attitudes and team cohesion are likely negatively affected. In turn, entrepreneurs not only perceive their team as less reliable as own efforts might be offset but also feel less obliged to contribute towards the joint team goal of establishing a venture. This means entrepreneurs are less motivated to work hard and, in turn, perceive less goal progress.

Second, trust affects entrepreneurs' perceived psychological safety and, thus, fosters learning and perceived embeddedness in the team. Following Edmondson, psychological safety is "a shared belief that the team is safe for interpersonal risk taking" (1999, p. 354), which requires entrepreneurs to trust the team (1999). Trust or positive expectations about the team is required as psychological safety means entrepreneurs do not fear to receive personal harm from their behavior, such as, undermining or exploitation (Li & Tan, 2013). This also means entrepreneurs feel motivated to engage in further action as mistakes likely made on the entrepreneurial journey are tolerated by the team (Weinzimmer & Esken, 2017).

Also, psychological safety fosters learning (Edmondson, 1999) as it leads to the genuine expression of concerns (Detert & Burris, 2007), for instance, about how to solve a task (Goncalo, Polman, & Maslach, 2010), increases entrepreneurs' willingness to participate in team processes (Rico et al., 2008), fosters help and feedback seeking (Edmondson, Kramer, & Cook, 2004) as well as knowledge sharing in the team (Zhang, Fang, Wei, & Chen, 2010). Thus, as psychological safety suggests the team is setup for learning, entrepreneurs are less likely to experience that own efforts will be offset by the team.

Besides fostering learning, psychological safety also affects entrepreneurs' perception of embeddedness in the team (Singh, Shaffer, & Selvarajan, 2018). Feeling embedded means entrepreneurs wish to remain with the team (Singh et al., 2018). As this makes team members exit less likely (Allen, 2006), team members become increasingly dependable and entrepreneurs' efforts are less likely to be offset.

As trust via its positive influence on psychological safety motivates entrepreneurs for further action as mistakes are tolerated by the team and makes experiencing offsets of own efforts by the team less likely, entrepreneurs feel more motivated to work hard and, in turn, perceive more goal progress.

In comparison, when trust is low it is more likely that psychological safety is also low. This means entrepreneurs' action is rather risky as mistakes are less tolerated and entrepreneurs' efforts are also more likely to be offset. Thus, entrepreneurs are less motivated to work and, in turn, perceive less goal progress.

Third, trust positively affects entrepreneurs' emotion and stress processing. Trust has been positively linked to reduced relationship conflict (Curşeu & Schruijer, 2010) as team members focus on promoting skills of each other (Dubrow, Emich, & Behrend, 2018). Experiencing conflicts within their team can lead to negative affect for entrepreneurs (Breugst & Shepherd, 2017), which further reduces motivation and effort (Foo et al., 2009). Thus, trusting the team can prevent such negative effects.

Further, trust has been positively related to self-enclosure (Steel, 1991), which is required for relationship building (Pillemer & Rothbard, 2018). Not engaging in self-enclosure means entrepreneurs are required to engage in emotion regulation techniques, such as, surface-acting, which is stressful (Grandey, 2003).

Also, trust can reduce emotional exhaustion (Baer et al., 2015) and serve as a resource to entrepreneurs to cope with stress (Burtscher, Meyer, Jonas, Feese, & Tröster, 2018). This means trust enables entrepreneurs to withstand higher level of stress which can arise due to the challenges and demands faced on the entrepreneurial journey (Rauch et al., 2018).

As trust makes entrepreneurs less likely to experience negative affect from relationship conflicts, less likely to experience stress from emotion regulation techniques, and makes entrepreneurs withstand more stress, trust positively affects entrepreneurs' emotion and stress processing. In turn, entrepreneurs feel more motivated to work hard and, in turn, perceive more goal progress.

In contrast, under low trust entrepreneurs are more likely to experience negative affect from relationship conflicts, more likely to experience stress from emotion regulation techniques, and less able to withstand stress, which suggests entrepreneurs' emotion and stress processing is negatively affected. In turn, entrepreneurs feel less motivated to work hard and they are likely to perceive less goal progress.

Taken together, trust in the entrepreneurial team is important for entrepreneurs as they are cognitively and affectively dependent on their team. Cognitive dependency relates to being dependent on (i) team members' capabilities and dependability as well as (ii) team cognition to act efficiently. Affective dependency relates to (i) team members' attitudes, more specifically, to team members' commitment and team cohesion, (ii) psychological safety, which further fosters learning and embeddedness, and (iii) entrepreneurs' emotion and stress processing. In driving team's efficiency and indicating dependability, they ensure entrepreneurs' efforts will not be offset by the team and motivate entrepreneurs to contribute to the joint goal of establishing the venture. In turn, entrepreneurs are more motivated to work hard and, thus, perceives more goal progress.

In contrast, when trust is low, it suggests that entrepreneurs cannot rely on their team. This means entrepreneurs cannot rely on team members' capabilities and dependability, the functioning of team cognition, team members' positive attitudes, working in a psychologically safe environment, and team members' emotional support. In turn, entrepreneurs are less motivated to work hard and, thus, perceive less goal progress. I, thus, predict:

HYPOTHESIS 1b: Entrepreneurs' trust in the team is positively related to entrepreneurs' perceived goal progress.

Moderating effect of uncertainty

In the following, I argue that the instrumental effect of trust in the team on entrepreneurs' perceived goal progress is moderated by uncertainty. As previously noted, uncertainty is a knowledge problem referring to entrepreneurs' inability to predict to what extent task effort translates into task completion. I argue that under higher level of unknowingness the entrepreneurs are more dependent on their team to realize the opportunity. In other words, under higher uncertainty, the team is more instrumental in serving the goal to establish a venture with a viable business model. Uncertainties at a venture-, team-, and individual-level are likely to shape the relationship between entrepreneurs' trust in the team and their perceived goal progress. I will explain these moderating effects one by one in the sections to follows.

Moderating effect of venture-level uncertainty

Starting with the first moderator, venture-level uncertainty, I refer to entrepreneurs' inability to predict what to do next. As previously defined, predicting what to do next is challenging for the entrepreneurs as it might be unclear which business model to select (Hsieh et al., 2007) or how to get there (Barreto, 2012) as entrepreneurs lack a pre-defined procedure to follow. Specifically, entrepreneurs do not know what activity to do next or when to do it (Eisenhardt & Schoonhoven, 1990; Schoonhoven et al., 1990). This means entrepreneurs face task uncertainty (Withey et al., 1983). In the following, I argue that under higher task uncertainty or not knowing what to do next entrepreneurs are more dependent on their team which strengthens the motivational effect of trust in the team. In particular, this relates to entrepreneurs' dependency on (i) team capabilities and dependability, (ii) functioning of team cognition, (iii) experience of psychological safety, and (iv) provision of emotional support by the team.

First, under higher task uncertainty, entrepreneurs are more dependent on their team's capabilities and dependability and, thus, are more likely to appreciate higher levels of trust in their team. Generally, entrepreneurs seek for team members with complementary skills and competences (Kamm & Nurick, 1993). Yet, under higher task uncertainty, the demand for skills and competences are higher, which usually exceeds what the solo entrepreneur can provide (Gartner, 1985). Consistently, Dimov (2010) argues that team members' skills become

particularly useful when entrepreneurs lack the required skills themselves. Empirically, Keith et al. (2017) find IT project teams facing high task uncertainty to search for expert advice while under low task uncertainty the level of advisors' knowledge is less relevant. Also, Heavey and Simsek (2013) find that under high technological uncertainty corporate entrepreneurial activity is lower. Trusting team members also becomes more important under high task uncertainty as it suggests entrepreneurs can count on team members in difficult times (De Jong & Elfring, 2010; Hertel et al., 2004).

Further, team members' capabilities are particularly beneficial under higher task uncertainty because task uncertainty gives rise to complex problems, such as, how to respond to customer feedback (Domurath et al., 2020), how to stage product development (Schoonhoven et al., 1990) or how to prioritize everyday activities (Laffineur et al., 2019, forthcoming). To solve such complex problems, team members' skills and perspectives can help (Ucbasaran et al., 2003) as different skills and perspectives are a source of creativity (Hoever et al., 2012) in enabling perspective-taking (Hoever et al., 2018). This also helps processing customer feedback (Hoever et al., 2018).

This suggests that under higher task uncertainty, entrepreneurs appreciate higher level of trust in their team as they are more dependent on team members' capabilities and dependability. In turn, trust in the team motivates entrepreneurs more to work harder and, thus, perceive more goal progress.

In contrast, under lower task uncertainty, entrepreneurs appreciate trust in their team less as they are less dependent on team members' capabilities and dependability. In turn, trust in the team motivates entrepreneurs less to work harder and perceive less goal progress.

Second, under higher task uncertainty, entrepreneurs are more dependent on the functioning of team cognition, in particular, team mental models, as it is helpful to tackle complex tasks arising under uncertainty. I again relate this beneficial effect to the concepts of information sharing and transactive memory system, group learning, and cognitive consensus, which are closely related to team mental models (Mohammed & Dumville, 2001). The functioning of information sharing and the transactive memory system are important as both facilitate the exchange of information (Talaulicar et al., 2005), exchange of knowledge (Hsu & Chang, 2014), product development under uncertainty (Akgün et al., 2005), collaboration in unstable environment (Ren, Carley, & Argote, 2006), and communication of errors (van Dyck et al., 2005). Error communication is particularly important in uncertain environments as it provides an update to entrepreneurs about how to proceed in product development (Schoonhoven et al., 1990) or how

to prioritize everyday activities (Laffineur et al., 2019, forthcoming). This leads to the second benefit of team mental models, namely, group learning. Group learning enables entrepreneurs to learn from problems faced on the entrepreneurial journey and transform these problems into venture progress (Funken et al., 2020). Finally, the functioning of mental models also improves finding cognitive consensus in the team, which increases decision-speed (Kownatzki, Walter, Floyd, & Lechner, 2013; Talaulicar et al., 2005). Being able to make decisions fast is important as it saves time, which is one of the scarcest resources to the team (Roure & Maidique, 1986). Improvements in decision-time can also stem from improved explicit coordination due to improved information exchange (Healey, Vuori, & Hodgkinson, 2015) or implicit coordination (Rico, Sánchez-Manzanares, Gil, & Gibson, 2008) as team members are better able to anticipate each other's behavior (Mathieu, Heffner, Goodwin, Cannon-Bowers, & Salas, 2005). Further, as under higher task uncertainty entrepreneurs feel less confident in their information processing abilities (Forbes, 2007), the team becomes more important in interpreting information (Daft & Weick, 1984).

This suggests that under higher task uncertainty, entrepreneurs are more dependent on the functioning of team cognition. As trust enables the functioning of team cognition as outlined in the previous section, entrepreneurs appreciate trusting the team more under higher task uncertainty. In turn, they are more motivated by trust in their team to work hard and, thus, perceive more goal progress.

In contrast, under lower task uncertainty, entrepreneurs are less dependent on the functioning of team cognition. This means they are less sensitive to trust as an enabler of team cognition functioning. In turn, they are less motivated by trust in their team to work hard and are likely to perceive less goal progress.

Third, under higher task uncertainty entrepreneurs are likely to be more affectively dependent on the team making them more sensitive to their beliefs in the entrepreneurial team. Namely, under higher task uncertainty, entrepreneurs are more reliant on working in a psychologically safe environment. As entrepreneurs facing higher task uncertainty feel less certain what to do next, they are more likely to make mistakes, e.g., release a product too early (Schoonhoven et al., 1990), and are more reliant on engaging in trial-and-error behavior (Camuffo, Cordova, Gambardella, & Spina, 2020) as there is no pre-set procedure to follow (Withey et al., 1983). This means entrepreneurs' behavior is risky. Yet, when feeling psychologically safe, entrepreneurs feel safe to engage in risky behavior (Edmondson, 1999) and are more likely to

engage in behaviors, such as, creative problem solving (Kier & McMullen, 2018) or experimenting (Andries et al., 2013; Andries & Debackere, 2007; Autio et al., 2013).
Next to engaging in risky behavior, psychologically safety also improves communication in the team. In particular, entrepreneurs feel free to raise their true concerns (Detert & Burris, 2007), for instance, about how to solve a task (Goncalo, Polman, & Maslach, 2010). Further, entrepreneurs are open to seek out help from the team (Edmondson, Kramer, & Cook, 2004), share knowledge (Zhang, Fang, Wei, & Chen, 2010), and communicate errors (van Dyck et al., 2005) which provides opportunities for learning (Funken et al., 2020; Weinzimmer & Esken, 2017).
This suggests that psychological safety is particularly helpful under higher task uncertainty. As trust in the team indicates acting in a psychologically safe environment, entrepreneurs' appreciation of trust is higher under high level of task uncertainty. In turn, they are more motivated by trust in their team to work hard and, thus, perceive more goal progress.
In contrast, under lower task uncertainty, working in a psychologically safe environment is less important to entrepreneurs. Thus, their sensitivity to trust will be reduces. In turn, they are less motivated by trust in their team to work hard reducing their perceived goal progress.

Fourth, under higher task uncertainty, entrepreneurs are more dependent on team's emotional support. As entrepreneurs are more likely to make mistakes as outlined above or to receive negative feedback from the market on the current product or service developed (Domurath et al., 2020), entrepreneurs are more likely to experience stress (Liu, Spector, & Shi, 2007). Also, the general perception of uncertainty is a source of stress to entrepreneurs (Peters, McEwen, & Friston, 2017; Wincent & Örtqvist, 2009).
Trusting in the support of the team buffers the negative effect of stress (Burtscher, Meyer, Jonas, Feese, & Tröster, 2018) and can prevent emotional exhaustion (Baer et al., 2015). Further, as the solution or the path towards one solution is unclear, conflicts in the team can arise, which are a source of negative affect (Breugst & Shepherd, 2017). As trust reduces conflicts in the team (Curşeu & Schruijer, 2010), it is more important to entrepreneurs' goal progress.
This suggests that team's emotional support is particularly helpful under higher task uncertainty. This means entrepreneurs appreciate trust in their teams more under higher task uncertainty. In turn, they are more motivated by trust in their team to work hard and increasing perceptions of goal progress.
In comparison, under lower task uncertainty, receiving team's emotional support is less important to entrepreneurs. This means entrepreneurs are less appreciative of trust in their teams

more under lower task uncertainty. In turn, they are less motivated by trust in their team to work hard and, thus, perceive less goal progress.

Taken together, under higher task uncertainty, entrepreneurs are more dependent on their team. This results from their dependency on team members' capabilities and dependability, functioning of team cognition, experience of psychological safety, and provision of emotional support. Consequently, entrepreneurs appreciate trust in the teams more and will feel more motivated by trust in their team, which leads to more motivation to work hard and, subsequently, more perceived goal progress.
In contrast, under lower task uncertainty, entrepreneurs are less dependent on their team. This means they are less dependent on team members' capabilities and dependability, functioning of team cognition, experience of psychological safety, and provision of emotional support. Thus, entrepreneurs are less appreciative of trust in their team. This means they are less motivated by trust in their team, which leads to less motivation to work hard and, thus, less perceived goal progress. Thus, I predict:

HYPOTHESIS 2b: Under higher task uncertainty, the relationship between entrepreneurs' trust in the team and entrepreneurs' perceived goal progress will be stronger compared to lower task uncertainty.

Moderating effect of team-level uncertainty

Next, I continue with team-level uncertainty which refers to entrepreneurs' perception to what extent the team can complete a task. To make this prediction, entrepreneurs need to have experience working together with the team in the venture or, in other words, possess shared venture experience (Beckman, 2006; Kor, 2003; Zheng, 2012). Under a lack of such experience, entrepreneurs face challenges, such as, not knowing who in the team possess which skill and experience (Eisenhardt & Schoonhoven, 1990), who is dependable (De Jong & Elfring, 2010), or whether it is a psychologically safe place to work (Weinzimmer & Esken, 2017). In the following, I argue that under lower shared venture experience entrepreneurs are more dependent on trusting their team which strengthens its motivational effect. This relates to (i) team members' dependability, (ii) entrepreneurs' collaboration in the team, (iii) team members' attitudes, (iv) psychological safety, and (v) entrepreneurs' perceived emotional support.

First, under lower shared venture experience, it is unclear to entrepreneurs whether team members are dependable. However, team members' dependability is important as otherwise own efforts will be offset, which demotivates entrepreneurs (Hüffmeier et al., 2017). As there is only little experience indicating team members' dependability, entrepreneurs are left to rely on trust to anticipate team members' behavior (Lewicki & Bunker, 1995) and, in turn, their dependability. In other words, entrepreneurs have to trust that team members' behavior will be beneficial (De Jong & Elfring, 2010; Hertel et al., 2004). While dependability can be enforced using contracts (Blatt, 2009), controlling (Dennis, Robert, Curtis, Kowalczyk, & Hasty, 2012) or monitoring mechanisms (Costa, Fulmer, & Anderson, 2018), novel teams rather operate relying on trust (Chandler, Honig, & Wiklund, 2005) as controlling behavior can be perceived negatively by team members (Langfred, 2004).
This suggests that under lower shared venture experience, entrepreneurs are more reliant on trust to judge team members' dependability, which makes entrepreneurs more sensitive to their belief in the team. Thus, the motivational effect of trust on entrepreneurs' motivation to work hard is likely stronger, which then translates into more perceived goal progress.
In comparison, under higher shared venture experience, entrepreneurs are less reliant on trust to judge team members' dependability. Thus, they are less sensitive to trust in their team. In turn, the motivational effect of trust on entrepreneurs' motivation to work hard is likely weaker, which then translates into less perceived goal progress.

Second, under lower shared venture experience, it is unclear to entrepreneurs how to collaborate in the team. Under lower shared experience, entrepreneurs do not know who possesses what skills and experiences (Eisenhardt & Schoonhoven, 1990) and, hence, are not aware how to organize the team, i.e., employ the team's skills and experiences most effectively (Mathieu et al., 2000). This affects entrepreneurs' decision-making, such as, choice of organizational form (Hsieh et al., 2007), allocation of roles (Jung et al., 2017), and allocation of decision-making rights (Alvarez & Barney, 2005).
Consequently, under lower shared venture experience, entrepreneurs are left to trust the team. For one, trust enables the formation of informal hierarchies, which are particularly useful in "situations that are ambiguous, ill-defined, and unstructured" (Oedzes, van der Vegt, Rink, & Walter, 2019, p. 311). Similarly, trusting in team members' skills can simplify role and task allocation (Jung et al., 2017). This helps the functioning of team cognition (Mohammed, Ferzandi, & Hamilton, 2010), which improves team's efficiency (Lim & Klein, 2006; Mathieu et al., 2000). For another, trust indicates entrepreneurs that despite potential weaknesses in team

coordination team members are capable to complete tasks on their own which indicates to entrepreneurs that their efforts invested will not be offset (Hüffmeier et al., 2017). Consistently, Höhmann and Welter (2005) suggest that trust is particularly important in early stages of the entrepreneurial journey when processes and routines are yet not established. This means that entrepreneurs are likely to be more sensitive to trust under lower shared venture experience. In turn, trust will be more motivating to work hard translating in more perceived goal progress.
In comparison, when entrepreneurs possess more experience in working together with the team, routines (Raff & Scranton, 2017) as well as clear task and role allocation emerge (Clarysse & Moray, 2004). Alvarez and Barney (2005) even suggest that as roles become steady these roles become comparable to ones in established organizations. Also, increasing familiarity with team members help reducing team coordination errors (Sieweke & Zhao, 2015) and coordination for solving complex problems (Huckman, Staats, & Upton, 2009) making the team more efficient. This means entrepreneurs are no longer reliant on trust to build informal hierarchies, to guide decisions on role allocations or to indicate team members are capable to solve tasks on their own. This means entrepreneurs are likely to be less sensitive to trust under higher level of shared venture experience. In turn, trust will be less motivating to work hard translating in less perceived goal progress.

Third, under lower shared venture experience, team members' attitudes are less clear to entrepreneurs. This means that entrepreneurs feel less certain whether the team is fully committed (Bishop & Scott, 2000) or aligned towards the same goal (Mach et al., 2010). This further means entrepreneurs are left to judge team members' benevolence based on their trust perception. From a social exchange perspective (Emerson, 1976), this might lead entrepreneurs to show high level of commitment in order to expect team members to mirror the same behavior. Similarly, entrepreneurs might perceive the obligation to their team members to not let them down and, instead, show their best effort. This obligation can also stem from entrepreneurs' good faith in the benevolence of other people as individuals generally hold positive expectations in the beginning of novel relationships (McKnight, Cummings, & Chervany, 1998). Working together with a team with lower shared venture experience represents such novel relationships. This suggests that under lower shared venture experience, entrepreneurs are more sensitive to trust in indicating team's positive attitude ensuring that own efforts are not offset or due to their felt obligation to show their best effort. In turn, trust will be more motivating to work hard translating in more perceived goal progress.

In comparison, under higher shared venture experience, entrepreneurs are less sensitive to trust. In turn, trust will be less motivating to work hard translating in less perceived goal progress.

Fourth, under lower shared venture experience, entrepreneurs feel less certain whether they operate in a psychologically safe environment. Under lower shared venture experience, entrepreneurs are uncertain whether they can express their thoughts freely (Edmondson, 1999), whether they can provide or seek feedback (Edmondson, Kramer, & Cook, 2004), and whether their mistakes will be tolerated (Weinzimmer & Esken, 2017). Also given entrepreneurs' unawareness how to organize the team and respective unawareness of how to allocate roles (Jung et al., 2017), entrepreneurs feel less certain about respective role expectations. Consequently, entrepreneurs are less able to predict which role behavior will be accepted or not. This not only is emotionally exhaustive (Grandey, 2003), but also limits the potential of learning in the team (Edmondson, 1999). This means entrepreneurs are left to rely on trust to gauge psychological safety in the team. Consequently, entrepreneurs are more sensitive to their trust perception. This means trust is more motivating to work hard translating in more perceived goal progress.

In comparison, under higher level of shared venture experience, the relevance of psychological safety decreases, which amplifies the moderation. As entrepreneurs have experience within their team and team members' role allocations are more clear (Alvarez & Barney, 2005), expectations and respective boundaries for behavior crystallized limiting the potential for emotional exhaustion. Similarly, as organizational learning is more likely to be institutionalized (Crossan, Lane, & White, 1999) and routines for work more likely emerged (Raff & Scranton, 2017), procedures, such as, information sharing and feedback giving, are more likely to be standardized instead of being voluntary. Thus, psychological safety for learning is less relevant and, in turn, trust's relevance in indicating a psychological safe place to work is lower. This means trust is less motivating to work hard translating in less perceived goal progress.

Fifth, under lower shared venture experience, entrepreneurs feel less certain whether they will receive emotional support. This means entrepreneurs do not know whether team members will be supportive when experiencing stress, for instance, from role ambiguity – which is likely to occur given their unawareness how to organize the team as suggested in argument two – or negative feedback (Liu et al., 2007). It is also less clear whether team members will tolerate potential mistakes (Weinzimmer & Esken, 2017). Again this means entrepreneurs are left to rely on their perceived level of trust to understand the level of support to be received when experiencing stress (Burtscher et al., 2018). Consequently, this suggests that under lower shared

venture experience and the connected experience of stress, trust is more important to entrepreneurs to judge the level of emotional support provided by the team. Under these conditions, trust's connection to entrepreneurs' willingness to invest effort is stronger and, in turn, also stronger to their perceived goal progress.
In contract, if entrepreneurs work in a team with substantial shared venture experience, clear role allocations likely emerged (Alvarez & Barney, 2005), and learning likely became institutionalized (Crossan et al., 1999), reducing entrepreneurs' perceived uncertainty of emotional support and also entrepreneurs need' for emotional support. This means trust is less relevant to entrepreneurs leading to a reduced sensitivity for trust. Under these conditions, the connection between trust and the entrepreneurs' willingness to invest effort is weaker and, in turn, also weaker to their perceived goal progress.

Taken together, under lower shared venture experience, entrepreneurs are more dependent on trusting their team as entrepreneurs lacks experience to (i) assess team members' dependability, (ii) indicate the functioning of team collaboration, (iii) judge team members' attitudes, (iv) assess the psychological safety in the team, and (v) predict the level of emotional support. In turn, entrepreneurs are more sensitive to their trust perceptions which means trust is more important for entrepreneurs' motivation and, subsequent, perceived goal progress.
In contrast, under higher shared venture experience, entrepreneurs are less dependent on trusting their team as they have the experience to know team members' dependability, the functioning of team collaboration, team members' attitudes, the psychological safety in the team, and level of emotional support. In turn, entrepreneurs are less sensitive to their trust perceptions which means trust is less important for entrepreneurs' motivation and, subsequent, perceived goal progress. Thus, I predict:

HYPOTHESIS 3b: Under lower shared venture experience, the relationship between entrepreneurs' trust in the team and entrepreneurs' perceived goal progress will be stronger compared to higher shared venture experience.

Moderating effect of individual-level uncertainty

Finally, I will discuss the moderating effect of individual-level uncertainty. At the individual-level, entrepreneurs hold expectations to what extent they can complete a task. This relates to entrepreneurs' entrepreneurial experience, which informs entrepreneurs how to manage the

entrepreneurial journey (Farmer et al., 2011; Minniti & Bygrave, 2001). However, in case entrepreneurs lack entrepreneurial experience, they are more reliant on their team to overcome the challenges of the entrepreneurial journey. This relates to (i) entrepreneurs' information processing capabilities, (ii) team collaboration, (iii) psychological safety and (iv) entrepreneurs' emotion and stress processing.

First, under lower entrepreneurial experience, entrepreneurs feel more dependent on team members' information processing capabilities. Along the entrepreneurial journey, entrepreneurs face challenges such as handling multiple activities at once (Schoonhoven et al., 1990), being effective in accounting, marketing or human resource management (Laffineur et al., 2019), and making decisions under uncertainty (Perry et al., 2012; Wright et al., 2000). As novice entrepreneurs experience these challenges for the first time, proper processing of related information is difficult (Morris et al., 2012). Next to the difficulty in processing, entrepreneurs also feel overwhelmed and insecure of their own information processing capabilities (Forbes, 2007). This means entrepreneurs are dependent on their team to support information processing (Daft & Weick, 1984). Consistently, McCann and Vroom (2015) find the more team members there are in a team of nascent entrepreneurs, the more they adapt their initial opportunity idea. The authors connect this opportunity adaptation to nascent entrepreneurs' greater reliance on team information processing. Further, fruitful application of entrepreneurial experience requires entrepreneurs to possess substantial entrepreneurial experience, i.e., to possess both content- and context-specific knowledge (Toft-Kehler, Wennberg, & Kim, 2014). This is due to applicability of acquired knowledge. According to Toft-Kehler et al. (2014), entrepreneurs acquire content-specific knowledge (i.e., knowledge specific to a task, such as, developing a product) and context-specific knowledge (i.e., where and when knowledge can be applied, such as, developing a product for different markets) in the entrepreneurial process. In case content- or context-specific knowledge is missing, it cannot be effectively employed. This means entrepreneurs are more dependent on their team under lower entrepreneurial experience. This also means they will appreciate trust in their team. In turn, trust is more motivating to work hard which will increase perceived goal progress.

In contrast, entrepreneurs' dependency on team members' information processing capabilities changes as entrepreneurs have more entrepreneurial experience. For one, under higher entrepreneurial experience, entrepreneurs have experience how to manage challenges on the entrepreneurial journey making them independent of trusting the team. Based on past experiences, entrepreneurs can engage in failure analysis (Sitkin, 1992), update their knowledge

on the most promising actions and procedures (Minniti & Bygrave, 2001) and improve their understanding of requirements for opportunity exploitation (Farmer et al., 2011). Under higher entrepreneurial experience, entrepreneurs are also more likely to be aware how to use to use experiments to find the right business model (Andries et al., 2013), assess market demand (Autio et al., 2013) or identify the target market (Andries & Debackere, 2007). Further, experienced entrepreneurs are more likely to know how to overcome resource shortages, e.g., by way of using bootstrapping (Winborg & Landström, 2001), lean-innovation methods (Bicen & Johnson, 2015), effectuation (Perry et al., 2012), perspective-taking (Am Dolmans, van Burg, Reymen, & Romme, 2014) or specific framings of discussions (Schwenk and Cosier, 1980).
For another, under higher entrepreneurial experience, entrepreneurs feel more confident in their capabilities making them independent of trusting the team. This relates to the perception of autonomy and indispensability. Relating to the perception of autonomy, experienced individuals seek less feedback than novice individuals as they have a better understanding of their role suggesting an increase in autonomy (Anseel, Beatty, Shen, Lievens, & Sackett, 2015). Similarly, Dencker et al. (2009) find entrepreneurs with more breadth of knowledge to employ fewer people suggesting less reliance on other people's or team's competences. Relating to the perception of indispensability, feeling indispensable to the team outcome motivates entrepreneurs (Hüffmeier et al., 2017). Such a perception of being exceptionally valuable to the team can arise as entrepreneurs hold both context- and content-specific knowledge enabling entrepreneurs to effectively apply knowledge (Toft-Kehler et al., 2014). This might also relate to entrepreneurs' perception of having rare experiences, for instance, experience with venture capitalists helping the team to overcome information asymmetries specific to the venture capitalist-context (Storey, 1994). Thus, having substantial entrepreneurial experience might lead to entrepreneurs' perception of being indispensable to the team. While not specifically relating to the perception of indispensability, researchers find experienced entrepreneurs to be more convinced of their new venture success than novice entrepreneurs (Gottschalk et al., 2017) suggesting an increased confidence in their abilities. This means entrepreneurs feel less dependent on their team's capabilities. Thus, entrepreneurs are more likely to be less sensitive to their perception of trust in the team. In turn, trust is less motivating for experienced entrepreneurs to work hard translating in less perceived goal progress.

Second, under lower entrepreneurial experience, entrepreneurs are less aware how to collaborate in a new venture. As entrepreneurs have lower experience about which organizational form to choose (Hsieh et al., 2007) or how to allocate roles within the team (Jung

et al., 2017), entrepreneurs needs to rely on informal system emerging from the team to guide coordination, such as, informal hierarchies (Oedzes, van der Vegt, Rink, & Walter, 2019). Novice entrepreneurs also do not know how to effectively employ contracts (Blatt, 2009), controlling behavior (Dennis, Robert, Curtis, Kowalczyk, & Hasty, 2012) or monitoring mechanisms (Costa, Fulmer, & Anderson, 2018) to make team members' behavior more predictable and to become independent of trust. This means, under lower entrepreneurial experience, entrepreneurs are more dependent on trusting their team. In turn, trust is more motivating for entrepreneurs to work hard translating in more perceived goal progress.
In comparison, under higher entrepreneurial experience, entrepreneurs are less dependent on trusting their team. In turn, trust is less motivating for entrepreneurs to work hard translating in less perceived goal progress.

Third, under lower entrepreneurial experience, entrepreneurs are more reliant on a psychologically safe environment to achieve higher levels of goal progress. For novice entrepreneurs many challenges of the entrepreneurial journey occur for the first time (Morris et al., 2012). This does not only make action riskier, but also mistakes more likely for entrepreneurs to occur. Yet, in order to make mistakes and learn from them, novice entrepreneurs needs to feel psychologically safe (Weinzimmer & Esken, 2017). This means entrepreneurs are likely to be more sensitive to trust indicating a psychologically safe environment. In turn, trust is more motivating for entrepreneurs to work hard translating in more perceived goal progress.
In comparison, as experienced entrepreneurs have likely learned from failures (Sitkin, 1992) and know which actions and procedures do or do not work (Minniti & Bygrave, 2001), they are less dependent on learning and, thus, on a psychologically safe environment. This means entrepreneurs are likely to be less sensitive to trust indicating a psychologically safe environment. In turn, trust is less motivating for experienced entrepreneurs and, thus, the relationship between trust and perceived goal progress is likely to be reduced.

Fourth, under lower entrepreneurial experience, entrepreneurs require more emotional support from their team. As stated above, novice entrepreneurs are more likely to do a mistake on the entrepreneurial journey, which can be stressful (Liu et al., 2007). Also, the role of being a founder is new, which is stressful for entrepreneurs (Hoang & Gimeno, 2010). Given their lower experience, entrepreneurs are also less likely to be aware how to cope with entrepreneurial stress on their own (Uy et al., 2013). Consequently, entrepreneurs require their

team's emotional support to cope with stress (Burtscher et al., 2018). This means entrepreneurs are likely to be more sensitive to trust indicating a psychologically safe environment. In turn, trust is more motivating for entrepreneurs to work hard translating in more perceived goal progress.

Yet, as entrepreneurs have more entrepreneurial experience, they are more likely to be able to cope with entrepreneurial challenges on their own. Having experienced the challenges of founding, entrepreneurs' psychological capital is higher (Baron, Franklin, & Hmieleski, 2016a) and they are more likely having acquired suitable coping mechanism (Uy et al., 2013) to withstand stress. Experienced entrepreneurs are also likely having learnt how to deal with the feeling of loneliness and fear of failure (Patzelt & Shepherd, 2011). They are also more likely to have experienced failure in the past, which again leads to more psychological capital (Cardon & McGrath, 1999; Hayward, Forster, Sarasvathy, & Fredrickson, 2010) and teaches ways how to cope with grief (Jenkins, Wiklund, & Brundin, 2014). Entrepreneurial experience also teaches entrepreneurs how to deal with dissatisfaction and, thereby, avoid in engaging in too risky actions (Simon, Houghton, & Savelli, 2003). This means experienced entrepreneurs are likely to be less dependent on their team to provide emotional support to withstand the challenges of the entrepreneurial journey. Thus, entrepreneurs are likely to be less sensitive to trust indicating team's emotional support. In turn, trust is less motivating for entrepreneurs to work hard translating in less perceived goal progress.

Taken together, in case entrepreneurs lack entrepreneurial experience, they are more dependent on their team. This relates to entrepreneurs' dependency on (i) on team's information processing capabilities, (ii) team's capabilities to enable team collaboration, (iii) team's provision of a psychologically safe environment (iv) team's emotional support. This means entrepreneurs are more sensitive to their trust perception in the team. In turn, trust is more motivating for entrepreneurs to work hard translating in more perceived goal progress.

In contrast, under higher entrepreneurial experience, entrepreneurs are less dependent on their team. This means they are less dependent on trusting the team to process information, to work effectively together, to provide a psychologically safe environment, and to provide emotional support. In turn, entrepreneurs are less sensitive to trust. Thus, trust is less motivating for experienced entrepreneurs to work hard and they will perceive goal progress to be lower. I, thus, predict:

HYPOTHESIS 4b: Under lower entrepreneurial experience, the relationship between entrepreneurs' trust in the team and entrepreneurs' perceived goal progress will be stronger compared to higher entrepreneurial experience.

2.3.3 Summary of hypothesized effects

Before continuing with the chapter on Methodology, I summarize all hypothesized effects. The resulting model is displayed in Figure 2.

HYPOTHESIS 1a: Entrepreneurs' opportunity belief is positively related to entrepreneurs' perceived goal progress.
HYPOTHESIS 1b: Entrepreneurs' trust in the team is positively related to entrepreneurs' perceived goal progress.

HYPOTHESIS 2a: Under higher task uncertainty, the relationship between entrepreneurs' opportunity belief and entrepreneurs' perceived goal progress will be weaker compared to lower task uncertainty.
HYPOTHESIS 2b: Under higher task uncertainty, the relationship between entrepreneurs' trust in the team and entrepreneurs' perceived goal progress will be stronger compared to lower task uncertainty.

HYPOTHESIS 3a: Under lower shared venture experience, the relationship between entrepreneurs' opportunity belief and entrepreneurs' perceived goal progress will be weaker compared to higher shared venture experience.
HYPOTHESIS 3b: Under lower shared venture experience, the relationship between entrepreneurs' trust in the team and entrepreneurs' perceived goal progress will be stronger compared to higher shared venture experience.

HYPOTHESIS 4a: Under lower entrepreneurial experience, the relationship between entrepreneurs' opportunity belief and entrepreneurs' perceived goal progress will be weaker compared to higher entrepreneurial experience.
HYPOTHESIS 4b: Under lower entrepreneurial experience, the relationship between entrepreneurs' trust in the team and entrepreneurs' perceived goal progress will be stronger compared to higher entrepreneurial experience.

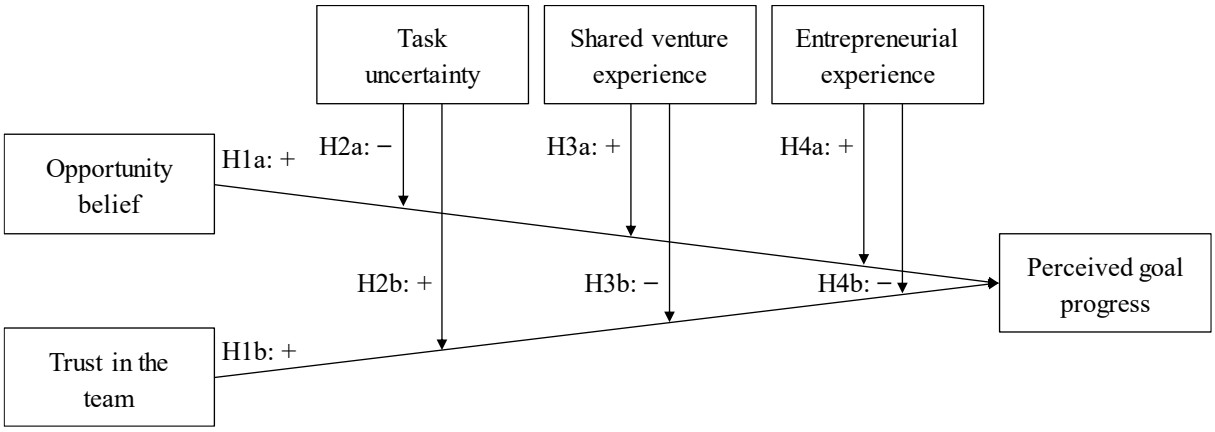

Figure 2: Hypothesized model
Note: Plus and minus signs indicate hypothesized effect direction; H = hypothesis
Source: Own illustration

3 Methodology

In this chapter, I provide an overview of the methodology with respect to the data collection, sample description, measurement and data analysis required to test the aforementioned hypotheses. In Chapter 3.1, I first focus on the BEST project, which concerned the data collection, followed by the sample description in Chapter 3.2. Hereafter, I describe the rationale and properties of the measure in Chapter 3.3. For these three chapters, I will switch to using first person plural as they were the results of a collective effort. For Chapter 3.4 on the data analysis, I will switch back to first person singular as I describe tests I conducted to check measurement biases and elaborate on the statistical analysis relevant to this thesis.

3.1 BEST project

Initiated and supervised by Prof. Dr. Breugst and Prof. Dr. Dr. Patzelt, the Building Entrepreneurial Success Teams (BEST) project was started at the Entrepreneurship Research Institute of the Technical University Munich in July 2018 to improve our understanding of entrepreneurs and dynamics in entrepreneurial teams and ventures.

The data collection within the scope of the project was conducted jointly by Fritz Tacke, Carolin Feldmeier, Aishwarya Kakatkar, and me, who were research assistants at the institute supervised by both Prof. Dr. Breugst and Prof. Dr. Dr. Patzelt. The rationale to combine efforts in a joint project compared to four individual projects was to improve richness of the data for every research assistant. Prior to the here mentioned BEST project, five BEST projects had been conducted at the institute since 2010, which proved the feasibility and data quality of joint data collections. We continued this path and accompanied 301 entrepreneurs in 140 new ventures between July 2018 to September 2019. In total, we conducted 376 interviews (286 hours recorded) and received 2,746 questionnaires. To create this unique data set, we meticulously planned and executed the BEST project.

The data collection of the BEST project consisted of five stages as depicted in Figure 3, which will also be the structure for this chapter. First, during the research design stage, we developed a joint research design to address our research questions which differed in interests and

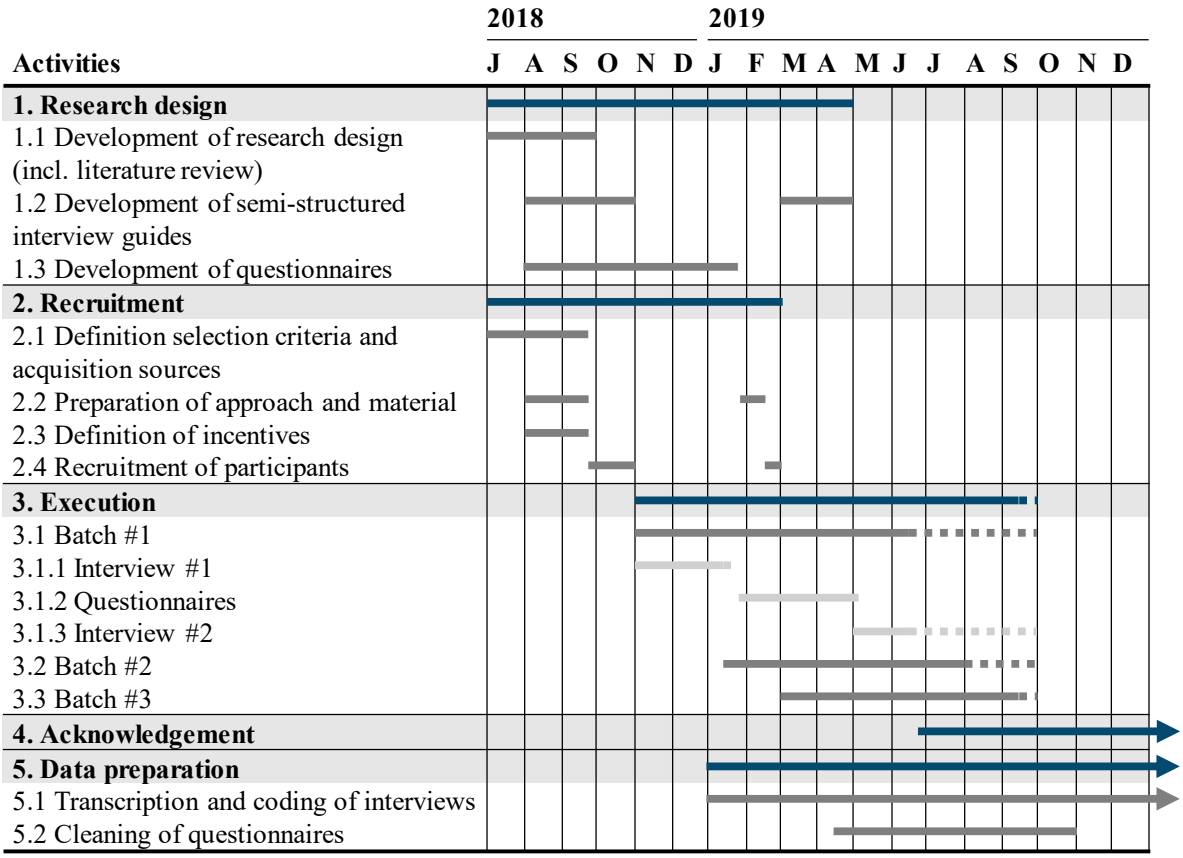

Figure 3: Data collection of the BEST project
Source: Own illustration

methods. This phase also included considerations regarding the overall length of the project as well as the time invested by participants balancing the chance of acquiring rich data against the risk of potential drop-outs and losses in response quality. Second, during the recruitment stage, we defined the selection criteria and potential acquisition sources, developed an approach and material to attract participants, defined incentives and, ultimately, recruited participants. Third, during the execution stage, we collected the consent for data storage and analysis prior to interviewing and surveying participants in three batches—the rationale for this setup is explained later. We also assessed reminder schedules and procedures to improve response rates. Post execution, we acknowledged participation and provided the initially promised incentives. Finally, we transcribed and coded interviews and cleaned questionnaire data. The subsequent chapters will extensively cover every stage.

3.1.1 Research design

This chapter describes how the overall design was established, how we developed the interview guides as well as questionnaires for our data collection.

Development of research design (incl. literature review)

In the first stage, we developed a joint research design to differentiate data responsibility and ownership for every research assistant based on each's research question and to communicate the project to participants. The design included considerations regarding (i) type and frequency of data required, (ii) extent of data to be collected per participant, and (iii) extent of data to be collected in total and respective feasibility of operationalization of the data collection. The following three paragraphs will successively focus on each aspect.

In assessing the type and frequency of data requirements, we first detailed out our specific research interests. For this, we reviewed literature in the field of management, (organizational) psychology and entrepreneurship[9], held extensive discussion in the team, with our advisors and other researchers at the institute as well as the graduate school of the university. We also pre-validated selected concepts with (nascent) entrepreneurs[10]. Combining our interests, the need for both qualitative and quantitative data arose – all data should be collected over an extended period on multiple level. Specifically, my colleague Fritz Tacke working on entrepreneurial personalities required quantitative data at the individual- and team-level collected over multiple months; Carolin Feldmeier working on entrepreneurial well-being required quantitative data at the individual- and team-level collected over multiple weeks; Aishwarya Kakatkar working on entrepreneurial identity required qualitative data collected over multiple months; and I required quantitative data at the individual-level. Put together, the research project should collect qualitative data over multiple months and quantitative data at the individual- and team-level over multiple weeks and months. Explicitly, to collect qualitative data we considered semi-

[9] Selected journals included by field: management (*Academy of Management Journal, Academy of Management Review, Management Science, Strategic Management Journal, Journal of Small Business Management*), (organizational) psychology (*Psychological Bulletin, Journal of Applied Psychology, Psychological Review, Journal of Organizational Behavior, Organizational Behavior and Human Decision Processes*) and entrepreneurship (*Journal of Business Venturing, Entrepreneurship: Theory and Practice*).

[10] This included both entrepreneurs and individuals with founding intentions or on the brink to founding, e.g., students participating in entrepreneurship classes.

structured interviews and to collect quantitative data we considered questionnaires of varying length over multiple weeks and months.

As a guideline for further interview guide and questionnaire development, we assessed boundaries for the extent of data we aimed to collect per person, that is, assess limits to the interviews and questionnaires length and frequency. This rational followed a trade-off between potential improvements in richness of data and an increased risk of attrition rates as well as losses in response quality. We, thus, sought to determine an ideal length and frequency for both the interviews and questionnaires.

With regard to the interviews, Thorsteinson in his recent meta-analysis on interview length and its effects on reliability and validity suggests that "it may not be possible to identify an optimal length of an interview" (2018, p. 14), yet suggests interviews of 30 minutes and recommends multiple short interviews over a single, long interview. Also the interview length does not appear to inflict attrition in subsequent questionnaires (Lynn, 2014). As past BEST projects successfully used interview guides of roughly 60-90 minutes, we assessed the risk of high attrition due to long interviews as low and sought to develop a 60 minutes interview guide. Further, to capture development at the individual-, team- and venture-level, we sought to conduct two interviews set approximately six months apart.

Similar to an ideal interview length, there is ambiguity about the ideal questionnaire length. In their textbook on developing questionnaires, Rea and Parker (2014) indicate questionnaires to ideally require 15 minutes, but no more than 30 minutes. In their work on marketing research, Revilla and Ochoa (2017) even suggest to build questionnaires of ideally 10 minutes, but no longer than 20 minutes. Though not referring to minutes, Hoerger (2010) suggests for a student sample that up to the first 100 items dropout rates increase sharply (dropout rate = 13.2% at 100 items, p. 699), but increases steadily by 2% for every additional 100 items thereafter (dropout rate = 20.7% at 500 items, p. 699). Further, past BEST projects could successfully employ questionnaires of up to 30 minutes. In this light, a long questionnaire of 30 minutes compared to a short questionnaire of 15-20 minutes appeared to reasonably improve the extent of data at a comparably low risk of increased dropout rates. Thus, we aimed at developing questionnaires not exceeding 30 minutes.

Beyond this general consideration, we differentiated questionnaire length boundaries based on the frequency the questionnaires would be sent to participants. This was necessary as research interests required different level of frequencies as described above. We assessed 30 minutes to be suitable for questionnaires sent out less frequently, i.e., tow longer questionnaires sent out three months apart. Yet, the topic of entrepreneurial well-being required questionnaires to be

answered every week. In their work on the experience sampling methodology, Fisher and To (2012) highlight a general guidance that such questionnaires may not exceed five to ten minutes; Hektner et al. (2007) are more restrictive and suggest two minutes or less as reasonable. In so following, we aimed at developing questionnaires to be sent every week to not exceed two to five minutes.

Finally, we determined the frequency. In their call for more application of the experience sampling methodology in entrepreneurship, Uy et al. indicate that there "are no clear-cut rules for setting intervals, and scholars should consider theory related and practical issues including the effect of time on the variables measured, participant burden, and the type of statistical analyses to be used" (2010, p. 39). Considering the burden to participants in filling out questionnaires as well as the expected variance of constructs, we expected weekly questionnaires over twelve weeks to cover an adequate time frame to observe variance and to be reasonably frequent for participants to answer questions[11] without becoming a burden.

Taken together and from a participant's perspective, we expected involvement over a 6 months period consisting of: (i) One 60 minutes interview in the beginning followed by (ii) a questionnaire series over twelve weeks and (iii) another 60 minutes interview at the end. The questionnaire series should further feature long questionnaires over 30 minutes in week one and twelve and short questionnaires over three minutes in weeks two to eleven. Overall, participants were expected to invest some 210 minutes or 3.5 hours into the BEST project. Figure 4 depicts the participants' involvement along our data collection process.

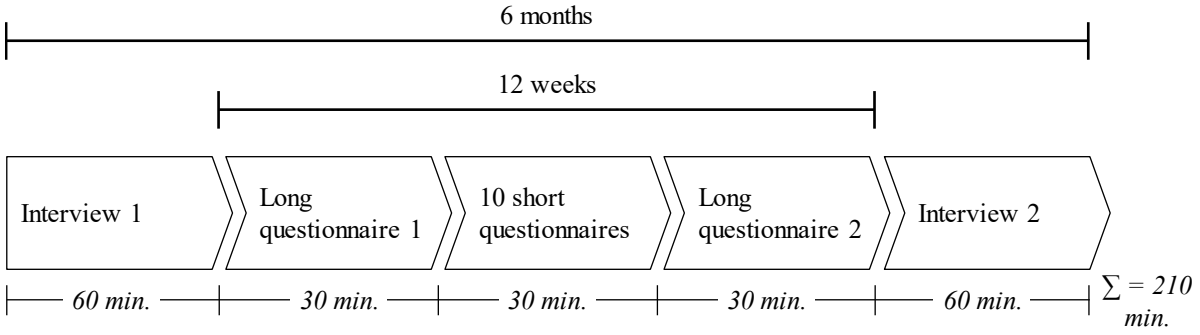

Figure 4: Participants' involvement in BEST project
Source: Own illustration

[11] For constructs such as "progress due to external feedback received", we expected them to substantially very at the weekly level.

Last, we assessed the feasibility of operationalizing. As questionnaires were to be distributed and filled out via an internet-based application, the interviews were the only limiting factor. Hence, we evaluated the potential hours of interviews and the number hours we were able to conduct them.

For the potential hours of interviews, we assessed the expected number of participating new ventures, average response rate and their average team size.

While theoretically feasible, a precise upfront assessment of the sample size is only partially possible. The sample size is dependent on the level of observation, i.e., for the BEST project the team-level is the limiting level, but also by expected effect size and variance (Newman, Browner, Cummings, & Hulley, 2001; Snijders & Bosker, 1999) as well as correlation for multivariate analysis (MacCallum, Widaman, Zhang, & Hong, 1999; Shieh, 2009). We refrained from putting any assumption on these factors as we did not expect to be able to reliably assess them. Nonetheless, we set an aspirational goal for our data collection and followed Hox et al. (2017) recommendation on multi-level analysis of involving at least 100 observations, i.e., 100 new venture teams.

To achieve the goal of data collected on at least 100 new venture teams, we relied on an estimate of response rates based on prior research. Baruch and Holtom (2008) analyze response rates reported in studies published in journals, such as, *Academy of Management Journal*, and conclude a declining trends in response rates at that time averaging at roughly 53%. In a more recent work, Fulton (2014) reports an average response rate of 34% for studies in organizational research. While these are average numbers, they do not take into account the research design and approach to participants, which have been shown to influence response rates (Cycyota & Harrison, 2002; Fulton, 2014; Sheehan, 2001). Thus, we examined the response rates of past research projects conducted at the Entrepreneurship Research Institute (see Table 10) to estimate the response rate. Surprisingly, 'BEST I + II' achieved a higher response rate compared

Project	**Participants**			**Number of data collections by type**				**Time of data collections by type** [in minutes]				
	Invited	Res.	RR	Int.	LQ	SQ	Other	Int.	LQ	SQ	Other	Total
BEST I+II	289	60	21%	2-3	4	26	1	120-180	120	78	270	588-648
BEST III	593	117	20%	1	2	-	1	30	30	-	30	90
Startup EKG	1,296	98	8%	-	4	-	-	-	60	-	-	60

Table 10: Comparison of research projects
Notes: BEST IV has been excluded as participants were nascent entrepreneurs with entrepreneurial intention, but not having founded a new venture yet.
Other = intervention or experiment; LQ = long questionnaire; Int. = interviews; Res. = responses; RR = response rate; SQ = short questionnaire
Sources: Bernlochner (2013), Liebl (2016), Vom Holtz (2017)

to ‘Startup EKG’ even though the time invested by participants was considerably higher. We took this as an indication that high response rates are feasible. Concluding from the previous research projects, we expected the response rate to be in line with the historical average of 84%. Thus, to achieve a data set of 100 new venture teams, we required participation of 119 new ventures assuming a response rate of 84%. To assess the expected hours of interviews, we Last required an estimated team size. For new venture teams, we follow the definition of Klotz et al. (2014) with teams consisting of at least two persons. Studies on new venture teams report average team sizes between two to three (2.0 by Ensley and Hmieleski (2005), 2.7 by Steffens et al. (2012), and 3.0 by Ensley et al. (2002)) and previous projects at the Entrepreneurship Research Institute also reported average team sizes between two to three (2.4 for ‘Startup EKG’, 2.5 for ‘BEST III’, and 2.6 for ‘BEST I+II’). Similar to response rates, we expected the team size to be consistent with previous projects at the Entrepreneurship Research Institute with a historical average team size of 2.5. We further expected to interview all founders in a new venture team.

Thus, we expected 119 new ventures teams with an average of 2.5 persons to be interviewed for one hour before the start of the questionnaires. This yielded an expected interview time of 298 hours.

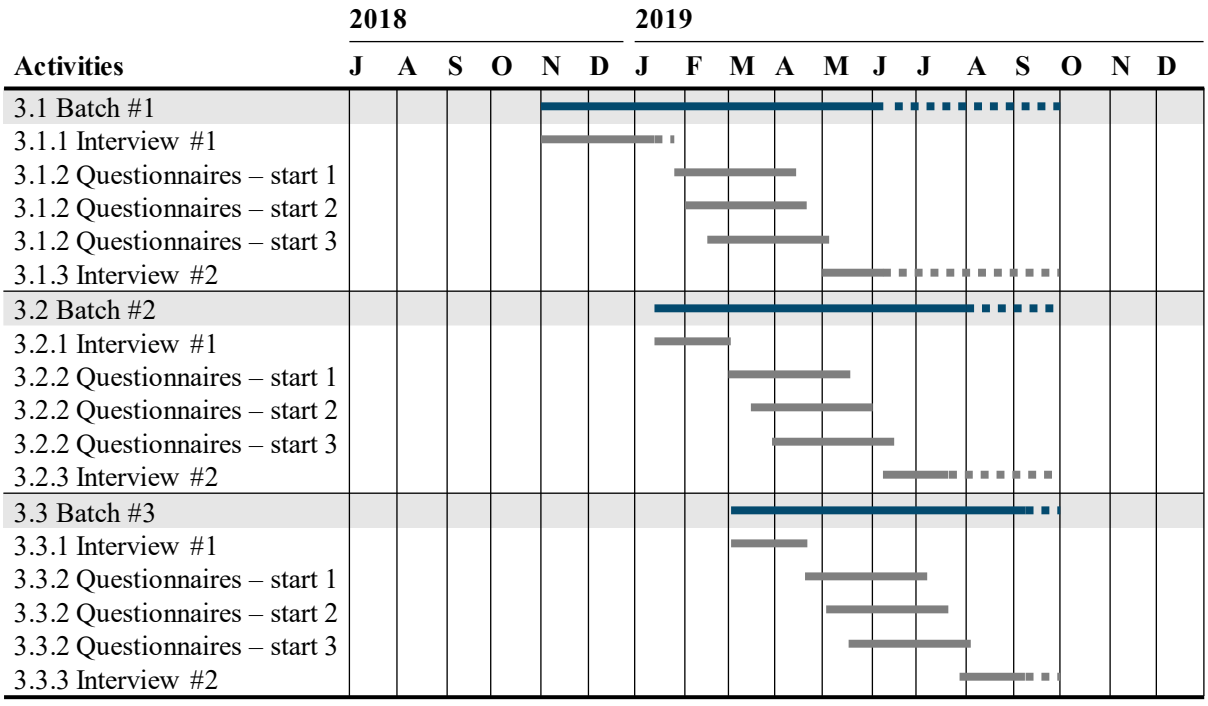

Figure 5: Schedule of interviews and questionnaires
Source: Own illustration

To finally assess feasibility, we estimated the time we could contribute to interviewing participants. Following Figure 4, we had 1.5 months to conduct all interviews[12]. Due to other work requirements, we could each contribute two days for full-time interviewing per week or eight per month. For four researchers, this meant a total of 48 days for interviews. Considering 298 hours of interviews, this would have meant roughly six hours of interviews per person per day. We concluded interviewing all new ventures within one round as not feasible as we sought to prepare and review all interviews, conduct them in person if a team was in proximity to Munich, and expected idle time between interviews on a given interview day due to rescheduling or unavailability of participants. Consequently, we decided to distribute participants over three batches with different start times and limited overlap in interview periods to make the collection feasible. Further, per batch we offered three different questionnaires start times each offset by two weeks to provide enough flexibility to meet new venture teams' availabilities, e.g., if individual team members are unavailable due to vacation. The resulting schedule is depicted in Figure 5.

The first batch was scheduled starting November 2018. The first interview was to be conducted by Fri, 11th Jan 2019. The first questionnaires started on Fri, 25th Jan. Start times for questionnaires start 2 and 3 were Fri, 1st Feb, and Fri, 15th Feb. As of May until Mid-June, the second interview could be scheduled over a six-week period. For subsequent interview rounds, we aimed at consistently providing a six-week period. Similar and as collection efforts extended until end of September, we offered participants to schedule second round interviews after the 6-week period though with strong preference to stay within the initially set time frame. These extensions are indicated by dotted lines in Figure 5.

The second batch was scheduled starting Mo, 14th Jan, immediately after the first interview round for the first batch ended. The first interview round could be scheduled until Fr, 1st Mar. The questionnaires could be started either Fr, 1st Mar, or Fr, 15th Mar, or Fr, 29th Mar. The second interview round was scheduled for Mo, 10th June, until Fr, 19th July.

Finally, the third batch was scheduled starting Mo, 4th Mar. The initial interview was to be carried out by Fr, 19th Apr. Questionnaires started Fr, 19th Apr, with the two subsequent start times offset by each 2 weeks. Last, the second interview could be scheduled for the period of Mo, 29th July, to Fr, 6th Sep.

[12] With an overall length of six months and twelve week/ three months of questionnaires, two rounds of interviews could be conducted in three months or 1.5 months for each round.

Development of interview guides

For the BEST project, we sought to conduct two one-hour interviews with every team member of a new venture team. For this matter, we developed two semi-structured interview guides which are a central method to qualitative research, with some even describing semi-structured interviews as 'the heart' of qualitative research (Gioia, Corley, & Hamilton, 2013, p. 20).

To develop the interview guides, we followed the guidelines of DeMarrais and Lapan (2003, pp. 76–77) who suggest:

- "Short, clear questions lead to detailed responses from participants."
- "Questions that ask participants to recall specific events or experiences in detail encourage fuller narratives."
- "A few broad, open-ended questions work better than a long series of closed-ended questions."

Together with our advisors Prof. Dr. Breugst and Prof. Dr. Dr. Patzelt, we extensively discussed the structure and formulation of questions for the interview guide. During conception of the guide, we conducted pilot interviews to assure questions are comprehensible, lead to academically relevant responses and can be answered within one hour. Conducting pilot interviews is a common procedure in qualitative research and also indicates issues in validity as well as enables detection of unforeseen or unintended course of conversation (Sampson, 2004). Further, the interview guide was developed in German and English as the majority of participants were expected to be German native speaker and interviews conducted in a foreign language may inflicts accuracy, authenticity or the development of a shared understanding (Welch & Piekkari, 2006). For new venture teams situated in proximity to Munich, we aimed at conducting interviews in person. For distant teams or in case teams were unavailable for in person meetings, we either employed video[13] or phone calls. Finally, and after completion of the first interviews, we continued revising the guide in light of emerging evidence. In the paragraphs to follow, the structure and content of each interview guide is described in more detail.

[13] For video-calls, we used the internet-based application appear.in (now whereby.com). The application operates and functions similar to other well-known applications, e.g., Skype, yet is entirely browser-based and does not require account creation prior usage. An additional feature useful to our data collection is the possibility to record interviews, which are recorded and stored on the computer of the user.

Purpose of the initial interview was to get familiarized with the venture, team as well as individual, to understand the specific context of each participant and to build a relationship to nurture participants' commitment. Each interview was set to take approximately one hour and consisted of five parts: (i) welcome note, (ii) questions regarding the venture, (iii) questions regarding the team, (iv) questions regarding the individual, (v) closing. Parts (ii-iv) covered a total of 17 core questions some with potential follow-up questions. Each question contained up to three follow-up questions.

In the welcome note, we again introduced ourselves, described the course of the research project, and sought the consent for data storage and processing. If requested by participants, we also signed additional non-disclosure agreements to ensure confidentiality. We also aligned on the start date for the questionnaires and verified that we were aware of the latest composition of the founding team. Prior to the first set of questions, we asked for participant's consent to record the interview, which no participant declined.

The first set focused on the venture and included five questions. In particular, we sought to understand how the venture had developed with respect to the opportunity, team as well as personal motivation and asked for their mid- as well as long-term perspective for the venture. Further, we concentrated on how the venture communicates with external stakeholders, such as, customers or investors.

The second set focused on the team and included six questions. We clarified roles and responsibilities in the team, what makes the team special, and how they work together as a team in particular in high stress situations.

The third set focused on the individual and included six questions. This section focused on personality, well-being and identity. For personality, we sought to understand their aspiration, i.e., examine greed. For well-being, we asked for their perceived stress level, if at any point this had led to thoughts of resignation from founding, how they cope with stress, and how they detach from work. Last and for identity, we asked participants how they presented themselves in different situations, i.e., how they introduced themselves in a non-work environment, at university or towards a potential investor. The final question was optional depending on the time spent until this question and asked participants to assess their best memorable moment since founding. We aimed at closing on a positive note to foster future collaboration as positive mood has been shown to positively affect impression formation (Forgas, 2011) and interview experience has been linked to participants' collaboration (Jäckle, Lynn, Sinibaldi, & Tipping, 2013).

Last, we closed the interview questions. Participants reassured everything relevant to them had been stated and we stopped recording hereafter. We wrapped up thanking participants for their contribution and explained the procedure to expect over the subsequent weeks.

Approximately six months after the first interview, we conducted the second interview reflecting on past development and advancement of research questions. The interview was designed to again take one hour and included 15 questions with some potential follow-up questions. The guide included the same parts as the first interview guide with an additional section on past development. Namely, the structure was: (i) welcome note, (ii) questions regarding development since the last interview (additional section compared to first interview), (iii) questions regarding the venture, (iv) questions regarding the team, (v) questions regarding the individual, (vi) closing.

In the welcome note part, we thanked participants for their continued commitment and clarified open questions which emerged during the questionnaires[14].

The first set focused on past development since the last interview and included four questions. We focused on key progressions and setbacks, changes in team member composition or roles, changes in venture vision and need for additional financing sources.

The second set focused on questions regarding the venture and included three questions. In this section, we put attention towards the venture name and logo creation process, their competitive landscape, and the role of resources in venture development.

The third set focused on questions regarding the team and included three questions. Focal points laid on team member relationships and their effect for team dynamics as well as on the relationship to employees.

The fourth set focused on questions regarding the individual and included five questions. In this section, we concentrated on exit intentions and plans, related consequences for the venture, and their personal future vision.

Finally, we closed the interview and thanked for participation.

Post interview, recordings were transcribed literally. In total, we collected interview data from 252 individuals from 138 new ventures materializing in 286 hours of recordings.

[14] The cleaning procedure is explained in the Chapter 3.1.5 starting page 91. Questions emerged in case of ambiguity (e.g., varying number of employees provided by participants from the same team) or data inconsistency (e.g., additional co-founder names provided in questionnaires).

Development of questionnaires

As previously described, the BEST project consisted of two long questionnaires (each 30 minutes) over a twelve-week period and ten short/ weekly questionnaires (each three minutes). The questionnaires were developed alongside the overall research questions and interview guides. In the subsequent paragraphs, the selection of constructs for each questionnaire type and operationalization are described thoroughly.

To guide the selection of constructs, we first engaged in the development of research questions and potential hypotheses. Hereafter, we selected the most appropriate method (either qualitative or quantitative) and construct/ question that would best match out theoretical consideration. As a guiding principle for selection, we chose constructs which had shown sufficient reliability (Cronbach's alpha > 0.7, see Nunnally & Bernstein, 1994) and had been published in leading journals or had been widely cited. If possible, we opted for short scales given participants' limited time and willingness to answer the questionnaire. In particular, constructs for the short questionnaires with a targeted time of three minutes to answer were prone to excess length. For short, frequently repeated questionnaires, the application of single-items is considered acceptable and finds application (De Clercq, Menzies, Diochon, & Gasse, 2009; Edelman, Brush, Manolova, & Greene, 2010; Kühnel, Bledow, & Feuerhahn, 2016), yet is only recommended for "very straight forward unidimensional constructs" (Fisher & To, 2012, p. 872).

Again following Uy et al. (2010), we allocated constructs to the long and/ or short questionnaire based on the nature of underlying concept we sought so measure. Relatively stable constructs, such as, demographics or venture industry, were included in the long questionnaire, whereas relatively fast changing constructs, such as, affect, were included in the short questionnaires. Some constructs were included in both the long and short questionnaires, such as, stress or team satisfaction, as they tend to have base levels but nonetheless show variation over time (e.g., stress, see Hennessy, Wiesenthal, & Kohn, 2000).

Subsequently, constructs were adapted to the entrepreneurial and time context to increase validity. As for the interview guide, all constructs were presented in both German and English. Following the procedure presented by Brislin (1970), items were translated back and forth between German and English until consistency was met.

Level	Construct	Source	Scale	Items	LQ1	LQ2	SQ
Environment	Environmental dynamism	Green et al. (2008), Garrett and Covin (2015)	1-7 Likert	7		x	
	Environmental hostility	Green et al. (2008), Garrett and Covin (2015)	1-7 Likert	7		x	
Venture	Goal progress	Uy et al. (2015)	1-7 Likert	4	x	x	
	Opportunity beliefs	Gregoire et al. (2010)	1-7 Likert	5	x	x	
	Perceived performance	De Clercq and Sapienza (2006)	1-7 Likert	8	x	x	
	Resource scarcity	Faraj and Yan (2009)	1-7 Likert	3	x	x	
	Sales growth (future)	Previous BEST projects	Percent	1	x	x	
	Number of employees (future)	Previous BEST projects	Number	1	x	x	
	Task uncertainty	Withey et al. (1983)	1-7 Likert	4	x	x	
	Innovativeness	McKelvie et al. (2018)	1-7 Likert	4		x	
	Innovativeness (PSED: Market & competition)	PSED	1-7 Likert	5		x	
	Progress	Self-developed	1-7 Likert	2	x	x	x
	Goal progress	Uy et al. (2015)	1-7 Likert	2	x	x	x
	Opportunity adaption	Self-developed	1-7 Likert	2	x	x	x
	Setbacks	Self-developed	1-7 Likert	1	x	x	x
Venture characteristics	Venture foundation	Previous BEST projects, PSED	Yes/ no	1	x		
	Venture foundation date		Date	1	x		
	Industry		List + text-field for other	1	x		
	Industry (hi-tech)		Yes/ no	1	x		
	Number of employees (historical)		1-7 Likert	2	x		
	Sales generation		Yes/ no	1	x	x	
	Sales growth (historical)		Percent	3	x		
	Sources of financing		List + text-field for other	1		x	
	Part of incubator/ accelerator program		Yes/ no	1		x	
	Entrance incubator/ accelerator program		Date	1		x	
Team	Boundary reinforcement	Faraj and Yan (2009)	1-7 Likert	4	x	x	
	Boundary spanning	Faraj and Yan (2009)	1-7 Likert	4	x	x	
	Error communication	Rybowiak et al. (1999)	1-7 Likert	4	x	x	
	Friendship quality	Parks and Floyd (1996)	1-7 Likert	5	x	x	
	Individual relative contribution	Previous BEST projects	Percent, 0-100	1	x	x	

Table 11: Overview of constructs
Notes: LQ = Long questionnaire; SQ = Short questionnaire
Some constructs (e.g., team satisfaction) are listed twice as all short questionnaire constructs were included in the long questionnaires, yet with a different time reference, i.e., with regard to "the last 7 days" instead of "since foundation" or "in the last 3 months".
Source: Own illustration

Level	Construct	Source	Scale	Items	LQ1	LQ2	SQ
Team	Team coping	Bodenmann (1997)	1-7 Likert	7	x	x	
	Team member effort	De Jong and Elfring (2010)	1-7 Likert	5	x	x	
	Team performance	Shaw et al. (2011)	1-7 Likert	4	x	x	
	Team reflexivity	De Dreu (2007)	1-7 Likert	4	x	x	
	Team satisfaction	Jehn et al. (2010)	1-7 Likert	3	x	x	
	Thinking about errors	Rybowiak et al. (1999)	1-7 Likert	5	x	x	
	Trust	McAllister (1995)	1-7 Likert	11	x	x	
	Team interaction	Self-developed	Hours, 0-168	1	x	x	x
	Team satisfaction	Jehn et al. (2010)	1-7 Likert	3	x	x	x
Team characteristics	Team foundation date (initial founding team)	Previous BEST projects	Date	1	x		
	Team foundation date (current founding team)	Previous BEST projects	Date	1	x		
	Team member relationship	PSED	List + text-field for other	1	x		
Individual	CEO Values	Agle (1999)	1-7 Likert	7	x		
	TIPI	Gosling et al. (2003)	1-7 Likert	10	x		
	Behavioral procrastination	Kühnel et al. (2016)	1-7 Likert	6	x	x	
	Dispositional greed	Seuntjens et al. (2015)	1-7 Likert	7	x	x	
	Entrepreneurial self-efficacy	Zhao et al. (2005)	1-7 Likert	4	x	x	
	Impression management	Bolino and Turnley (1999)	1-7 Likert	4	x	x	
	Psychological detachment	Sonnentag and Fritz (2007)	1-7 Likert	4	x	x	
	Resilience	Luthans et al. (2007)	1-7 Likert	3	x	x	
	Self-monitoring ability	Lennox and Wolfe (1984)	1-7 Likert	6	x	x	
	Perceived stress	Motowidlo et al. (1986)	1-7 Likert	4	x	x	
	Exit intentions	Self-developed	1-7 Likert	1		x	
	Explorative and exploitative behavior	Mom et al. (2007)	1-7 Likert	11		x	
	Social desirability	Strahan and Gerbasi (1972)	1-7 Likert	7		x	
	Unethical, pro-organizational behavior	Umphress et al. (2010)	1-7 Likert	6		x	
	Affective well-being (PANAS)	Thompson (2007)	1-7 Likert	10	x	x	x
	Creativity	Janssen (2000)	1-7 Likert	3	x	x	x
	Effort	Previous BEST projects	Hours, 0-168	1	x	x	x
	Psychological detachment	Sonnentag and Fritz (2007)	1-7 Likert	2	x	x	x
	Perceived stress	Motowidlo et al. (1986)	1-7 Likert	4	x	x	x
Individual characteristics	Year of birth	Previous BEST projects,	Date	1	x		
	Gender	PSED	Female/ male/ other	1	x		

Table 11: Overview of constructs (continued)
Note: Please see previous page
Source: Own illustration

Level	Construct	Source	Scale	Items	LQ1	LQ2	SQ
Individual characteristics	Education		List + text-field for other	1	x		
	Field of education	Previous BEST projects, PSED	List + text-field for other	1	x		
	Parents founders		Yes/ no	1	x		
	Part-time foundation		Percent, 0-100%	1	x		
	Relationship status		List	1	x		
	Children in household		Number	1	x		
	Work experience		Years	1	x		
	Industry experience		Years	1	x		
	Entrepreneurial experience	Kollman et al. (2019)	Years	1	x		
	Founding experience		Number	1	x		

Table 11: Overview of constructs (continued)
Note: Please see previous page
Source: Own illustration

An overview of all constructs is provided in Table 11. The first long questionnaire consisted of 61 constructs and 193 items, the second long questionnaire consisted of 51 constructs and 205 items and the short questionnaires consisted of eleven constructs with a total of 31 items. The selection of constructs relevant to my thesis are explained in Chapter 3.3 starting on page 95.

After the selection of constructs, we implemented the questionnaires using an internet-based application[15]. Internet-based questionnaires have been shown to achieve response rates similar to paper-based questionnaires (Greenlaw & Brown-Welty, 2009), yet require seeking consent to participation prior questionnaire start or reminders throughout execution (Kaplowitz, Hadlock, & Levine, 2004). Also in terms of validity, internet-based questionnaires have been shown to be equivalent to paper-based questionnaires (Gosling, Vazire, Srivastava, & John, 2004; Weigold, Weigold, & Russell, 2013). Considering the benefits of internet-based questionnaires, such as, ease of implementation and reduced costs of execution for large samples (Wright, 2005), it is not surprising they have found widespread application in entrepreneurship research (see, for instance, Cardon, Grégoire, Stevens, & Patel, 2013; Collewaert, Anseel, Crommelinck, Beuckelaer, & Vermeire, 2016; Grégoire & Shepherd, 2012;

[15] For implementation, we used Unipark due to its flexibility in question types, language selection throughout the questionnaire, possibility to personalize questionnaires and ease of participants management (e.g., in sending standardized reminders). These features separated Unipark from other applications such as Google Forms, which are superior in questionnaire presentation across mediums (e.g., laptop, tablet or phone), but lack flexibility and customization options.

Mol, Ho, & Pollack, 2018; Wood, Williams, & Drover, 2017). With respect to the survey features, we followed the comprehensive work of Sauermann and Roach (2013) who recommend to personalize questionnaires, employ multiple reminders with different wording to avoid perception of standardized, i.e., computer-generated, content and provision of incentives. Yet, they have not found support for specific day or time within a week enabling higher response rates. As questionnaires were reflective in nature and in particular short questionnaires should be answered with respect to the previous work week, we decided to send questionnaires on Friday mornings (for a similar procedure, see Breugst et al., 2020, forthcoming). Beyond the lack of support for the specific days or times, Sauermann and Roach also have found no support for an optimal time period between reminders. This stands contrary to the work of Deutskens et al. (2004) who suggest to send reminders within one week and Crawford et al. (2001) even suggest to do so within two days. Taken together, we opted for a standardized reminder sent Monday noon, thus, two work days (considering Saturday a work day) after the initial invitation. Following the suggestion of multiple reminders with different wording, we decided to contact non-responding participants in the subsequent week via non-standardized e-mails or phone calls. We also considered the use of incentives, which is described in more detail in Chapter 3.1.2 Recruitment (starting p. 84).

Last, we carefully designed the internet-based questionnaires. To simplify the questionnaires, we offered 7-point Likert scales if applicable. Further, each questionnaire included four sections: (i) an introduction thoroughly explaining what participants could expect and how much time they were required to invest – which was a critical element as participants have been shown to drop-off if actual time invested to answer the survey exceeds the promised time required (Yan, Conrad, Tourangeau, & Couper, 2011); (ii) an explanation how to answer the questionnaire highlighting we were interested in their personal perception only to counter social desirability (Woods & McNamara, 1980) or provision of team's perception; (iii) the constructs as previously described; and (iv) a closing thanking participants for their commitment and instructions on the next steps. With respect to section (iii) covering the constructs, we decided to put questions which could be retrieved from public sources, such as, demographics from LinkedIn, at the end of the questionnaire as response time per question and willingness to response decreases the later a question is presented to participants throughout the questionnaire (Galesic & Bosnjak, 2009).

3.1.2 Recruitment

The following section describes the recruitment of participants for the BEST project. This includes notes on the definition of selection criteria and sources for participant acquisition, the preparation of approach and material, definition of incentives as well as the recruitment procedure.

Definition of selection criteria and acquisition source

As put forward in the previous chapter, the aim of the BEST research project was to collect data from at least 100 new venture teams. Next to defining what a new venture team is, we considered selection criteria based on venture age, geographic presence and industry. The rationale for each dimension is presented below.

New venture team: We followed the definition provided by Klotz et al., who describe new venture teams as "the group of individuals that is chiefly responsible for the strategic decision making and ongoing operations of a new venture" (2014, p. 226). Similar to Klotz et al. (2014), we also followed Cooney (2005) who defines a group to consist of at least two persons. Further, the definition of Klotz et al. (2014) required us to define who is considered as part of the new venture team, i.e., is a co-founder, thereby differentiating himself or herself from employees. This differentiation has been described by Ensley et al. (2002) who define an individual being part of the new venture team if he or she fulfills two out of the following three criteria: (i) he or she is considered a co-founder (Kamm, Shuman, Seeger, & Nurick, 1990), (ii) holds an equity share of at least 10% (Carland, Hoy, Boulton, & Carland, 1984; Kamm et al., 1990; Roure & Maidique, 1986) or (iii) is actively involved in strategic decision making (Cachon, 1990; Stewart Jr, Watson, Carland, & Carland, 1999).

Venture age: Although venture age as a criterion to define new ventures is controversially discussed (Klotz et al., 2014), we set an upper venture age limit of six years, i.e., required foundation after 1.1.2014, which is line with extensive research (see Amason, Shrader, & Tompson, 2006; Bingham & Davis, 2012; Goldenstein, Hunoldt, & Oertel, 2019; Li, 2013). Additionally, we included teams which are working on their venture, but were legally restrained from incorporating, i.e., teams which received an EXIST grant[16].

[16] The EXIST grant is provided by the German Federal Ministry for Economic Affairs and Energy and the European Social Fund to support new ventures, yet forbids founding while receiving grants by the ministry.

Geographic presence: We limited our scope to new venture teams primarily operating in Germany to mitigate spurious effects from country-specific influences due differences in, e.g., institutions (Boudreaux, Nikolaev, & Klein, 2019; Stenholm, Acs, & Wuebker, 2013), culture (Mueller & Thomas, 2001; Stephan & Pathak, 2016), market development stage and dynamics (Manigart, 1994; Mascarenhas, 1997) or venture capital involvement and support (Li & Zahra, 2012; Sapienza, Manigart, & Vermeir, 1996).
Industry: We did not intend to limit findings to a specific industry nor focused on industry-specific dynamics in our research fields. Hence, we did not restrict participation by industry.

Before approaching potential participants, we systematically analyzed the new venture landscape and potential acquisition sources in Germany. An overview of the resulting sources is presented in Table 12. For every cluster, we used a specific adapted approach, which will be explained later.

The first cluster comprised data bases which hold information on venture name, number of co-founders, date of foundation and contact details. As the primary source, we used Crunchbase which receives increasing attention from scholars (Cumming, Werth, & Zhang, 2019; Dalle, Den Besten, & Menon, 2017; Ter Wal, Alexy, Block, & Sandner, 2016). Additionally, we used data bases provided by deutsche startups, Gründerszene, and Bayern Startup Magazin, which are equivalent source with a focus on the German-speaking region. After retrieving data from the data bases, we excluded ventures which were outside the predefined criteria or without a valid contact address. Subsequently, we invited new ventures for participation using a personalized e-mail sent from an institutional account created for the research project, which is described in more detail under Approach and material.

Beyond reaching out via e-mail, we sought to recruit participants either in person or endorsed via another contact. For this, we compiled a list of incubators/ accelerators in proximity to Munich as well as major events or startup contests in Germany. In case incubators/ accelerators featured a structured development program beyond offering a co-working space only, we sought to being endorsed via the operational head of the program to increase chances of participation. This recruiting strategy had already been successfully used in prior data collection efforts at the TUM Entrepreneurship Research Institute (Breugst et al., 2012; Breugst et al., 2015; Breugst et al., 2020, forthcoming; Breugst & Shepherd, 2017; Preller, Patzelt, & Breugst, 2020). Last, we reached out to former colleagues, friends and family to recruit participants. To

Cluster	Source	Location
Data bases	Bayern Startup Magazin	-
	Crunchbase	-
	deutsche startups	-
	Gründerszene	-
University-based incubators	Entrepreneurship Center, Ludwig-Maximilians University Munich	Munich
	Strascheg Center for Entrepreneurship, Munich University of Applied Sciences	Munich
	Technical University Munich	Munich
Private/ other public incubators[a]	BatchOne	Munich
	Bayrisches Filmzentrum	Munich
	Burda Bootcamp Startup Loft	Munich
	gate - "Garchinger Technologie und Gründerzentrum"	Garching
	Innovation.punks	Munich
	"Innovations- und Gründerzentrum Weihenstephan"	Martinsried
	"Innovations- und Gründerzentrum Würzburg"	Würzburg
	Media Lab Bayern	Munich
	Münchner Technologiezentrum (MTZ)	Munich
	Wayra	Munich
	Werk1	Munich
Incubators/ accelerators and support programs[b]	Asto Future	Munich
	BayStartUp Incubator	Munich
	Center for Digital Technology and Management	Munich
	Fasttrack	Munich
	Fireflow	Munich
	MedTech Bootcamp, UnternehmerTUM	Munich
	Retail Tech Hub	Munich
	TechFounders, UnternehmerTUM	Munich
	WeConomy	Ludwigshafen
	XPRENEURS, UnternehmerTUM	Munich
Events and startup contests	Bits & Pretzels	Munich
	Hardware Pioneers Demo Night, Wayra	Munich
	Nürnberger Startup Demo Night, BayStartUp	Nuremberg
	StartupCon	Cologne
Personal network	Colleagues, friends and family	-

Table 12: Overview of acquisition sources
Notes: a = Incubators primarily offering co-working space; b = Incubators offering co-working space and structured development program
Source: Own illustration

promote our research project, we employed a website, business cards, and leaflets. In the next chapter, I describe the approach and material in more detail.

Approach and material

To recruit participants, we developed three sets of approaches: (i) one for participants contacted using an e-mail, (ii) one for participants contacted via an endorsement contact and (iii) one for

participants contacted in person. Besides material required for every single approach, we developed material beneficial to all approaches, namely a website[17], and an institutional e-mail address[18] to provide a single point of contact for participants which could be accessed by all research assistants at any time.

The first approach aimed at recruiting contacts from the data bases. Using e-mails as a mean to recruit participants was possible even in light of the introduction of the General Data Protection Regulation in May 2018 as we had no commercial interest in contacting participants.
The e-mail was addressed at the founders of the new venture asking for their participation and included information on the purpose of the study as well as reason why we reached out to them, how they could benefit from participation, and what time involvement we expected. As we expected most contacts in Germany to be German-speaking, the entire e-mail was first provided in German followed by an English section. To increase chances for participation, we carefully planned the design and wording of the e-mail.
The e-mail was sent from an institutional e-mail address to assure participants the trustworthiness of the source, which has been identified as a critical determinant in marketing (Lindgreen & Vanhamme, 2005). Further, we put special attention to the subject of the e-mail as receiving attention of readers is relevant to achieve participation (Porter & Whitcomb, 2005). For salutation, we addressed participants by their actual names if possible, which again has been shown to improve response rates (Heerwegh, 2005). Last, we included a deadline for registration to create urgency for participation (Porter & Whitcomb, 2003) and closed our e-mail with pictures of us to further reduce perceived anonymity, and to create commitment towards participation (Lindgreen & Vanhamme, 2005). To create and distribute the e-mail, we relied on mailchimp, which provides professional layouts and limited distribution services free of charge.

The second approach aimed at recruiting via an endorsement contact, e.g., the head of an incubator/ accelerator program. If possible, we requested endorsement contacts for the opportunity to be introduced and speak to potential participants in person. However, due to limited availability for some of the endorsement contact, we had to rely on e-mails sent by the endorsement contact to potential participants. Next to offering a pre-formulated e-mail in line

[17] The website was a sub-site created on the website of the Entrepreneurship Research Institute. Link: https://www.ent.wi.tum.de/best/
[18] best.ent@wi.tum.de

with our e-mail to data base contact, we provided leaflets/ e-mail attachments providing the same content.

The third approach aimed a recruiting participants in person. We employed the leaflet and additionally created business cards featuring a Quick Response code to refer participants directly to our website.

Incentives

As participants were expected to contribute a total of 3.5 hours to the research project, we utilized an array of incentives. The provision of incentives has been shown to improve response rates (Greer & Chuchinprakarn, 1999), yet there is ambiguity for its effect on data quality as some find no evidence for an effect (Singer & Kulka, 2002) and some report a reduction in average response quality, but overall positive effect on extant of data due to reduced drop-off rates after beginning surveys (Jäckle & Lynn, 2008).

To provide attractive incentives to participants, we surveyed 16 nascent entrepreneurs on their preference for different incentives on a scale from 1 = *not attractive at all* to 5 = *very attractive*. The results are depicted in Figure 6. As there was no difference in preference for the monetary incentive (ticket for startup fair) compared to the most attractive non-monetary incentive (3

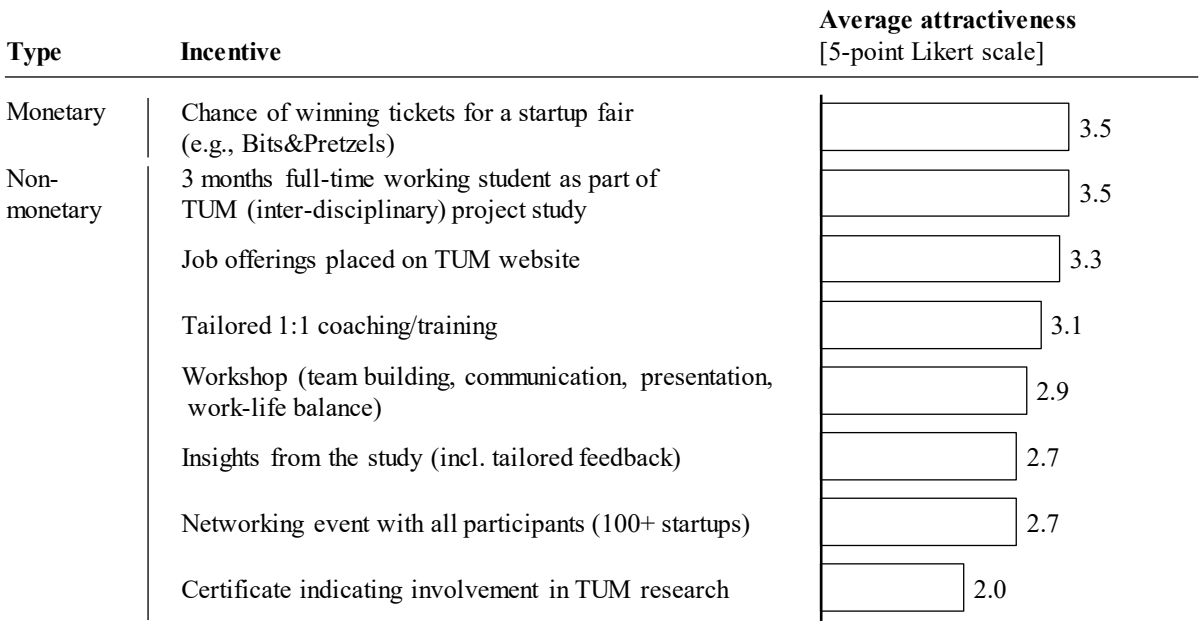

Figure 6: Survey on incentive attractiveness among nascent entrepreneurs
Note: n = 16
Source: Own illustration

months full-time working student), we opted for the non-monetary incentives only. Further, as the results did not show any clear preference for one non-monetary incentive, we aimed at providing all incentives, yet combined the offering of coaching, workshop and networking event into one joint event. Conclusively, we offered: i) access to 3 months full-time working students as part of TUM (interdisciplinary) project studies, ii) placement of job offerings on the ERI website, iii) a workshop event providing coaching and feedback, iv) analysis of the results and v) a certificate of participation.

The provision of the incentives occurred at multiple times which has been shown to improve response rates (Jäckle & Lynn, 2008). We decided on offering one incentive immediately after the completion of the first interview and first questionnaire leaning towards the results of Goldenberg et al. (2009) and McGrath (2006) who report increased response rates for participants receiving an incentive before the start of a questionnaire. As the job offering on the institute's website showed high attractiveness, we offered this incentive after completion of the first interview and first questionnaire. All other incentives were provided after completion of the second interview by all participants of a new venture team.

Recruitment procedure

In this section, I describe the execution in more detail focusing on the timeline, steps of execution and descriptive statistics.

As already illustrated in Figure 5, the BEST project consisted of three batches starting in November 2018, January 2019 and March 2019. Due to the time offset of 5 months between the first and third batch, we decided to engage in two rounds of recruitment activities shortly prior to the start of the batches. The first round of recruiting activities started September 2018 and the second round in February 2019.

In the first round of recruitment activities, we sought to rely on all different approaches described above to address all potential participants of the acquisition sources. Repeating the approaches, we reached out to participants via e-mail, via endorsement contacts and in person. For our reporting of descriptive statistics (Table 13), we aggregated figures for endorsement contacts and in person under *personal contact* and differentiated participants contacted via e-mail using the data bases between the ones *with* from the ones *without personalized salutation*. As described in the section above, personalizing e-mails has been shown to increase participation rates and we would like to indicate the effect of personalization for our sample.

Contact source	1st round C	R	P	RR	PR	2nd round C	R	P	RR	PR	Total C	R	P	RR	PR
Data bases as of Aug/ Sep 2018	1,724	195	76	11.3%	4.4%	1,363	24	14	1.8%	1.0%	1,724	219	90	12.7%	5.2%
Hereof with personalized salutation	1,121	120	48	10.7%	4.3%	874	16	10	1.8%	1.1%	1,121	136	58	12.1%	5.2%
Hereof without personalized salutation	603	75	28	12.4%	4.6%	489	8	4	1.6%	0.8%	603	83	32	13.8%	5.3%
Data bases as of Feb 2019	-	-	-	n/a	n/a	122	18	15	14.8%	12.3%	122	18	15	14.8%	12.3%
Hereof with personalized salutation	-	-	-	n/a	n/a	122	18	15	14.8%	12.3%	122	18	15	14.8%	12.3%
Hereof without personalized salutation	-	-	-	n/a	n/a	-	-	-	n/a	n/a	-	-	-	n/a	n/a
Personal contact	337	48	35	14.2%	10.4%	-	-	-	n/a	n/a	337	48	35	14.2%	10.4%
Total	2,061	243	111	11.8%	5.4%	1,485	42	29	2.8%	2.0%	2,183	285	140	13.1%	6.4%

Table 13: Descriptive statistics on recruitment activities
Notes: C = contacted; R = registered; P = participated; RR = registration rate; PR = participation rate; n/a = not available
Source: Own illustration

In the first round, we contacted a total of 1,724 ventures via e-mail using the data bases as of August/ September 2018. For the majority of ventures, namely 1,121, we held information on the names of the founders and could address them in person. For 603 ventures, we had no information on the founding team nor if the venture was founded by a team or single person. In the e-mail sent to ventures, we offered the founding teams the possibility to register for participation starting in November highlighting that detailed instructions about the procedure and involvement in the BEST project would be sent after the registration was closed. A reminder for registration was sent one week after the initial e-mail. Surprisingly, the e-mail without personalized salutation yielded a higher registration rate (12.4%) compared to the e-mail with personalized salutation (10.7%). However, the difference in participation rate in the project was marginal with 0.3%.

Further, we addressed 337 ventures in person. The registration rate (14.2%) was higher compared to ventures contacted via e-mail. Notably, the conversion of ventures which not only registered but finally participated in the BEST project was higher leading to a 10.4% participation rate which might be due to commitment created in the personal interaction.

In total, we contacted 2,061 ventures. Hereof 243 registered for participation (registration rate of 11.8%) and 111 ultimately participated (participation rate of 5.4%).

In the second round of recruitment activities, we solely relied on recruitment via e-mails. We again contacted ventures of the first round, which had not registered or not indicated that we should refrain from contacting them again. Hereby, we could re-contact 1,363 ventures of which 24 registered (registration rate of 1.8%) and 14 participated (participation rate of 1.0%). Both registration and participation rate were lower compared to the first round as we expect that most entrepreneurial teams which assessed the BEST project as interesting to them already indicated interest in the first round. Further, we updated data bases as of February 2019 and could address another 122 ventures. Surprisingly, registration and participation rate for these ventures were higher compared to ventures contacted in person in the first round by 4.1% and 8.0%, respectively. This might be due to the novelty of the BEST project as an institutional inquiry to the ventures[19] or the relatively low uncertainty about team availability as the communicated start date of the project for teams in batch 3 was within the next 4 weeks.

[19] Founders can themselves request their ventures to be listed in data bases such as Crunchbase. Motivation stems from factors, such as, the opportunity to be found by professional investors or other institutions. As ventures were not listed in the first round, requests like ours asking for contribution to research, might be novel to founding teams and, thereby, spark interest for participation.

The recruitment efforts of both rounds led to 2,183 ventures contacted, 285 which registered and 140 which participated resulting in a participation rate of 6.4%.

In comparison to other projects at the Entrepreneurship Research Institute, entrepreneurship field in general and to small firm research (see Table 14), the participation rate of the BEST project achieved higher rates, yet relied to a larger extent on personal acquisition sources, which for our project also showed higher participation rates. Further, these projects were subject to decreasing participation rates with the introduction of data bases as acquisition sources[20]. While the use of data bases appears to go with lower participation rates for our and other projects at the Entrepreneurship Research Institute, results are mixed for the field of entrepreneurship. Cardon and Kirk (2015) report a participation rate of 4.8%, thereby being 1.6% below our participation, whereas Drnovšek et al. (2010a) or McKelvie et al. (2018) state rates of 13.0% and 22.4%, respectively. Notably, all rates are below the average rate observed (27.0%) by Bartholomew and Smith (2006), who examine articles published in the journals *Entrepreneurship Theory and Practice* and *Journal of Small Business Management*. However,

Field	Study	Acquisition sources	Level	C	P	PR
Thesis project	BEST VI	Data bases, incubators/ accelerator programs, events and startup contests, personal network	Venture	2,183	140	6.4%
Other projects at Entrepreneurship Research Institute	BEST I+II	Incubators/ accelerator programs	Venture	289	60	20.8%
	BEST III	Data bases, incubators/ accelerator programs, events and startup contests, personal network	Venture	593	117	19.7%
	Startup EKG	Data bases, incubators/ accelerator programs, events and startup contests, personal network	Venture	1296	98	7.6%
Entrepreneurship	Cardon and Kirk (2015)	Data bases	Venture	2681	129	4.8%
	Drnovšek et al. (2010a)	Data bases	Individual	3600	469	13.0%
	McKelvie et al. (2018)	Data bases	Venture	1803	403	22.4%
Small firm research	Bartholomew and Smith (2006)	(Review of small firm research)	(Various)	n/a	n/a	27.0%

Table 14: Comparison of participation rates
Notes: C = contacted; P = participated; PR = participation rate; n/a = not available
Source: Own illustration

[20]Table 14, compare participation rates of BEST I+II, which did not use any data bases, to BEST III, which introduced data bases, and to Startup EKG, which even more so relied on data bases.

they analyzed publications between 1998-2004, thus dating 20 years before the work of McKelvie et al., and response rates decreased historically – a challenge highlighted by academics in social science research (Axinn, Link, & Groves, 2011; Meyer, Mok, & Sullivan, 2015; Puleston, 2011). In this light, our participation rate of 6.4% appears comparably low but within the range of the expected participation rates and suggests the continuation of decreasing response rates.

3.1.3 Execution

In this sub-chapter on Execution, I describe our considerations and efforts regarding data storage, interview execution and survey management, which also includes notes on reminder strategies and plan of incentive provision.

Data storage

Prior to the start of the data collection efforts, we ensured data will be stored safely and in accordance with the General Data Protection Regulation. For this matter, we informed participants about the purpose and means of data storage and processing, ensured confidentiality of their data and collected their consent. In case participants required, we agreed to sign non-disclosure agreements regarding all venture data.
All data was stored using the university-endorsed *Sync + Share* service, an online solution to store data. Further, all data was stored on hard-disks to serve as backup solutions.

Interview execution

To facilitate the interview coordination, we distributed all ventures among the four research assistants such that every venture is assigned to one research assistant. All interviews were conducted either in person or remotely via video conference or telephone. To schedule individual interviews, we relied on the applications Doodle (for in person interviews) and Calendly (for video conference or telephone interviews). In particular, the application Calendly proved useful to our project as it enabled sending pre-set meetings request (e.g., for one hour) to participants, displayed participants our availability for interviews via a connection to our regular calendars (e.g., Google Calendar or Outlook), and created meeting entries in both the calendar of the participant and ours in case an interview meeting had been scheduled.

All interviews were recorded. To record in person interviews, we relied on the built-in sound recording applications on our laptops or smart phones. To record video/ voice-over interviews, we used the application appear.in, later renamed to whereby, which provided the possibility to conduct interviews online in a secured and personalized meeting room without requiring participants to create a profile upfront. Moreover, appear.in allowed us to record the meeting room storing all information on our laptops.

Survey management

The primary tool used to manage surveys was Unipark, which had been successfully used in previous projects at the institute. For the BEST project, we sent twelve questionnaires offset by each one week. The procedure for sending the invitation, reminder and expiration dates of the questionnaires is detailed in the following section.

In the week prior to the first questionnaire, we sent a reminder to all participants informing them about the start of the questionnaire-series and request to reserve 30 minutes to fill in the questionnaire on Friday the subsequent week.

The first questionnaire was sent on Friday asking for completion by Monday noon of the next week. In case the questionnaire had not been completed, we sent a reminder Monday noon. Further, participants were informed that the second questionnaire – or the first short questionnaire (see Figure 4) – would only start as soon as all participating team members had completed the first questionnaire. This mean had been taken to ensure that (i) all team members available fill in the questionnaire and that (ii) all answers relate to the same period which was particularly important for fast changing team-level constructs measured in the weekly short questionnaires.

After at least 80% of all participating team members submitted their first questionnaire within the Monday deadline, the second questionnaire was sent on Friday again asking for completion by Monday noon. A reminder was sent Monday in case of a missing response. Further, we set Thursday midnight as the expiration date for the weekly short questionnaires to mitigate the possibility for participants to fill in multiple questionnaires at the same time.

Until the last questionnaire, the procedure for the invitation, reminder and expiration remained the same. Yet, for the last questionnaire we disabled the expiration date as it included slow changing or stable constructs. Moreover, and to further increase participation rates, we sent a physical post card and a TUM-branded gingerbread heart two weeks prior to the last questionnaire thanking participants for their contribution so far.

3.1.4 Acknowledgement

Post execution, we acknowledged the contributions of our participants. This culminated in the provision of three incentives, namely a workshop offering the opportunity for coaching and feedback, a personalized feedback-report, and a certificate of participation, both of which were distributed at the workshop.

The workshop was conducted on the 10.10.2019 at the Entrepreneurship Research Institute. We were grateful to the support of our supervisors, colleagues at the institute, the UnternehmerTUM and Joachim Herz Stiftung who made the event possible. The workshop featured key notes of Prof. Dr. Nicola Breugst, Dr. Nina Lemmens (Joachim Herz Stiftung) and Stefan Drüssler (UnternehmerTUM), first research results of the research assistants of the BEST project and two feedback and reflection sessions focusing on individual- and team-level measures. Further, the workshop was open to non-participants of the BEST project attracting students interested in entrepreneurship, other researchers and entrepreneurs as well as program managers of incubation/ acceleration programs. Instead of two feedback sessions, non-participants received a presentation on “The Nature of the Moonshot: The Role of University-based Research and Entrepreneurship” by our colleague Dr. Lora Koycheva and were offered a tour through the research institute, UnternehmerTUM, and MakerSpace.

After the workshop, we continued providing and fulfilling the initially promised incentives of facilitating (interdisciplinary) project studies with TUM students and placing job offering on the ERI website.

3.1.5 Data preparation

Raw data collected from the interviews and questionnaires required processing before we could use it for further analysis. As the work of this thesis most relies on the data collected in the questionnaires, I focus on the data processing of the questionnaires. For a thorough description of processing efforts related to the interviews, please refer to the work of my colleague Aishwarya Kakatkar.

The data processing comprised procedures related to general cleaning, incomplete responses and venture-/ team-level inconsistencies, which are explained in more detail in the following.

Level	Construct	Scale	Procedure
Venture characteristics	Venture foundation	Yes/ no	Check with venture team
	Venture foundation date	Date	Average if span between min/ max response < 6 months; otherwise check with venture team
	Industry	List + text-field for other	Coding by two independent reviewers and subsequent alignment
	Industry (hi-tech)	Yes/ no	Coding by two independent reviewers and subsequent alignment
	Number of employees (historical)	Number	Rounded up average if span between min/ max response < 3; otherwise check with venture team
	Sales generation	Yes/ no	Check with venture team
	Sales growth (historical)	Percentage	Average if span between min/ max response < 200%; otherwise check with venture team
	Sources of financing	List + text-field for other	Assume source of financing if indicated by one team member
	Part of incubator/ accelerator program	Yes/ no	Check with venture team
	Entrance incubator/ accelerator program	Date	Check with venture team
Team characteristics	Team foundation date (initial founding team)	Date	Average if span between min/ max response < 6 months; otherwise check with venture team
	Team foundation date (current founding team)	Date	Average if span between min/ max response < 6 months; otherwise check with venture team
	Team member relationship	List + text-field for other	Check with venture team

Table 15: Procedure for venture and team inconsistencies
Source: Own illustration

The general cleaning procedure included steps to comply with data protection laws (i.e., removal of data collected in case of missing consent for storage and processing) and to simplify further calculations, i.e., reverse coding of items, unifying of formats (as for instance German-speaking participants provided numbers using ‘,’ for decimal separation whereas English-speaking participants provided numbers using ‘.’ for decimal separation), transformation of dates into years (as for instance participants provided their year of birth instead of their age) and removing non-responses (as for instance some participants opened a questionnaire, but have not submitted any response).

Unfortunately, not all participants submitted complete questionnaires. For individual characteristics, such as, work experience or education (see Table 11), we retrieved information from public platforms, such as, LinkedIn or Xing. We did not infer or replace any missing values on the environment-, venture-, team- or individual-level except for venture- or team-

level constructs assumed to be stable and objectively assessable across the venture or team, e.g., venture foundation date, which are labeled as 'venture characteristics' and 'team characteristics', respectively (see Table 11).

Finally, we ensured that venture and team characteristics were consistent across team members and replaced all inconsistencies. The procedure for every construct is described in Table 15. Beyond these procedures, we also scrutinized our variables capturing industry, industry (hi-tech) and team member relationship. For all ventures and even if there was no inconsistency, two independent reviewers assessed the venture's industry to ensure ventures active in the same industry indeed had been allocated to the same industry. Finally, and with regard to team member relationship, participants could indicate additional co-founders in a text-field. In case participants entered an additional co-founder, we followed up with the team to validate if the person fulfilled the criteria of a co-founder and adjusted our recorded team size accordingly.

3.2 Sample description

In this thesis, I relied on the data collected in the first long questionnaire to address my research questions. Thus, the data included in my dissertation serves also as the basis for the sample description. In this chapter, I first concentrate on describing data collected on the individual-level before elaborating on the team- and venture-level.

3.2.1 Individual-level description

In total, I collected 276 responses from 127 new ventures. Participants were on average 34.8 years old (*SD* = 7.55). Only 11.6% (*SD* = 0.32) of all founders were female, which is below the reported 28% share of ventures founded by female entrepreneurs by Bundesverband Deutsche Startups e.V. (2018b). However, that study highlights a lower share among ventures with a technology orientation necessitating insights from the field of mathematics, informatics, science and technology, which were pre-dominantly the fields of educational of participants (see Figure 7). Further, my sample was highly educated with 87.3% holding a bachelor degree or higher, which is in line with an indicated 81% by Bundesverband Deutsche Startups e.V. (2018b) for the population in Germany. Interestingly, 34.8% (*SD* = 0.48) of our participants indicated founding their venture as a part-time activity. The interviews revealed that many of those participants were founding multiple ventures at the same time, were working on dependent employment or were still enrolled in a study program. On average, participants had

Field of education	Absolute	Relative
Business/ economics	98	35.5%
Engineering	72	26.1%
Natural science or mathematics	41	14.9%
Information technology	25	9.1%
Social sciences	15	5.4%
Creative arts	11	4.0%
Medicine or other health sector	10	3.6%
No specialization	4	1.4%

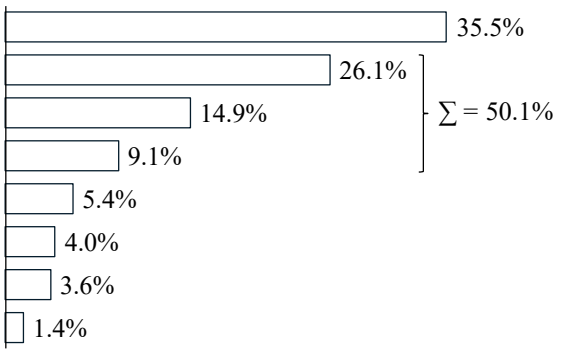

Figure 7: Distribution of field of education
Note: Absolute refers to the absolute number of participants, whereas relative refers to the share of participants indicating a particular field of education.
Source: Own illustration

previously founded 1.08 ventures (*SD* = 1.74) and had 4.3 years of experience working in new ventures (*SD* = 3.81).

3.2.2 Team- and venture-level description

For most ventures, team- and venture-level variables are closely connected. Out of 127 new ventures, 64 (50.4%) indicated less or no more than 2 full-time employees, hereof 24 with no employees (18.9%). The average founding team consisted of 2.6 founders (*SD* = 0.88), which is slightly above the average team size of 2.4 in the study by Bundesverband Deutsche Startups e.V. (2018a) for Germany. Further, the team composition had changed for 22.8% (*SD* = .42) of the ventures since foundation. Most ventures were operating in the field of computer hardware and software (52.0%). From a geographical perspective, 52 ventures (40.9%) were located in

Industry	Absolute	Relative
Computer hardware and software	66	52.0%
Services (professional and other)	29	22.8%
Consumer products	12	9.4%
Life sciences	12	9.4%
E-Commerce	6	4.7%
Science (materials and physical)	2	1.6%

Figure 8: Distribution of industry
Note: Absolute refers to the absolute number of ventures, whereas relative refers to the share of ventures indicating a particular industry.
Source: Own illustration

proximity to Munich, 29 (22.8%) in Berlin, 12 (9.4%) in Hamburg and the remaining 34 (26.8%) were scattered across Germany.

3.3 Measures

In this chapter, I present the measures applied in this thesis. As noted in the Chapter Development of questionnaires, I selected measures given they are (i) either published in a leading journal or widely cited, (ii) reliable, i.e., have shown a *Cronbach's alpha* > 0.70 (Nunnally & Bernstein, 1994), and (iii) preferably brief. An overview of the relevant measures and their characteristics are presented in Table 16. In the following, I will describe every measure, adaptions made, and the respective test of reliability. Finally, I will describe the selection of control variables.

				Source			Cronbach's alpha	
Variable	**Construct**	**Source**	**Items**	Journal	IF[1]	Citations[2]	Source	Sample
Dependent	Goal progress	Uy et al. (2015)	4	JBV	6.3	50	0.74	0.81
Independent	Opportunity beliefs	Gregoire et al. (2010b)	5	ORM	6.6	129	0.79-0.93 [a]	0.81
	Trust	McAllister (1995)	11	AMJ	7.2	8253	0.89-0.91 [b]	0.86
Moderator	Task uncertainty	Withey et al. (1983)	4	AMJ	7.2	467	0.85 [c]	0.86
	Shared venture experience	Zheng et al. (2016)	1	SMJ	5.6	15	n/a	n/a
	Entrepreneurial experience	Kollman et al. (2019)	1	JBV	6.3	3	n/a	n/a

Table 16: Overview of constructs applied in this thesis
Notes: 1 Impact factor, retrieved from Web of Science Journal Citation Report 2018 on 17.10.2019;
2 Retrieved from Google Scholar on 17.10.2019;
a Opportunity beliefs consist of two sub-scales (alignment and feasibility), for which Cronbach's alpha has been separately reported;
b Trust consists of two sub-scales (affective and cognitive trust), for which Cronbach's alpha has been separately reported;
c In their work, Withey et al. (1983) validate and develop a new measure for Perrow's Work Unit Technology, which consists of two dimensions, namely exceptions (task variety) and analyzability (absence of procedures to solve a problem). We refer to their validation and scale development for the analyzability dimension;
AMJ = *Academy of Management Journal*; JBV = *Journal of Business Venturing*; ORM = *Organizational Research Methods*; SMJ = *Strategic Management Journal*;
n/a = not available
Source: Web of Science, Google Scholar

3.3.1 Goal progress

To measure goal progress, I relied on the scale as applied by Uy et al. (2015), which was adapted to the entrepreneurial context by the authors based on the original scale of Brunstein (1993). While Uy et al. focus on the perceived, momentary contribution of the individual towards the venture goal (sample item: "At this moment, I have had quite a lot of success in pursuing my venture goal.", (2015, p. 381)), I adapted the scale emphasizing the collective effort since the start of the venture (sample item: "Since our start, we have had quite a lot of success in pursuing our venture goal."). For consistency, this and all other items were formulated using the same word describing the same object (i.e., I consistently used *venture* instead of using various terms, such as, the *company*, *startup* or *firm*). I also provided a clear framing with respect to the referred period (i.e., I consistently used *since our start* instead of varying time points, such as, *since our foundation* or *since establishment*). Further, the scale consisted of two sub-scales, namely advancement and outcome. Ultimately, the measure for goal progress comprised four items, which could be answered on a 7-point Likert scale from 1 = *not at all* to 7 = *completely*. The items are presented in Table 17.

In assessing measurement reliability, Cronbach's alpha is the most commonly used measurement, but also finds itself at the center of critique (Cho & Kim, 2015; Sijtsma, 2009; Trizano-Hermosilla & Alvarado, 2016). Due to its acceptance, I continued to rely Cronbach's alpha. For our sample, *Cronbach's alpha* was 0.81, which is slightly above the reported value of Uy et al. (2015) and above the threshold of 0.70 (Nunnally & Bernstein, 1994) indicating reliable measurement of goal progress.

Item	Formulation
	Please indicate to what extent you agree with the following statements.
	Advancement
(1)	Since our start, we have made a great deal of progress concerning our venture goal.
(2)	Since our start, we have hardly made any progress in the attempt of advancing in our venture goal.
	Outcome
(3)	Since our start, we have had quite a lot of success in pursuing our venture goal.
(4)	Since our start, many of our efforts in carrying out our venture goal have failed.

Table 17: Overview of items to measure goal progress
Source: Own illustration

3.3.2 Opportunity beliefs

For opportunity beliefs, I relied on the scale developed by Grégoire et al. (2010b). Although the scale was initially developed with three sub-scales, namely alignment, feasibility and desirability, Grégoire et al. conclude that desirability did not sufficiently contribute to the overall formation of opportunity beliefs. Thus, I applied the scales developed for alignment and feasibility to assess opportunity beliefs. As the product or service in a venture is frequently adapted to establish a market fit (McDonald & Gao, 2019, forthcoming), I adapted the original items to focus on the *current* state instead of the *proposed* state of the product or service. Further, as ventures might engage in the development of multiple products or services, I asked participants to focus on the main product or service. All items could be answered on 7-point Likert scale ranging from 1 = *not at all* to 7 = *completely*. The respective items are presented in Table 18.

In their work, Grégoire et al. (2010b) disclose Cronbach's alpha separately for the sub-scales alignment ($\alpha = 0.79$) and feasibility ($\alpha = 0.93$) with no joint reliability assessment. For our sample, *Cronbach's alpha* was 0.81, thereby between the level reported by Grégoire et al. and above the threshold of 0.70 for sufficient reliability.

Item	Formulation
	Please indicate to what extent you agree with the following statements regarding your main product/ service.
	Alignment
(1)	The current product or service can be used to solve the problems of the targeted market.
(2)	The current product or service has the capabilities to answer the needs of the market.
(3)	There is a 'match' between what the current product or service does, and what the targeted market demands.
	Feasibility
(4)	Applying the current product or service with individuals/firms in the targeted market does constitute a feasible opportunity.
(5)	The current product or service is sufficiently developed to be applied with individuals/firms in the targeted markets.

Table 18: Overview of items to measure opportunity beliefs
Source: Own illustration

3.3.3 Trust

Trust was measured relying on the well-established (8,352 citations, see Table 16) scale developed by McAllister (1995). While the original scale focuses on the dyads (sample item: "We have a sharing relationship. We can both freely share our ideas, feelings, and hopes." (McAllister, 1995, p. 37)), I again adapted the items to make a clear reference to the founding team (e.g., "In our founding team, we have a sharing relationship and can all freely share our ideas, feelings, and hopes."). As for goal progress, I consistently used one term to describe the same object, i.e., throughout the questionnaire referred to the *founding team* (instead of variations, such as, *new venture team* or *entrepreneurial team*). All items could be answered on a 7-point Likert scale ranging from 1 = *not at all* to 7 = *completely*. The items are displayed in Table 19.

Whereas McAllister distinguishes between affect-based and cognition-based trust, the differentiation is not central to the theory applied in this thesis. Thus, trust was assessed as a joint product of affect-based and cognition-based trust. In comparison to the *Cronbach's alphas*

Item	Formulation
	Please indicate to what extent you agree with the following statements.
	Affect-based trust
(1)	In our founding team, we have a sharing relationship and can all freely share our ideas, feelings, and hopes.
(2)	I can talk freely to my founding team members about difficulties I am having at work and know that they will want to listen.
(3)	We would all feel a sense of loss if one member of our founding team had to leave the founding team and we could no longer work together.
(4)	If I shared my problems with my founding team, I know they would respond constructively and caringly.
(5)	I could say that in our founding team we have all made considerable emotional investments in our working relationship.
	Cognition-based trust
(6)	Our founding team approaches the work with professionalism and dedication.
(7)	Given our founding team members' track record, I see no reason to doubt their competences and preparation for the work.
(8)	I can rely on my founding team members not to make my job more difficult by careless work.
(9)	Most people, even those who aren't close friends of my founding team members, trust and respect them.
(10)	Other persons who interact with my founding team members at work consider them to be trustworthy.
(11)	If people knew more about my founding team members and their backgrounds, they would be more concerned and monitor their performance more closely.

Table 19: Overview of items to measure trust
Source: Own illustration

described by McAllister (1995) of 0.89 and 0.91 for affect-based and cognition-based trust, respectively, *Cronbach's alpha* for the combined trust scale for our sample was slightly lower with 0.86, yet nonetheless sufficiently reliable.

3.3.4 Task uncertainty

For task uncertainty, I applied an adapted version of the scale developed by Withey et al. (1983). To capture the extent to which work translates into a direct output, they distinguish work along the dimension *exceptions* and *analyzability*. Whereas exceptions refer to the variety of tasks one encounters, analyzability conveys to what extent procedures are available to solve a problem. As I sought to measure the level of uncertainty stemming from the venture or – put differently – procedures required to provide the main service or product, I applied the sub-scale of analyzability to capture task uncertainty. All items could be answered on a 7-point Likert scale from 1 = *not at all* to 7 = *completely*. Table 20 provides an overview of the items.
For my sample, *Cronbach's alpha* was 0.86 in line with the work of Withey et al. ($\alpha = 0.85$).

Item	Formulation
	Please indicate to what extent you agree with the following statements.
(1)	Since our start, there has been a clearly known way to do the major types of work I normally encounter.
(2)	Since our start, there has been a clearly defined body of knowledge matter which guided me in doing my work.
(3)	Since our start, there has been an understandable sequence of steps that could be followed in doing my work.
(4)	To do my work, I have actually relied on established procedures and practices since our start.

Table 20: Overview of items to measure task uncertainty
Source: Own illustration

3.3.5 Shared venture experience

Prior studies have captured shared venture experience in different ways. An excerpt of different approaches to measure shared experience of the founding team is presented in Table 21. Approaches vary over a standardized measure as presented by Eisenhardt and Schoonhoven (1990) ranging between 0 to 1, to a system allocating points primarily based on the relationship of the CEO to other founders (Roure & Keeley, 1990) up to the period team members have worked together (Zheng, Devaughn, & Zellmer-Bruhn, 2016). While the approach of Eisenhardt and Schoonhoven (1990) resonates well with the academic body (2,833 citations[21]), I expected convergences of the measure towards one for the majority of participants as interviews revealed shared experience in excess of six months for most interviewees and, thus, expected limited variation. Alternatively, I followed the approach of Zheng et al. (2016) in measuring current shared experience, i.e., measured actual time in years the team worked together.

As the reference point indicating the start of shared venture experience, I set the foundation date of the venture. I did so for two reasons. For one, the foundation is a critical hallmark in venture development (Baron, 2007; Breugst et al., 2015; Rotefoss & Kolvereid, 2005) and

Source	Construct name	Range	Calculation
Zheng et al. (2016)	Current shared experience	0-12	Number of months in the first 12 operating months the current team worked together
	Prior shared experience extensiveness	Not restricted	Sum of shared experience of all team member dyads ./ Number of team members
Beckman (2006)	Prior company affiliation	0-3	Number of previous 3 companies for which more than one team member worked before
Kor (2003)	Shared team-specific management experience	Not restricted	Number of years of shared work experience for the four managers in a team with highest tenure (average team size = 6)
Eisenhardt and Schoonhoven (1990)	Joint experience	0-1	Number of team members with at least 6 months of prior work experience ./ Number of team members
Roure and Keeley (1990)	Prior joint experience	10-100	Calculation (point system) based on CEO and other 3 founders with greatest joint experience

Table 21: Excerpt of approaches to measure shared venture experience
Source: Own illustration

[21] Retrieved from Google Scholar on 17.10.2019.

subsequent survival depends if entrepreneurs are able to, e.g., establish an operating business (Tornikoski & Newbert, 2007), generate sales (Reynolds & Miller, 1992) or attract and hire employees (Wennberg, Delmar, & McKelvie, 2016). More so, Lichtenstein et al. (2006) highlight that foundation coincide with the 'emergence event'—the point in time indicating a shift behavior, decision making and strategy marking the organizational emergence of a venture (p. 154). For another, with the formal act of incorporation the date is less subject to ambiguity compared to other, informal dates, e.g., the date when the first members of the founding team started working on the opportunity. This rationale proved right post data collection: Whereas it was required to follow up with 24 ventures regarding the founding date as dates provided by the team members differed by more than six months, it was required to follow up with 45 ventures regarding the date when the founding team started working on the opportunity applying the same threshold.

Besides shared venture experience, I controlled for changes in founding team composition since foundation as ventures are subject to team member exit and entry (Hellerstedt, Aldrich, & Wiklund, 2007; Klotz et al., 2014; Ucbasaran et al., 2003).

3.3.6 Entrepreneurial experience

Similar to shared venture experience, entrepreneurial experience has been operationalized in different ways in prior studies. An excerpt of approaches is presented in Table 22. Approaches vary over, for instance, the (log) number of business previously founded (Dimov, 2010), a dichotomous scale indicating participants previously founded a business or not (Kotha & George, 2012) or the number of years of entrepreneurial experience (Zhao, Libaers, & Song, 2015). Notably, Kollmann et al. (2019) employed all three mentioned ways of operationalization, but primarily used the dichotomous scale for their analysis despite lower richness of information captured by this measure. For my sample, I measured entrepreneurial experience by asking participants for their years of entrepreneurial experience, i.e., asked participants: "How many years of work experience do you have in startups (as an employee or co-founder)?". Additionally, as an alternative measure, I asked participants: "How many ventures have you (co-) founded (before the current one)?".

Source	Construct name	Range	Calculation
Kollman et al. (2019)	Entrepreneurial experience	0-1	1 if founder previously founded a venture, 0 otherwise
		Not restricted	Years of prior entrepreneurial experience
		Not restricted	Number of prior businesses supported in founding
Gielnik et al. (2018)	Prior entrepreneurial experience	0-4	5-point Likert scale regarding number business participants were involved in founding; 0 = *Zero* ; 4 = *Four or more times*
Zhao et al. (2015)	Founding team startup experience	Not restricted	Average number of years of startup experience across the founding team
Kotha and George (2012)	Entrepreneurial experience	0-1	1 if founder previously founded a venture, 0 otherwise
Dimov (2010)	Entrepreneurial experience	Not restricted	(Log) number of prior businesses supported in founding

Table 22: Excerpt of approaches to measure entrepreneurial experience
Source: Own illustration

Examining the distribution of entrepreneurial and founding experience post data collection (see Figure 9), founding experience indeed showed skewness towards the left, whereas entrepreneurial experience appeared less skewed and closer to a normal distribution. For further analysis, I primarily relied on entrepreneurial experience. For robustness checks, I further used founding experience.

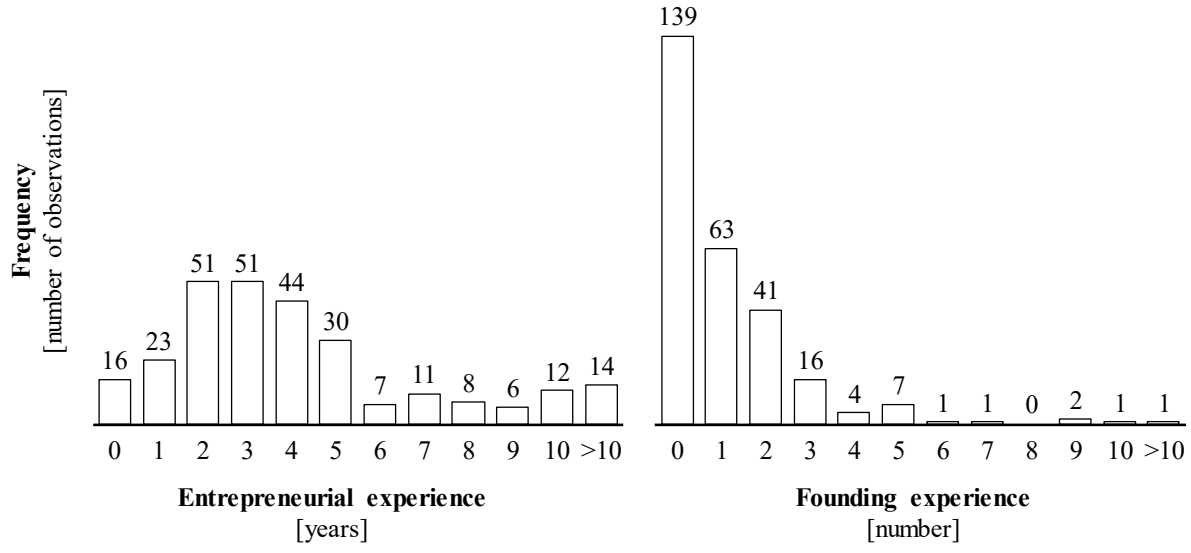

Figure 9: Distribution of entrepreneurial and founding experience
Source: Own illustration

3.3.7 Control variables

A total of eleven variables referring to the individual, the team, and the venture were included to mitigate potential confounding effects. I first describe control variables related to the individual before proceeding with team- and venture-related control variables.

Gender: First, I controlled for gender (0 = *male*, 1 = *female*). Gender has been shown to influence both the formation of trust (Dohmen, Falk, Huffman, & Sunde, 2008) and entrepreneurial intentions (Wilson, Kickul, & Marlino, 2007; Zhao et al., 2005). Consequently, gender resembles a potential confounding variable.

Participant age: Besides gender, Dohmen et al. (2008) note age to affect the formation of trust. Also, age norms have been shown to predict entrepreneurial behavior (Kautonen, Tornikoski, & Kibler, 2011) again indicating a potential confounding effect. Further, Baron (2006) pays special attention to age as its affecting individuals' opportunity recognition though primarily argued to operate via increased experience, for which I controlled separately. I measured participants age in years.

Human capital (i.e., work experience, industry experience, education and field of education): In his work on antecedents of opportunity confidence, Dimov (2010) controls specifically for work and industry experience as well as for the education level of participants. I follow suit and control for work experience (i.e., asking participants: "How many years of work experience do you have?"), industry experience (i.e., asking participants: "How many years of work experience do you have in the industry, in which your venture competes?") and education (i.e., asking participants to indicate their highest degree of graduation selecting from the following list: 1 = *High school graduation*, 2 = *Apprenticeship*, 3 = *Bachelor*, 4 = *Diploma*, 5 = *Master*, 6 = *Doctoral Degree*, 7 = *Other*). Post data collection, two independent reviewers assessed entries for the option 7 = *Other* as part of the education list and recoded education to the list as follows: 1 = *High school graduation*, 2 = *Apprenticeship / associate degree*, 3 = *Master tradesman/ technician*, 4 = *Bachelor degree*, 5 = *Diploma/ magister/ master degree*, 6 = *Doctoral degree / post doc*, 7 = *Habil./ professor*.

Beyond the level of education, I also controlled for the field of education following the rationale of industry-specific experience to influence cognition and motivation. As for education, participants could choose from a list of option, including 1 = *Engineering*, 2 = *Teaching degree*, 3 = *Natural sciences or mathematics*, 4 = *Medicine or other health sector*, 5 = *Law*, 6 = *Social sciences*, 7 = *Business/ economics*, 8 = *Other*. Congruent to the approach for education, two

independent reviewers assessed entries for the option 8 = *Other* and extended the list of options by the entries: 8 = *Creative arts*, 9 = *Information technology*, 10 = *No specialization*. Further, as I collected only one observation each for 2 = *Teaching degree* and 5 = *Law*, observations were allocated towards 6 = *Social sciences*. This yielded in a final variable capturing the field of education with eight entries, namely, 1 = *Engineering*, 2 = *Natural sciences or mathematics*, 3 = *Medicine or other health sector*, 4 = *Social sciences*, 5 = *Business/ economics*, 6 = *Creative arts*, 7 = *Information technology*, 8 = *No specialization*.

The scale of education resembles an ordinal scale and that field education resembles a nominal scale.

Besides the rationale put forward so far for the selection of control variables, all of the above are commonly controlled in entrepreneurial studies on intentions and action (Chen, Mitchell, Brigham, Howell, & Steinbauer, 2018; Fitzsimmons & Douglas, 2011; Hmieleski & Baron, 2008a; Tumasjan & Braun, 2012; Weinberger, Wach, Stephan, & Wegge, 2018).

Part-time: I controlled for individuals working part-time as a founder (0 = *not working part-time*, 1 = *working part-time*). For this, I asked participants on a scale from 0-100% to assess how many percent they are working for their venture. Individuals who indicated spending at least 98% of their time on their venture were allocated to the full-time cluster, i.e., part-time was set to 0. I expected working part-time as a founder to resemble a confounding variable related to both dependent and explaining variables. For instance, Mungaray and Ramirez-Urquidy (2011) suggest that sources of motivation differ for part-time and full-time working entrepreneurs and Folta et al. (2010) highlight that risk preferences and costs of opportunity might be related to the decision of working part-time as a founder. More closely connected to my research, Raffiee and Feng (2014) conclude individuals low in confidence are more likely to opt for working part-time rather than full-time towards their venture. Further, I expected work as a part-time founder to gauge valence indicating how relevant entrepreneurship is to the individual, i.e., I expected founders working part-time to be less motivated compared to founders fully dedicated towards their venture. Therefore, I reasoned working as a part-time founder to resemble a confounding variable.

Team composition change: Continuing with control variables related to the team and the venture, I included a dummy variable indicating if the team composition had changed since foundation (0 = *team composition has not changed since foundation*, 1 = *team composition has changed since foundation*). For this, I compared the founding date to the date since the team had been operating in its current team composition. Both dates have been provided by the

participants. If the founding date preceded the date of the origination of the current team composition, I concluded that the team composition changed, i.e., team composition change was set to 1.

Team size and venture size: I controlled for both the team size of the founding team (number of co-founders) and venture size (full-time equivalent employees as of 1.1.2019). Team size has been positively related to venture performance (Song, Podoynitsyna, van der Bij, & Halman, 2008) as larger teams possess large information processing capabilities (Jin et al., 2017) and means to retain the most valuable contributors to the new venture (Chandler et al., 2005). Further, high performing founders are able to motivate more and more experienced team members (Agarwal, Campbell, Franco, & Ganco, 2016) suggesting a link between team motivation and team or venture size.

Industry: Finally, I controlled for the industry of the venture. Participants were asked to select the industry their venture is primarily operating choosing among: 1 = *Computer hardware and software*, 2 = *Services (professional and other)*, 3 = *E-commerce*, 4 = *Consumer products,* 5 = *Life sciences*, 6 = *Science (material and physical)*, 7 = *Other*. Post data collection, two independent raters with multiple years of experience as consultants assessed the selection of industries for consistency (i.e., ensured similar ventures are in the same industry cluster) and allocated ventures indicated belonging to 7 = *Other* to one of the six clusters. In general, industry affects venture emergence (Eckhardt & Shane, 2011) which for Germany has been shown to be linked to industry business cycles (Konon, Fritsch, & Kritikos, 2018). Also, industries differ in their barrier to entry (Lofstrom, Bates, & Parker, 2014) leading us to assume that they also differ in their motivational hurdle to enter. Further, the dynamism of an industry has been related to performance (Hmieleski & Baron, 2009) and perception of the environment (Edelman & Yli-Renko, 2010). In controlling for the industry, I followed the common practice in management research (Carlson & Wu, 2012).

3.4 Data analysis

In this chapter, I briefly describe the tests conducted to identify potential measurement biases (Chapter 3.4.1), explain the regression analysis (Chapter 3.4.2), describe the estimation technique used (Chapter 3.4.3), and describe the procedure used for the simple slope analysis (Chapter 3.4.4)

3.4.1 Tests for measurement biases

To rule out biases in estimation, I conducted tests on multicollinearity, common method variance and non-response bias. Tests did not reveal any bias due to multicollinearity, common method variance, or non-response bias.

Multicollinearity

High correlation of two or more independent variables might cause high estimator variance and in turn diminishes the probability to support hypotheses (Wooldridge, 2013) and makes estimators more sensitive to changes, i.e., less robust. To assess multicollinearity, I examined both the correlations of the dependent and independent variables (excluding control variables) pre-estimation and the commonly applied variance inflation factor (Wooldridge, 2013) post-estimation.

Table 23 provides a summary on the mean, standard deviations and, most importantly, the correlations of the dependent and independent variables. While opportunity beliefs show a significant correlation with all other variables, no correlation exceeds the potentially problematic threshold of 0.70 (Hair, Black, Babin, & Anderson, 2014).

Further, I assessed the variance inflation factors post-estimation. All variance inflation factors were between 1-2 (lowest: task uncertainty = 1.13; highest: entrepreneurial experience = 1.98), again well below the threshold of 10 (Cohen, West, & Aiken, 2014; Hair et al., 2014).

	Variables	Mean	SD	1	2	3	4	5
1	Opportunity beliefs	6.00	0.88					
2	Trust	6.09	0.73	0.15 *				
3	Task uncertainty	4.02	1.42	-0.16 **	0.02			
4	Shared venture experience	2.68	1.32	0.22 ***	0.06	0.00		
5	Entrepreneurial experience	4.33	3.81	0.15 *	0.04	-0.08	0.36 ***	
6	Goal progress	5.50	1.10	0.31 ***	0.42 ***	-0.06	0.03	0.05

Table 23: Mean, standard deviation and correlations of dependent and independent variables
Notes: SD = standard deviation;
* $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$
Source: Own illustration

Common method variance

Another potential source of bias is common method variance. Common method variance affects the covariance between variables, which is not driven by inherent correlation, but by the mean of measurement which is particularly challenging in behavioral science (Podsakoff, MacKenzie, Lee, & Podsakoff, 2003). In turn, covariances distant from their true means (i.e., strongly inflated or deflated) might lead to erroneous validation or missing possibility to detect effects (Siemsen, Roth, & Oliveira, 2010). For our sample, the measurement of self-reported scales might be subject to the common source of the participant him- or herself. While criticized by Podsakoff et al. (2003), they note that Harman's single-factor test, an exploratory factor analysis including all construct items, is the most commonly used test to detect common method variance. Following Podsakoff et al. (2003), Harman's single-factor test suggests common method variance if either (i) a single factor emerges from the factor analysis or (ii) one factor accounts for the majority of variance explained (2003, p. 889). The exploratory factor analysis comprising the dependent and independent variables (excluding control variables)[22] resulted in 15 factors with one factor explaining 44.12% of the variance. The test, thus, did not indicate a bias caused by common method variance.

Non-response bias

Non-response bias describes a bias in sample selection thereby limiting generalizability as the sample does not truly represent the population (Rogelberg & Stanton, 2007). A common and widely cited[23] approach is described by Armstrong and Overton (1977) who suggest to compare early with late respondents reasoning that late respondents are closer and, thus, more representative of non-respondents. If early and late respondents differ, the sample might be subject to a non-response bias.

Before performing the test, I first examined the distribution of responses as depicted in Figure 10. The median response time was two days, i.e., questionnaires sent on a Friday were filled out by Sunday. A reminder for completion was sent Mondays, which led to a peak in responses

[22] Namely, this included the constructs as follows (number of items in brackets): Goal progress (4), opportunity beliefs (5), trust (11), task uncertainty (4), shared venture experience (1), entrepreneurial experience (1).
[23] 15,343 citations; retrieved from Google Scholar on 29.10.2019.

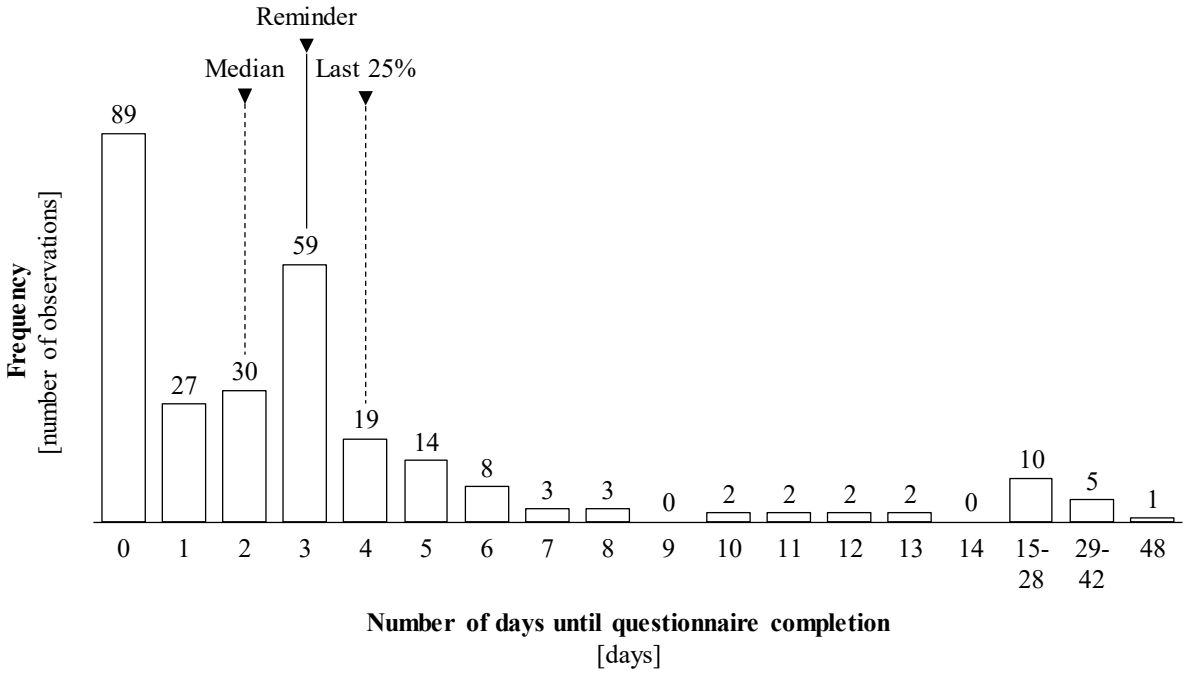

Figure 10: Distribution of response time
Source: Own illustration

after three days, i.e., completion by Monday end of day. The last 25% of the participants responded after four days. To test a non-response bias, I used both median and last 25% response time to build comparison groups. Explicitly, I once compared participants who completed the questionnaire within two days (hereafter labeled *early respondents*) with participants with a response time of three days or more (hereafter labeled *late respondents*) and for another I compared participants who completed the questionnaire within four days with participants with a response time of five days or more. Subsequently, I conducted two-sided t-tests for each variable described in Chapter 3.3.

The results are summarized in Table 24. The tests did not reveal any differences in the dependent and independent variables or for any control variable. With respect to the moderators, only task uncertainty differed significantly ($p < 0.01$) comparing the participants in the last 25% response time group to other participants.

However, there was no significant difference for task uncertainty comparing median-grouped control groups. As task uncertainty resembled the only variable with significant differences, which further was only examinable for the last 25%-grouped individuals, I concluded from the test that a non-response bias was not affecting my sample.

Variables	Mean (median-grouped)			Mean (last 25%-grouped)		
	Early	Late	Diff.	Early	Late	Diff.
Dependent variable						
Goal progress	5.54	5.46	0.09	5.50	5.53	-0.03
Control variables - team- and venture-level						
Team size[a]	2.90	2.78	0.13	2.88	2.67	0.21
Team composition changed[b]	0.24	0.23	0.01	0.24	0.23	0.01
Venture size[c]	6.01	5.68	0.34	5.58	7.02	-1.43
Industry	(not meaningful)					
Control variables - individual-level						
Gender[d]	0.12	0.11	0.02	0.12	0.12	0.00
Participant age	35.13	34.53	0.60	35.01	34.13	0.88
Work experience	10.90	10.09	0.82	10.42	10.96	-0.55
Industry experience	6.04	5.06	0.99	5.56	5.67	-0.11
Education	4.38	4.48	-0.11	4.40	4.56	-0.16
Field of education	(not meaningful)					
Part-time[e]	0.36	0.34	0.02	0.34	0.38	-0.05
Independent variables						
Opportunity beliefs	6.02	5.97	0.05	6.00	6.01	-0.01
Trust	6.06	6.12	-0.06	6.09	6.08	0.01
Moderators						
Task uncertainty	3.88	4.17	-0.29 †	3.90	4.50	-0.60 **
Shared venture experience	2.59	2.79	-0.19	2.61	3.00	-0.39 †
Entrepreneurial experience	4.59	4.04	0.56	4.30	4.45	-0.15

Table 24: *t*-test results for comparison of early and late respondents
Notes: 1 Median with respect to response time as depicted in Figure 10 with early referring to participants who responded within 2 days and late referring to participants who responded 3 days or later;
2 Last 25% with respect to response time as depicted in Figure 10 with early referring to participants who responded within 4 days and late referring to participants who responded 5 days or later;
a Number of co-founders; b 0 = *team composition of founding team has not changed since foundation*, 1 = *team composition of founding team has changed since foundation*; c employees in FTE; d 0 = *male*, 1 = *female*; e 0 = *not working part-time*, 1 = *working part-time*;
Diff. = Difference;
† $p < 0.1$; * $p < 0.05$; ** $p < 0.01$
Source: Own illustration

3.4.2 Hierarchical regression analysis

Hierarchical regression analysis is a commonly used method to test for interaction effects in behavioral sciences (Aguinis, 1995; Cortina, 1993). Following this path, I apply this concept to test the hypotheses stated in Chapter 2.3. Central to the concept is the step-wise and theory-led

introduction of variables to determine incremental improvements in variance explained and to validate significance of added variables (Cohen, Cohen, West, & Aiken, 1983).
Following this approach, I first tested a base model predicting the dependent variable based on the control variables only. Thereafter, I added the independent variables, namely opportunity beliefs and trust. In the next step, I included the moderating variables, namely task uncertainty, shared venture experience and entrepreneurial experience, to test for their main effects. Subsequently, I separately examined the inclusion of each interaction term on its own, thereby testing a model for each the interaction effects of task uncertainty, shared venture experience, and entrepreneurial experience. Finally, I tested the full model including all variables and interactions. The procedure chosen in this thesis is in line with the approach in other studies testing interaction effects (e.g., Fitzsimmons & Douglas, 2011; McKelvie et al., 2018; Mohammed & Nadkarni, 2011; Täuscher, 2019; Uy et al., 2017).

3.4.3 Estimation technique

To estimate parameters, I relied on ordinary least squares regression using the software STATA 13.1. Following Wooldridge, the ordinary least squares regression provides the best linear unbiased estimator if the five Gauss-Markov assumptions are met (2013, p. 105), namely: (i) the population model can be described as the sum of linear parameters and a random error term, (ii) the sample has been randomly selected, (iii) the absence of multicollinearity, (iv) the error term has an expected value of zero given any independent variable, (v) the error term is homoscedastic. In the lines to follow, I discuss the validity of every assumption.

Assumption one is violated in case the independent, moderating or moderated independent variables have a non-linear effect on the dependent variable. Though theory predicts a linear effect suggesting the assumption one to hold true, I conducted robustness checks to test for non-linear effects.
Assumption two was addressed in Chapter 3.4.1 (p. 106) with the test of non-response bias. The test did not suggest a bias and, thus, assumption two did not appear to be violated.
Similarly, assumption three was addressed in Chapter 3.4.1 (p. 106) and the test for multicollinearity did not indicate a potential issue.
Assumption four requires the absence of omitted variables, which led to the inclusion of control variables as described in Chapter 3.3.7 (pages 103ff). However, this does not entirely rule out omitted variable bias, which is addressed in the Chapter 5 on limitations.

Last, assumption five requires the error terms to be unrelated, which has not been addressed in this thesis so far. To test for homoscedasticity, I applied the Breusch-Pagan test as recommended by Wooldridge (2013, p. 277). The test was conducted post-regression assuming homoscedasticity. Thereafter, the test examines the distribution of error terms. The null hypothesis of homoscedasticity is to be rejected if the p-value is sufficiently small (Wooldridge, 2013, p. 277). The Breusch-Pagan test resulted in $\chi^2 = 7.39$ and $p = 0.0065$ leading to a rejection of the homoscedasticity assumption. Thus, variance of error terms was heteroscedastic. Theoretically, this was to be expected as observations are nested as participants are part of a founding team, thereby influencing each other. This nested structure leads to heteroscedasticity. Not accounting for the effect leads to mis-estimation of parameters (Moerbeek, 2004; Wampold & Serlin, 2000) and, thus, to potential false conclusion for hypotheses testing. To account for the error caused by heteroscedasticity, I applied robust standard errors in the regression analysis again following the recommendation of Wooldridge (2013, p. 277).

Besides reliance on ordinary least squares and robust standard errors for estimation, I mean centered the independent and moderating variables. This served two purposes. For one, it simplifies interpretation of effects and for another, and even more importantly, "reduces nonessentiell ill-conditioning" (Dalal & Zickar, 2012, p. 342). Nonessentiell ill-conditioning refers to biased covariances between variables caused by scaling, e.g., arbitrary means on a scale. Means are to some extent arbitrary despite limitation of most scales to 7-point Likert scale. This is the case as a one-point difference on a Likert scale does not convey the same for every construct, e.g., a one-point improvement in team satisfaction might hold a different meaning and difficulty in achievement than a one-point improvement in team performance. Consequently, means across variables may differ, but their distance is not meaningful, yet nonetheless affects covariance. By way of mean centering, the potential bias in covariances is reduced.

3.4.4 Simple slope analysis

To increase precision and reliability of analysis, scholars recommend to engage in simple slope analysis next to reliance on regression models to check interaction or moderating effects (Gardner, Harris, Li, Kirkman, & Mathieu, 2017; Robinson, Tomek, & Schumacker, 2013). In this thesis, I used the simple slope analysis to illustrate and strengthen results, but not to contribute to hypotheses testing. Thus, hypotheses are tested using the regression analysis only.

For illustration purposes, the simple slopes and their respective confidence intervals were plotted. In line with convention, I examined the simple slopes for different levels of the respective moderating variable, which were set at the mean of the moderator, one standard deviation above its mean and one standard deviation below its mean (Cohen et al., 1983).
To strengthen results, I further checked whether simple slopes were significantly different from zero and from another. For this, I conducted *t*-tests and analyzed the confidence intervals of the simple slopes. For the calculations of the *t*-tests and confidence intervals, I followed Cohen et al. (2014). The procedure for calculation is described in the following.

For illustration, I assume a given regression model

$$\hat{Y} = b_0 + b_1X + b_2M + b_3XM$$

with $\hat{Y}$ being the predicted variable, X being the independent variable, M being the moderator and XM being the moderated variable and b_i being the regression coefficient. The simple slope is described as

$$(b_1 + b_3M)$$

for a given level of M.

To test the significance of the simple slope, I applied a *t* test with

$$t_M = \frac{b_1 + b_3M}{SE_M}$$

with a *t*-distribution with $(n - k - 1)df$, where SE_M represents the standard error of the simple slope for a given level of M, n represents the number of observations and k the number of predictors. The standard error of the simple slope can be obtained using the covariance matrix of the regression coefficients and is calculated as follows:

$$SE_M = \left(SE_{b_1}^2 + 2M * cov_{b_1,b_3} + M^2SE_{b_3}^2\right)^{0.5}$$

with cov_{b_1,b_3} representing the covariance between the regression parameters b_1 and b_3.

Hereafter, the confidence interval CI_M for a given level M can be calculated as

$$CI_M = [(b_1 + b_3M) - t_{1-0.5\alpha}SE_M; (b_1 + b_3M) + t_{1-0.5\alpha}SE_M\ ]$$

with α determining the significance level. In line with conventions, I calculated confidence intervals at the 5%-significance level (Bedeian, Sturman, & Streiner, 2009).
In case the confidence interval excluded zero, I concluded that the simple slope was significantly different from zero.
To test whether simple slope were significantly different from another, I checked whether confidence intervals at high (one standard deviation above moderator's mean) and low (one standard deviation below moderator's mean) levels of the moderator were overlapping. Additionally, I checked whether confidence intervals at very high (one and a half standard deviations above moderator's mean) and very low (one and a half standard deviations below moderator's mean) levels of the moderator were overlapping. In case they were not overlapping, I concluded that simple slopes were significantly different from another.

4 Results

In this chapter, I present the descriptive statistics of the sample (Chapter 4.1), report the tests of the hypotheses (Chapter 4.2), and assess the robustness of the model (Chapter 4.3). Finally, I provide a summary of the results (Chapter 4.4).

4.1 Descriptive statistics

Initially, I examine the descriptive statistics before mean-centering to assess the data quality, distribution and correlations of all variables as presented in Table 25. Entries 1-11 represent the control variables, entries 12-17 comprise the independent, moderating and dependent variables, and entries 18-21 relate to variables used in the robustness checks. This is also the order of description to follow; however, variables used for the robustness checks will only be described in the respective chapter.

First and notably, team size shows a high and significant correlation with all experience measures (r's from −0.18 to −0.28, $p < 0.01$), which might relate to the human capital aspect of experience such that scarce experience of one team member can be substituted by other team members. Further, older teams or the ones with more shared venture experience are more likely to have experienced a change in team composition, which is a first indication that controlling for changes in team composition indeed is required. Interestingly, venture size or the number of full-time equivalent employees is positively and significantly (r's from 0.26 to 0.34, $p < 0.001$) related to both shared venture and entrepreneurial experience, but only partially to other types of experiences, namely, industry experience ($r = 0.15$, $p < 0.05$), but not work experience or education (r's from 0.05 to 0.08, $p > 0.1$). This suggests that experience gathered in the entrepreneurial context is different from other forms of experiences, such as, work experience or education. As expected, participant age and experiences show high correlations, in particular participant age and work experience are highly correlated ($r = 0.89$, $p < 0.001$). While this suggests a potential multi-collinearity bias in estimating the effects of participant age and work experience, pre- and post-estimation tests conducted in Chapter 3.4.1 ruled out this potential bias. Beyond the high correlation between participant age and work experience, their significant correlations ($p < 0.01$) with opportunity beliefs and uncertainty are noteworthy. This might relate to entrepreneurs' ability to imagine opportunities in more detail and more

explicitly in operationalization as more experienced entrepreneurs have been shown to build richer mental models of opportunities (Grégoire et al., 2010a). Last for the control variables, the dummy for the participants' part-time involvement in the venture show significant negative correlations with both task uncertainty ($r = -0.15$, $p < 0.05$) and goal progress ($r = -0.20$, $p < 0.001$). For task uncertainty, this might stem from a selection mechanism such that entrepreneurs under comparably low task uncertainty are more willing to work part-time on their venture or, vice-versa, select opportunities low in task uncertainty to enter the field of self-employment as suggested by Raffiee and Feng (2014). For goal progress, the negative correlation indicate high quality of data and underline the validity to measure progress with a subjective measure as progress should be expected to be slower if entrepreneurs work part-time.

As a next step, I explore the distribution and especially minimum and maximum values to assure the quality of data.

With remark to the independent variables opportunity beliefs and trust, the relatively high means of more than 6 on a scale from 1 to 7 are notable suggesting a skewed distribution, which however does not impede the validity to estimate effect sizes with the ordinary least squares method (Wooldridge, 2013). Also, minimum and maximum values are within the expected range of 1 to 7 given the 7-point Likert scale. The same applies to the moderating variable task uncertainty. Shared venture experience varies between 0 and 6 years, which is in line with our selection criterion offering participation for ventures not yet founded or of up to 6 years old (see Chapter 3.1.2 Recruitment, p. 80).

	Variables	Mean	SD	Min	Max	1	2	3	4	5	6	7	8	9	10
1	Team size[a]	2.84	1.14	1	8										
2	Team composition changed[b]	0.24	0.43	0	1	-0.01									
3	Venture size[c]	5.86	6.76	0	50	-0.12 *	-0.02								
4	Industry	2.03	1.44	1	6	-0.13 *	-0.04	0.01							
5	Gender[d]	0.12	0.32	0	1	0.00	0.12 *	-0.14 *	0.12 *						
6	Participant age	34.85	7.55	21	64	-0.36 ***	0.06	0.12	0.12 *	0.06					
7	Work experience	10.52	7.30	0	40	-0.26 ***	-0.01	0.08	0.07	0.01	0.89 ***				
8	Industry experience	5.58	5.56	0	40	-0.25 ***	-0.06	0.15 *	-0.05	-0.06	0.58 ***	0.61 ***			
9	Education	4.43	1.33	1	7	-0.25 ***	0.09	0.05	0.12	0.11	0.31 ***	0.07	0.06		
10	Field of education	3.65	2.11	1	8	0.04	0.00	0.06	-0.14 *	0.03	0.00	0.09	0.00	-0.21 ***	
11	Part-time[e]	0.35	0.48	0	1	0.14 *	0.08	-0.16 **	-0.04	0.14 *	0.11	0.19 **	0.11	-0.12 *	0.02
12	Opportunity beliefs	6.00	0.88	1.0	7.0	0.00	-0.04	0.07	0.01	0.00	0.17 **	0.17 **	0.14 *	0.04	0.11
13	Trust	6.09	0.73	3.3	7.0	-0.15 *	-0.09	0.10	0.12 *	0.01	0.12 *	0.15 *	0.05	0.06	0.01
14	Task uncertainty	4.02	1.42	1.0	7.0	0.02	-0.02	0.01	-0.01	0.02	-0.17 **	-0.19 **	-0.14 *	0.03	-0.02
15	Shared venture experience	2.68	1.32	0.0	6.0	-0.28 ***	0.24 ***	0.34 ***	0.01	0.06	0.26 ***	0.21 ***	0.21 ***	0.11	0.06
16	Entrepreneurial experience	4.33	3.81	0.0	24.0	-0.18 **	0.05	0.26 ***	0.03	-0.13 *	0.50 ***	0.57 ***	0.51 ***	-0.04	0.12 *
17	Goal progress	5.50	1.10	2.0	7.0	0.01	-0.08	0.14 *	0.04	-0.03	0.06	0.07	0.07	0.08	-0.01
18	Founding experience	1.08	1.74	0.0	14.0	-0.10	0.12 *	0.15 *	-0.05	-0.10	0.34 ***	0.40 ***	0.19 **	-0.09	0.14 *
19	Log entrepre. experience	1.47	0.64	0.0	3.2	-0.24 ***	0.04	0.27 ***	0.00	-0.13 *	0.42 ***	0.49 ***	0.45 ***	0.01	0.10
20	Perceived performance	4.50	1.17	1.4	7.0	-0.05	-0.05	0.14 *	-0.07	-0.08	0.02	0.01	0.10	0.05	0.08
21	Entrepreneurial self-efficacy	6.07	0.78	1.7	7.0	-0.07	0.10	0.02	0.02	-0.22 ***	0.04	0.05	0.06	0.02	0.04

Table 25: Mean, standard deviation, minimum, and correlation of variables

Notes: (Continues on next page) n = 276 (participants);
a Number of co-founders; b 0 = *team composition of founding team has not changed since foundation*, 1 = *team composition of founding team has changed since foundation*; c employees in FTE; d 0 = *male*, 1 = *female*; e 0 = *not working part-time*, 1 = *working part-time*; entrepre. = entrepreneurial;
SD = standard deviation; * $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$

Source: Own illustration

	Variables	Mean	SD	Min	Max	11	12	13	14	15	16	17	18	19	20
12	Opportunity beliefs	6.00	0.88	1.0	7.0	0.01									
13	Trust	6.09	0.73	3.3	7.0	-0.14 *	0.15 *								
14	Task uncertainty	4.02	1.42	1.0	7.0	-0.15 *	-0.16 **	0.02							
15	Shared venture experience	2.68	1.32	0.0	6.0	-0.02	0.22 ***	0.06	0.00						
16	Entrepreneurial experience	4.33	3.81	0.0	24.0	0.13 *	0.15 *	0.04	-0.08	0.36 ***					
17	Goal progress	5.50	1.10	2.0	7.0	-0.20 ***	0.31 ***	0.42 ***	-0.06	0.03	0.05				
18	Founding experience	1.08	1.74	0.0	14.0	0.15 *	0.19 **	-0.01	-0.09	0.06	0.61 ***	0.09			
19	Log entrepre. experience	1.47	0.64	0.0	3.2	0.09	0.15 *	0.04	-0.03	0.41 ***	0.89 ***	0.06	0.54 ***		
20	Perceived performance	4.50	1.17	1.4	7.0	-0.17 **	0.30 ***	0.33 ***	-0.07	0.05	0.11	0.65 ***	0.15 *	0.15 *	
21	Entrepreneurial self-efficacy	6.07	0.78	1.7	7.0	0.01	0.30 ***	0.10	-0.08	-0.03	0.13 *	0.20 ***	0.22 ***	0.15 *	0.16 **

Table 25: Mean, standard deviation, minimum, and correlation of variables (continued)
Notes: n = 276 (participants); entrepre. = entrepreneurial
SD = standard deviation; * $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$
Source: Own illustration

4.2 Results of hypotheses testing

In this section, I report the results of hypotheses testing using hierarchical regression analysis and estimation techniques as previously explained. The hypotheses are tested using seven regression models, which are complemented by significance tests of simple slopes for the interaction effects or, put differently, for hypotheses 2-4. The procedure and structure of models is as follows.

First and in model 0, the base line model is established. This model predicts goal progress as the dependent variable and includes the control variables only. It serves for comparison and is not used for hypotheses testing.

Second, the main effects of the independent variables, namely, opportunity beliefs and trust, are tested (hypotheses 1a and 1b). For this, I use model 1, which extends model 0 by inclusion of the independent variables. Further, I use model 6, which includes all variables (that is, the *full model*). Both models are used to test the significance of the main effects of the independent variables. This follows the rationale that the hypotheses should hold in both a partial model, in this case model 1, and a full model, in this case model 6.

Third, the main effects of the moderators, namely, task uncertainty, shared venture experience, and entrepreneurial experience, are tested. While no direct effect of the moderators on the dependent variable has been theorized, the tests checks whether there is no effect indeed. For this, model 2 is used, which extends model 1 by the moderators, and again the full model.

Hereafter, the interaction effect of every moderator is tested separately in one section each. For instance, in the fourth section, I test the interaction effects of task uncertainty (hypotheses 2a and 2b) by introducing model 3 (that is, an *interaction model*), which extends model 2 by the interaction terms of task uncertainty with opportunity beliefs and trust. Again, the full model will be used to test the hypotheses consistent with the recommendation by Aiken et al. (1991). Further, simple slopes will be examined whether they result in significantly different simple slopes for high/ low values of task uncertainty. The simple slope analysis is not used for hypotheses testing but serves to illustrate the interaction effects.

The sections for the moderating effect of shared venture experience (testing hypotheses 3a and 3b using models 4 and 6) and entrepreneurial experience (testing hypotheses 4a and 4b using models 5 and 6) follow the same structure.

The regression results of the models are summarized in Table 26, which will be used throughout the chapter. Generally, results are described as supporting the hypothesis in case they are significant at the 5%-level, in line with conventions (Bedeian et al., 2009). Beyond this, results significant to the 10%-level are reported. They are only informative and do not indicate any support for hypotheses testing.

Base model

In the base model or model 0, I test including the control variables and dependent variable goal progress only. Compared to the other models, the explanatory power of the base model is relatively low ($R^2 = 0.13$), yet the model is significant (F (21, 254) = 2.141, $p < 0.01$).

Most control variables are not significant with the exceptions of the dummy for working part-time ($b = -0.552$, $p < 0.01$). The effect direction of the dummy for working part-time is in line with expectations.

Main effects of independent variables

In model 1, I add the independent variables, namely, opportunity beliefs and trust, to the base model. Inclusion substantially and significantly improves explanatory power ($\Delta R^2 = 0.19$, F (2, 252) = 36.0, $p < 0.01$).

Following hypothesis 1a, I expect entrepreneurs' opportunity belief is positively related to entrepreneurs' perceived goal progress. The results for opportunity beliefs (model 1: $b = 0.289$, $p < 0.01$; full model: $b = 0.404$, $p < 0.01$) support the hypothesis. Thus, I find support for hypothesis 1a.

Following hypothesis 1b, I expect entrepreneurs' trust in the team is positively related to entrepreneurs' perceived goal progress. Again, the results for trust (model 1: $b = 0.555$, $p < 0.01$; full model: $b = 0.552$, $p < 0.01$) are in line with expectations supporting the hypothesis. Thus, I find support for hypothesis 1b.

Variables	Model 0		Model 1		Model 2		Model 3		Model 4		Model 5		Model 6	
	Est	SE	Est	SE	Est	SE	Est	SE	Est	SE	Est	SE	Est	SE
Intercept	5.730 **	0.134	5.744 **	0.106	5.740 **	0.108	5.763 **	0.104	5.649 **	0.108	5.728 **	0.112	5.678 **	0.106
Control variables - team- and venture-level														
Team size[a]	0.111 †	0.066	0.122 *	0.054	0.112 *	0.055	0.114 *	0.054	0.120 *	0.054	0.116 *	0.055	0.123 *	0.053
Team composition changed[b]	-0.217	0.163	-0.132	0.146	-0.095	0.153	-0.075	0.157	-0.035	0.151	-0.071	0.151	-0.012	0.155
Venture size[c]	0.015	0.009	0.009	0.008	0.012	0.008	0.012	0.008	0.017 *	0.008	0.014 †	0.008	0.016 *	0.008
Industry														
Computer hardware and software	(reference category)													
Services (professional and others)	0.305 †	0.170	0.169	0.147	0.140	0.150	0.131	0.146	0.141	0.148	0.144	0.147	0.135	0.144
E-commerce	0.438	0.348	0.186	0.323	0.161	0.331	0.181	0.320	0.123	0.314	0.182	0.325	0.170	0.299
Consumer products	0.399 †	0.225	0.234	0.197	0.251	0.203	0.221	0.204	0.275	0.205	0.271	0.209	0.238	0.209
Life sciences	-0.124	0.278	-0.158	0.217	-0.187	0.218	-0.184	0.208	-0.228	0.220	-0.135	0.227	-0.172	0.223
Science (materials and physical)	0.018	0.475	-0.069	0.392	-0.062	0.389	-0.020	0.375	0.048	0.392	-0.070	0.396	0.050	0.392
Control variables - individual-level														
Gender[d]	0.020	0.227	-0.045	0.214	-0.022	0.216	0.036	0.218	0.000	0.213	-0.026	0.215	0.041	0.216
Participant age	-0.012	0.024	-0.008	0.022	-0.009	0.022	-0.004	0.022	-0.007	0.021	-0.012	0.022	-0.006	0.022
Work experience	0.023	0.025	0.003	0.023	0.002	0.023	0.002	0.023	0.006	0.023	0.007	0.024	0.007	0.023
Industry experience	0.010	0.014	0.014	0.012	0.014	0.012	0.011	0.012	0.010	0.012	0.006	0.013	0.002	0.012
Education	0.091	0.065	0.071	0.051	0.072	0.050	0.056	0.050	0.054	0.049	0.074	0.051	0.043	0.049
Field of education														
Engineering	(reference category)													
Natural sciences/ mathematics	-0.345	0.211	-0.357 †	0.185	-0.347 †	0.186	-0.369 *	0.180	-0.295	0.182	-0.385 *	0.182	-0.355 *	0.173
Medicine/ health sector	0.232	0.260	0.196	0.224	0.223	0.224	0.233	0.226	0.354	0.241	0.179	0.232	0.292	0.246
Social sciences	0.103	0.362	0.091	0.344	0.090	0.343	-0.002	0.326	0.030	0.310	-0.019	0.318	-0.121	0.302
Business/ economics	-0.098	0.176	-0.109	0.147	-0.098	0.148	-0.114	0.146	-0.092	0.147	-0.112	0.150	-0.111	0.145
Creative arts	-0.145	0.340	-0.097	0.329	-0.100	0.331	-0.080	0.328	0.079	0.326	-0.082	0.334	0.070	0.324
Information technology	-0.295	0.241	-0.451 *	0.196	-0.444 *	0.194	-0.447 *	0.199	-0.468 *	0.194	-0.439 *	0.195	-0.461 *	0.203
No spezialization	0.614 †	0.355	0.489	0.341	0.396	0.332	0.393	0.327	0.310	0.337	0.170	0.351	0.142	0.346
Part-time[e]	-0.552 **	0.163	-0.393 **	0.142	-0.403 **	0.143	-0.404 **	0.141	-0.340 *	0.140	-0.414 **	0.142	-0.368 **	0.138

Table 26: Regression results

Notes: (Continues on next page) n = 276 (participants);
a Number of co-founders; b 0 = *team composition of founding team has not changed since foundation*, 1 = *team composition of founding team has changed since foundation*; c employees in FTE; d 0 = *male*, 1 = *female*; e 0 = *not working part-time*, 1 = *working part-time*;
Est = estimate; SE = standard error; † $p < 0.1$; * $p < 0.05$; ** $p < 0.01$

Source: Own illustration

Variables	Model 0		Model 1		Model 2		Model 3		Model 4		Model 5		Model 6	
	Est	SE	Est	SE	Est	SE	Est	SE	Est	SE	Est	SE	Est	SE
Independent variables														
Opportunity beliefs			0.289 **	0.084	0.296 **	0.085	0.311 **	0.078	0.372 **	0.071	0.332 **	0.095	0.404 **	0.073
Trust			0.555 **	0.089	0.557 **	0.089	0.566 **	0.085	0.538 **	0.081	0.556 **	0.085	0.552 **	0.077
Moderators														
Task uncertainty					-0.035	0.047	-0.036	0.044	-0.039	0.043	-0.031	0.047	-0.037	0.042
Shared venture experience					-0.050	0.056	-0.063	0.057	-0.078	0.055	-0.058	0.055	-0.088	0.054
Entrepreneurial experience					0.005	0.019	0.005	0.019	-0.003	0.018	0.001	0.018	-0.005	0.017
Interaction terms														
Task uncertainty × Opportunity beliefs							0.099 †	0.059					0.096 †	0.050
Task uncertainty × Trust							0.040	0.065					0.039	0.052
Shared venture experience × Opportunity b.									0.187 **	0.055			0.153 **	0.053
Shared venture experience × Trust									-0.157 *	0.061			-0.099	0.061
Entrepreneurial experience × Opportunity b.											0.059 *	0.027	0.053 *	0.025
Entrepreneurial experience × Trust											-0.062 *	0.025	-0.051 *	0.025
Model fit														
R^2	0.127		0.321		0.325		0.343		0.359		0.349		0.388	
ΔR^2			0.194		0.004		0.018		0.034		0.024		0.063	
F	2.141		5.654		5.136		5.560		6.079		5.335		6.343	
df	21, 254		23, 252		26, 249		28, 247		28, 247		28, 247		32, 243	

Table 26: Regression results (continued)
Notes: n = 276 (participants);
Est = estimate; SE = standard error; Opportunity b. = opportunity beliefs; † $p < 0.1$; * $p < 0.05$; ** $p < 0.01$
Source: Own illustration

Main effects of moderators

In model 2, I extend model 1 by including the moderators, namely, task uncertainty, shared venture experience and entrepreneurial experience. I have not hypothesized any direct effects for the moderators and the variance explained compared to model 1 also only marginally improves ($\Delta R^2 = 0.4\%$) and the improvement is not significant (F (3, 249) = 0.520, $p = 0.668$). None of the moderators shows a significant effect on goal progress. The same holds true for the full model. Hence, as expected I find no direct effect of the moderators on the dependent variable.

Interaction effects of task uncertainty

In the first interaction model, I test to what extent the relationships of opportunity beliefs and trust on perceived goal progress are moderated by task uncertainty. Model 3, which includes the main effect of all moderators as well as the interaction of task uncertainty with opportunity beliefs as well as trust, improves variance explained significantly ($\Delta R^2 = 1.8\%$, F (2, 247) = 3.410), $p < 0.05$). In analyzing the interaction effects, I first concentrate on opportunity beliefs before proceeding with trust.

Focusing on opportunity beliefs, I hypothesize that under higher task uncertainty, the relationship between entrepreneurs' opportunity belief and entrepreneurs' perceived goal progress will be weaker compared to lower task uncertainty. This suggests a negative moderation effect of task uncertainty. Following the results of model 3, the interaction effect is not significant ($b = 0.099$, $p = 0.097$). Interestingly, a trend significant at the 10% level even goes in the opposite direction compared to expectations ($b = 0.099$). Thus, under higher task uncertainty, the effect of opportunity beliefs on goal progress tends to be slightly stronger compared to when task uncertainty is lower. Model 6, including all moderators and interaction effects, yields similar results ($b = 0.096$, $p = 0.057$). Thus, the regression analysis does not provide support for hypothesis 2a.

While results are not significant at conventional level, I nonetheless examine the interaction effect as is illustrated in Figure 11. The interaction effect is once displayed for the model including the moderator task uncertainty and the interaction term only and once for the full model including all moderators and interaction terms. The x-axis represents the distance to the

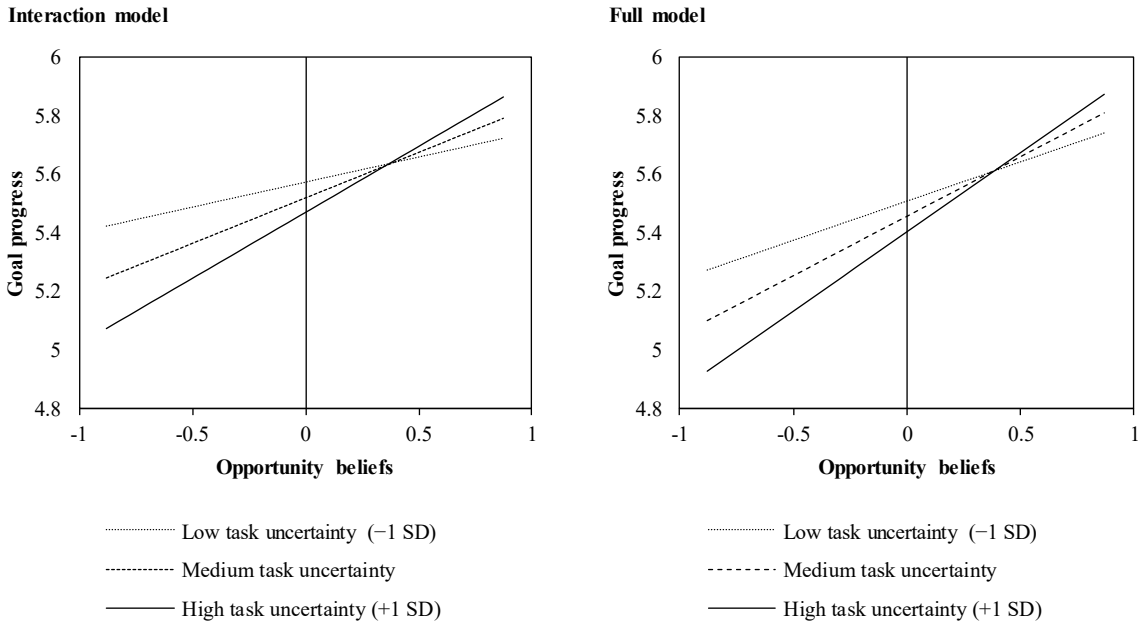

Figure 11: Interaction effect of task uncertainty and opportunity beliefs
Notes: Simple slope displayed for mean-centered opportunity beliefs from −1 SD to +1 SD; interaction model = model 3 (single moderator and interaction effect); full model = model 6 (full model including all moderators and interaction effects); SD = standard deviation
Source: Own illustration

mean for opportunity beliefs. The y-axis represents perceived goal progress. I draw three lines for the simple slope (that is, the combined coefficient of opportunity beliefs and the interaction coefficient of opportunity beliefs and task uncertainty) for high (solid line, one standard deviation above the mean), medium (dashed line, the mean), and low (dotted line, one standard deviation below the mean) levels of task uncertainty.

Examining Figure 11, one notes: The more task uncertainty entrepreneurs perceive, the stronger is the effect of opportunity beliefs on perceived goal progress. Vice-versa, the lower entrepreneurs perceive task uncertainty, the weaker is the effect of opportunity beliefs on perceived goal progress. This suggests that entrepreneurs' beliefs in the main product or service are more instrumental in motivating entrepreneurs to exert effort in a situation when entrepreneurs are unaware what entrepreneurial task to tackle compared to a situation when entrepreneurs know exactly what entrepreneurial task to choose next. Further, this suggests that particularly under high task uncertainty believing in the main product or service is important for entrepreneurs in order to be motivated and invest effort to achieve goal progress.

However, before drawing a conclusion and for the purpose of completeness, I check whether simple slopes significantly differ. For this, I examine the confidence intervals of the simple

IV: Opportunity beliefs	Interaction model				Full model			
			CI: 5%-level				CI: 5%-level	
Values of task uncertainty	Estimate	SE	LL	UL	Estimate	SE	LL	UL
Very low (-1.5 SD)	0.101	0.118	- 0.131	0.333	0.200†	0.102	- 0.001	0.400
Low (-1 SD)	0.171†	0.088	- 0.002	0.344	0.268**	0.078	0.113	0.422
Medium	0.311**	0.078	0.158	0.464	0.404**	0.073	0.261	0.547
High (+1 SD)	0.451**	0.136	0.184	0.718	0.540**	0.121	0.302	0.779
Very high (+1.5 SD)	0.521**	0.173	0.180	0.861	0.608**	0.152	0.309	0.908

Table 27: Simple slope analysis of task uncertainty and opportunity beliefs
Notes: Interaction model = model 3 (single moderator and interaction effect); Full model = model 6 (full model including all moderators and interaction effects);
CI = Confidence interval; IV = independent variable; SD = standard deviation; SE = standard error; LL = lower limit; UL = upper limit;
† $p < 0.1$; * $p < 0.05$; ** $p < 0.01$
Source: Own illustration

slope for very low (one and a half standard deviations below the mean), low (one standard deviation below the mean), medium (the mean), high (one standard deviation above the mean), and very high (one and a half standard deviations above the mean) levels of task uncertainty. The results are presented in Table 27. As confidence intervals for one and for one and half standard deviations above and below the mean are overlapping, simple slopes do not significantly differ.

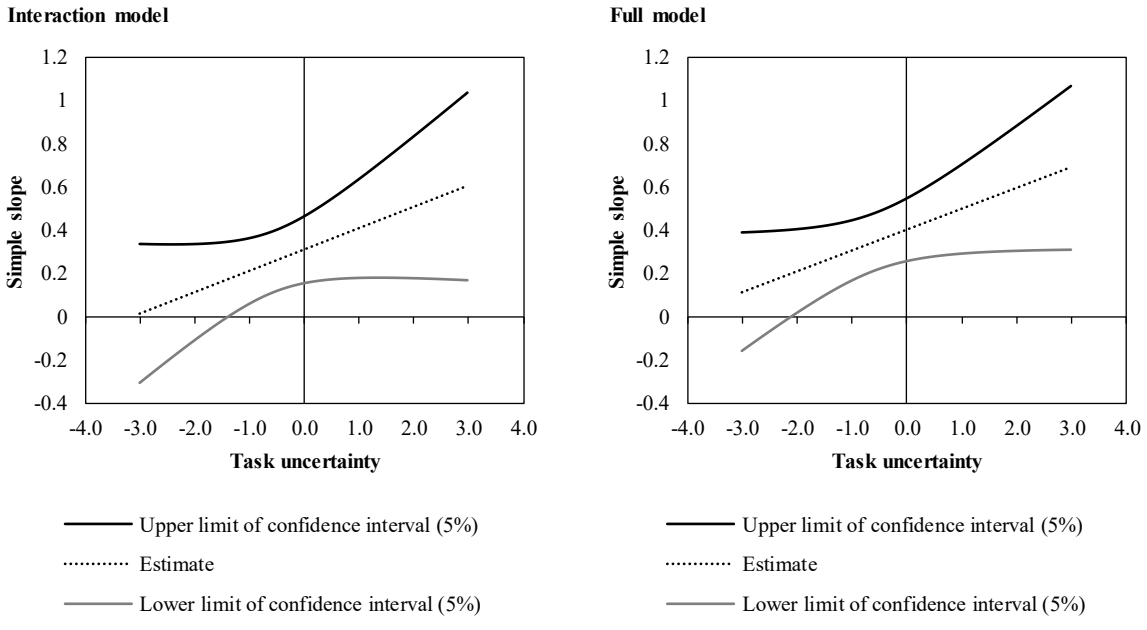

Figure 12: Simple slope and confidence intervals for task uncertainty and opportunity beliefs
Notes: Number in brackets after confidence intervals indicates significance level. Simple slope and confidence intervals are displayed for full range of observed mean-centered task uncertainty, i.e., from −3.02 (−2.13 SD) to +2.98 (+2.10 SD) (cf. Table 25);
interaction model = model 3 (single moderator and interaction effect); full model = model 6 (full model including all moderators and interaction effects);
SD = standard deviation
Source: Own illustration

Further, this can also be examined graphically in Figure 12. The simple slope and confidence intervals for the interaction model and full model are depicted. The x-axis represents the distance to the mean for task uncertainty. The y-axis represents the simple slope. I draw three lines for the upper limit of the confidence interval (black solid line), the simple slope (dotted line), and the lower limit of the confidence interval (grey solid line). Beyond the results presented in Table 27, the graph shows that the confidence intervals of simple slopes remain overlapping for any value chosen for comparison, be it ± one or ± three standard deviations. However, the lack of support from Table 27 and Figure 11 for significantly different simple slopes is not surprising given the absence of support for an interaction effect in the regression analysis.

Conclusively for the interaction effect of task uncertainty and opportunity beliefs, the results do not support hypothesis 2a. Instead, I observe a non-significant trend pointing towards the opposite effect direction. Thus, results suggest that entrepreneurs tend to be more motivated and perceive more goal progress when task uncertainty is high. Potential theoretical explanations for this phenomenon are offered in Chapter 5 Discussion.

Focusing on trust, I hypothesize that under higher task uncertainty, the relationship between entrepreneurs' trust in the team and entrepreneurs' perceived goal progress will be stronger compared to lower task uncertainty. This suggests a positive moderation effect of task uncertainty. However, neither model 3 nor model 6 support the hypothesis. The effect is not significant for both models (model 3: $b = 0.040$, $p = 0.533$, model 6: $b = 0.039$, $p = 0.447$).

Again for the purpose of completeness, I examine the simple slope and its confidence intervals. The interaction effect is illustrated in Figure 13. The x-axis represents the distance to the mean for trust. The y-axis represents perceived goal progress. I draw three lines for the simple slope (that is, the combined coefficient of trust and the interaction coefficient of trust and task uncertainty) for high (solid line, one standard deviation above the mean), medium (dashed line, the mean), and low (dotted line, one standard deviation below the mean) levels of task uncertainty. The lines are almost parallel and reveal the positive main effect of trust, namely, that trust regardless of the level of task uncertainty has a positive effect on goal progress.

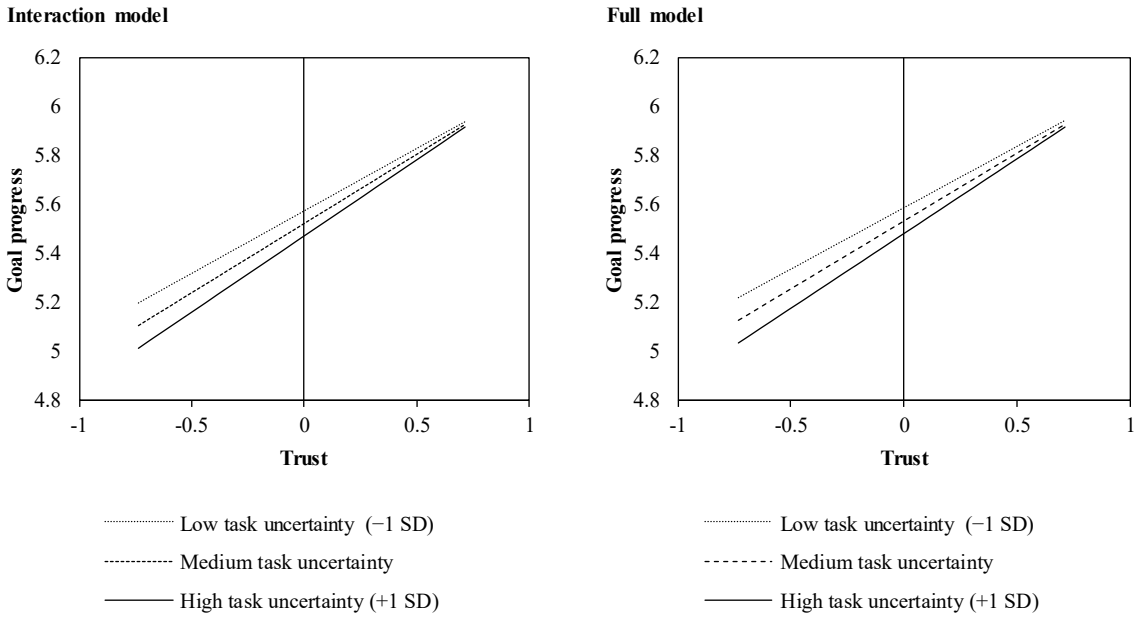

Figure 13: Interaction effect of task uncertainty and trust
Notes: Effect displayed for mean-centered trust from −1 SD to +1 SD;
Interaction model = model 3 (single moderator and interaction effect); Full model = model 6 (full model including all moderators and interaction effects); SD = standard deviation
Source: Own illustration

Consistent with the regression results, the simple slope analysis (Table 28) and graph for the simple slope (Figure 14) do not support a significant interaction effect. The simple slope is significant for all values of task uncertainty, but effect sizes do not differ significantly.

Conclusively, I find no support for hypothesis 2b. Yet, the absence of a significant interaction effect does not prove the non-existence of an interaction effect. As for opportunity beliefs, I will address this and offer further explanations in Chapter 5 Discussion.

IV: Trust	Interaction model				Full model			
			CI: 5%-level				CI: 5%-level	
Values of task uncertainty	Estimate	SE	LL	UL	Estimate	SE	LL	UL
Very low (-1.5 SD)	0.480**	0.167	0.152	0.808	0.468**	0.130	0.213	0.724
Low (-1 SD)	0.509**	0.129	0.254	0.763	0.496**	0.102	0.294	0.698
Medium	0.566**	0.085	0.398	0.734	0.552**	0.077	0.400	0.704
High (+1 SD)	0.623**	0.121	0.384	0.862	0.608**	0.110	0.391	0.825
Very high (+1.5 SD)	0.652**	0.157	0.342	0.962	0.636**	0.139	0.362	0.909

Table 28: Simple slope analysis of task uncertainty and trust
Notes: Interaction model = model 3 (single moderator and interaction effect); Full model = model 6 (full model including all moderators and interaction effects);
CI = Confidence interval; IV = independent variable; SD = standard deviation; SE = standard error; LL = lower limit; UL = upper limit;
† $p < 0.1$; * $p < 0.05$; ** $p < 0.01$
Source: Own illustration

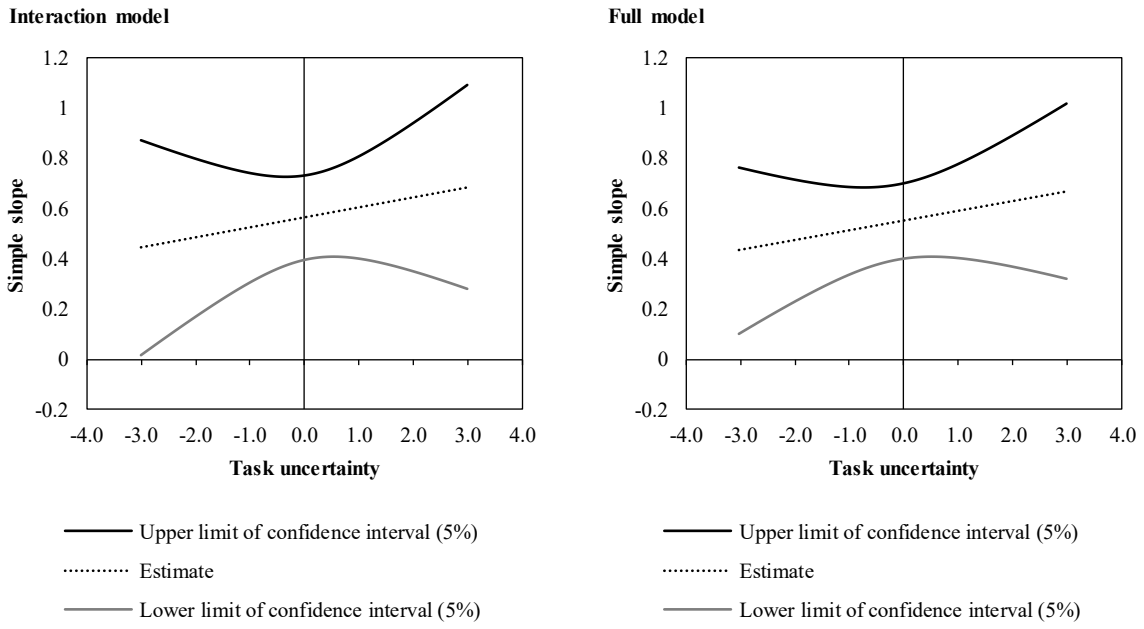

Figure 14: Simple slope and confidence intervals for task uncertainty and trust
Notes: Number in brackets after confidence intervals indicates significance level. Simple slope and confidence intervals displayed for full range of observed mean-centered task uncertainty, i.e., from −3.02 (−2.13 SD) to +2.98 (+2.10 SD) (cf. Table 25);
Interaction model = model 3 (single moderator and interaction effect); Full model = model 6 (full model including all moderators and interaction effects);
Source: Own illustration

Interaction effects of shared venture experience

In the second interaction model, that is model 4, I include the interaction effects of shared venture experience. This model explains significantly more variance compared to model 2 ($\Delta R^2 = 3.4\%$, $F\,(2, 247) = 6.521$, $p < 0.01$). Again, I first examine the results for the interaction effect with opportunity beliefs before proceeding to trust.

Following hypothesis 3a, I expect that under lower shared venture experience, the relationship between entrepreneurs' opportunity belief and entrepreneurs' perceived goal progress will be weaker compared to higher shared venture experience. This suggests a positive moderation effect of shared venture experience. Indeed, model 4 reveals a positive and significant interaction effect for shared venture experience and opportunity beliefs ($b = 0.187$, $p < 0.01$). Similarly, the full model showed a positive (though weaker) and significant interaction effect ($b = 0.153$, $p < 0.01$). Thus, regression results supported hypothesis 3a.

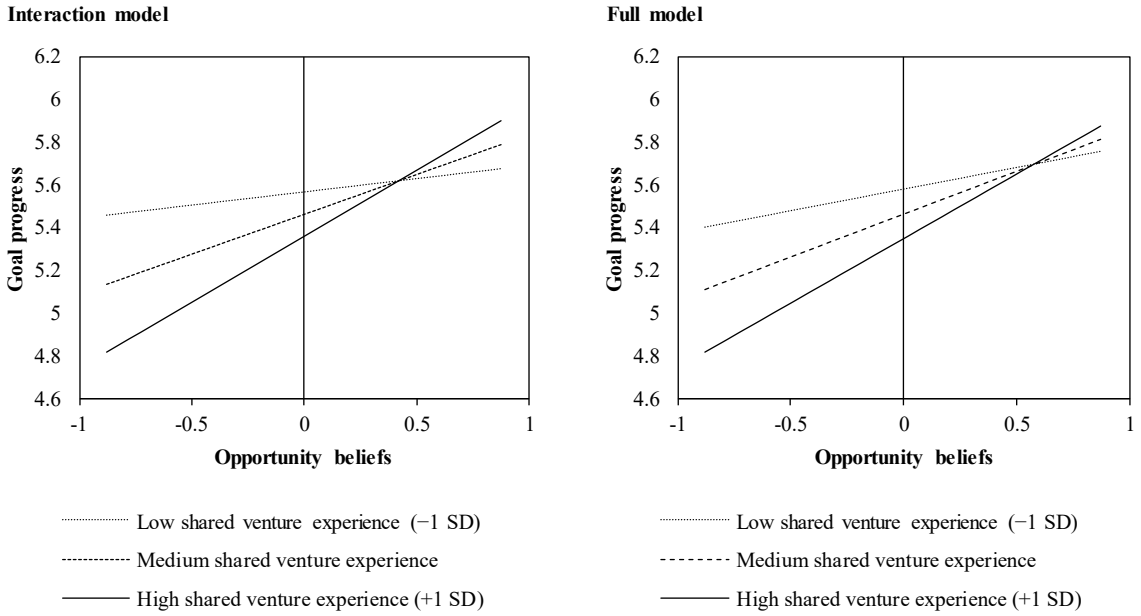

Figure 15: Interaction effect of shared venture experience and opportunity beliefs
Notes: Effect displayed for mean-centered opportunity beliefs from −1 SD to +1 SD; Interaction model = model 4 (single moderator and interaction effect); Full model = model 6 (full model including all moderators and interaction effects); SD = standard deviation
Source: Own illustration

The interaction effect of shared venture experience and opportunity beliefs is displayed in Figure 15 for both the interaction and full model. The x-axis represents the distance to the mean for opportunity beliefs. The y-axis represents perceived goal progress. I draw three lines for the simple slope (that is, the combined coefficient of opportunity beliefs and the interaction coefficient of opportunity beliefs and shared venture experience) for high (solid line, one standard deviation above the mean), medium (dashed line, the mean), and low (dotted line, one standard deviation below the mean) levels of shared venture experience.

Notably, the more shared venture experience entrepreneurs possess, the stronger is the effect of opportunity beliefs on goal progress. This means, the more entrepreneurs are familiar with the team and how to collaborate, the more does the confidence in the main product or service translate into motivation and perceived goal progress. Further, this means that entrepreneurs' opportunity belief is particularly relevant under high level of shared venture experience.

Again, I use a simple slope analysis to test the significance of the lines presented in Figure 15. The results are shown in Table 29. For both the interaction and full model, lines at one standard deviation above and below the mean of shared venture experience significantly differ.

IV: Opportunity beliefs	Interaction model				Full model			
			CI: 5%-level				CI: 5%-level	
Values of shared venture experience	Estimate	SE	LL	UL	Estimate	SE	LL	UL
Very low (-1.5 SD)	0.001	0.117	- 0.231	0.232	0.100	0.111	- 0.119	0.319
Low (-1 SD)	0.137	0.088	- 0.037	**0.310**	0.201*	0.087	0.030	**0.373**
Medium	0.372**	0.071	0.232	0.512	0.404**	0.073	0.261	0.547
High (+1 SD)	0.620**	0.113	**0.398**	0.841	0.607**	0.113	**0.384**	0.829
Very high (+1.5 SD)	0.743**	0.143	0.461	1.025	0.708**	0.142	0.428	0.987

Table 29: Simple slope analysis of shared venture experience and opportunity beliefs
Notes: Bold limits (LL/ UL) of the confidence interval indicate of non-overlapping confidence intervals.
Interaction model = model 4 (single moderator and interaction effect); Full model = model 6 (full model including all moderators and interaction effects);
CI = Confidence interval; IV = independent variable; SD = standard deviation; SE = standard error; LL = lower limit; UL = upper limit;
† $p < 0.1$; * $p < 0.05$; ** $p < 0.01$
Source: Own illustration

This can also be examined in Figure 16. In this figure, the x-axis represents distance to the mean of shared venture experience, whereas the y-axis represents the simple slope. There are lines drawn, one for the upper limit of the confidence interval (black solid line), one for the simple slope (dotted line), and one for the lower limit of the confidence interval (grey solid line). For both the interaction and full model, the simple slope for the lower limit of the confidence

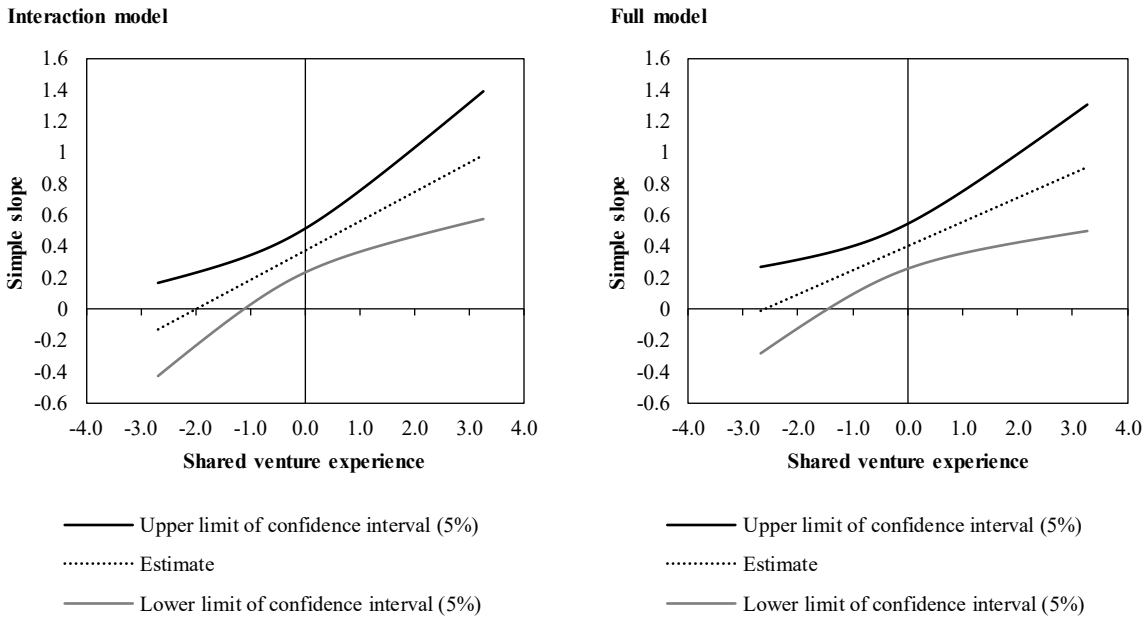

Figure 16: Simple slope and confidence intervals for shared venture experience and opportunity beliefs
Notes: Number in brackets after confidence intervals indicates significance level. Simple slope and confidence intervals displayed for full range of observed mean-centered shared venture experience, i.e., from −2.68 (−2.03 SD) to +3.31 (+2.50 SD) (cf. Table 25);
interaction model = model 4 (single moderator and interaction effect); full model = model 6 (full model including all moderators and interaction effects);
SD = standard deviation
Source: Own illustration

interval for shared venture experience of 1.32 years above the mean (+ one standard deviation) is larger than the upper limit of the confidence intervals for shared venture experience of 1.32 years below the mean (− one standard deviation) suggesting two significantly different confidence intervals. Again, this shows that lines for low and high level of venture experience as shown in Figure 15 significantly differ.
Taken together, the simple slope analysis is fully consistent with hypothesis 3a.

In conclusion, I found support for hypothesis 3a. As expected, under lower shared venture experience, the relationship between entrepreneurs' opportunity belief and entrepreneurs' perceived goal progress is weaker compared to higher shared venture experience. This means, entrepreneurs' opportunity beliefs have a stronger effect on entrepreneurs' motivation when they perceive lower uncertainty from their team compared to situations providing high uncertainty from the team.

Focusing on trust, hypothesis 3b states that under lower shared venture experience, the relationship between entrepreneurs' trust in the team and entrepreneurs' perceived goal progress will be stronger compared to higher shared venture experience. This suggests a negative moderation effect of shared venture experience. Examining the results for model 4 in

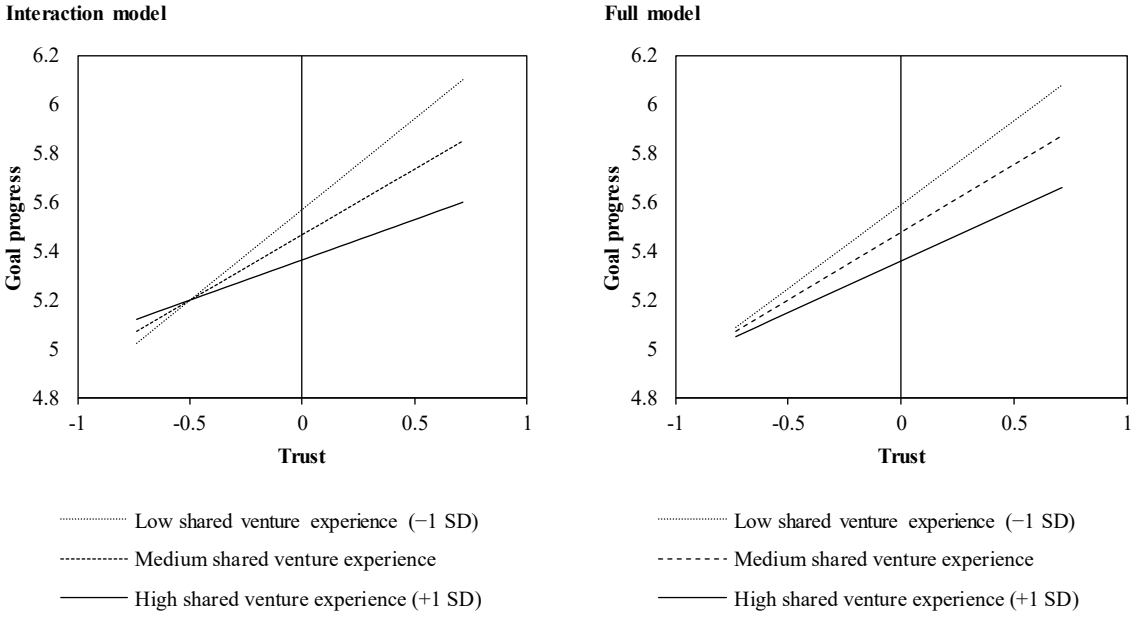

Figure 17: Interaction effect of shared venture experience and trust
Notes: Effect displayed for mean-centered trust from −1 SD to +1 SD;
interaction model = model 4 (single moderator and interaction effect); full model = model 6 (full model including all moderators and interaction effects); SD = standard deviation
Source: Own illustration

Table 26 shows a negative and significant interaction effect of shared venture experience and trust ($b = -0.157$, $p < 0.05$). However, the full model reveals a non-significant effect ($b = -0.099$, $p = 0.103$). Thus, the regression analysis provides only partial support for hypothesis 3b.

Next, the interaction effects are discussed and displayed in Figure 17 for both the interaction and full model. The x-axis represents the distance to the mean for trust. The y-axis represents perceived goal progress. I draw three lines for the simple slope (that is, the combined coefficient of trust and the interaction coefficient of trust and shared venture experience) for high (solid line, one standard deviation above the mean), medium (dashed line, the mean), and low (dotted line, one standard deviation below the mean) levels of shared venture experience.
Notably, the more shared venture experience entrepreneurs possess, the lower is the motivational effect of trust on goal progress. Vice-versa, the lower the shared venture experience of entrepreneurs, the more is trust important in motivating entrepreneurs. This means that trust is crucial for entrepreneurs operating in novel team setups.

To check whether differences are significant, I again conduct the simple slope analysis as presented in Table 30 starting with the interaction model. As the hypothesized interaction effect was negative, I compared the lower limit of the confidence interval when shared venture experience was low with the upper limit of the confidence interval when shared venture experience was high. Two significantly different intervals emerged at very high/ low values of shared venture experience (± one and a half standard deviations), but not at high/ low values of

IV: Trust	Interaction model				Full model			
			CI: 5%-level				CI: 5%-level	
Values of shared venture experience	Estimate	SE	LL	UL	Estimate	SE	LL	UL
Very low (-1.5 SD)	0.959**	0.171	**0.623**	1.296	0.749**	0.134	0.485	1.013
Low (-1 SD)	0.746**	0.105	0.539	0.952	0.683**	0.104	0.480	0.887
Middle	0.538**	0.081	0.379	0.697	0.552**	0.077	0.400	0.704
High (+1 SD)	0.330**	0.123	0.089	0.572	0.421**	0.119	0.187	0.654
Very high (+1.5 SD)	0.226	0.155	- 0.080	**0.532**	0.355*	0.152	0.056	0.653

Table 30: Simple slope analysis of shared venture experience and trust
Notes: Bold limits (LL/ UL) of the confidence interval indicate non-overlapping confidence intervals. Further, the lowest possible value for task uncertainty is set at 2.03 SD below the mean as this marks the minimum of all observed values.
Interaction model = model 4 (single moderator and interaction effect); Full model = model 6 (full model including all moderators and interaction effects);
CI = Confidence interval; IV = independent variable; SD = standard deviation; SE = standard error; LL = lower limit; UL = upper limit;
† $p < 0.1$; * $p < 0.05$; ** $p < 0.01$
Source: Own illustration

shared venture experience (± one standard deviation). This suggests that lines shown in Figure 17 are significantly different.

However, for the full model, confidence intervals are overlapping for any equal distance to the mean. This means, lines presented in Figure 17 are not significantly different from another.

These results also become apparent examining Figure 18, which represents the simple slope and confidence intervals for the interaction and full model. The x-axis represents the distance to the mean for shared venture experience. The y-axis represents the simple slope. I draw three lines for the upper limit of the confidence interval (black solid line), the simple slope (dotted line), and the lower limit of the confidence interval (grey solid line). Whereas for very high/ very low values two non-overlapping confidence intervals emerge for the interaction model, the full model shows that for any value of shared venture experience confidence intervals remain overlapping.

Taken together, results from the simple slope analysis are consistent with the analysis of the regression results.

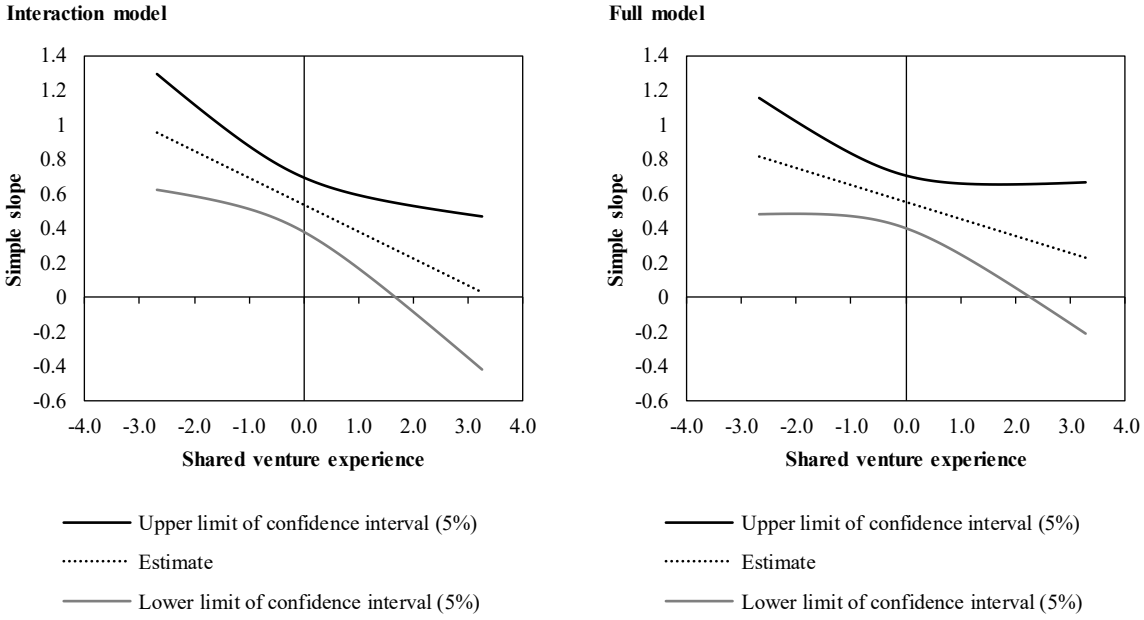

Figure 18: Simple slope and confidence intervals for shared venture experience and trust
Notes: Number in brackets after confidence intervals indicates significance level. Simple slope and confidence intervals displayed for full range of observed mean-centered shared venture experience, i.e., from −2.68 (−2.03 SD) to +3.31 (+2.50 SD) (cf. Table 25);
Interaction model = model 4 (single moderator and interaction effect); Full model = model 6 (full model including all moderators and interaction effects);
SD = standard deviation
Source: Own illustration

Conclusively, I find partial support for hypothesis 3b. The lack of statistical support in the full model might be caused by the relatively high correlation of shared venture and entrepreneurial experience (r = 0.36, see Table 25) leading to a diminished coefficient for shared venture experience. Importantly, the variance inflation factors (all variance inflation factors of the involved variables and their interaction terms were below 1.98) indicate that multicollinearity is not a problem. This topic is again picked up in the robustness checks when I offer an alternative model substituting entrepreneurial experience with founding experience.

Interaction effects of entrepreneurial experience

In the last and third interaction model, namely model 5, I tested the interaction effects of entrepreneurial experience on the relationship between opportunity beliefs as well as trust and goal progress. The model improves variance explained by 2.4% only, thereby less than the model testing the interaction effect of shared venture experience (model 4). Nonetheless, the improvement is significant (F (2, 247) = 4.470, $p < 0.05$). As for the previous interaction models, I first examine the results for the interaction effect with opportunity beliefs before proceeding with trust.

Repeating hypothesis 4a, I predict that under lower entrepreneurial experience, the relationship between entrepreneurs' opportunity belief and entrepreneurs' perceived goal progress will be weaker compared to higher entrepreneurial experience. This suggests a positive moderation effect of entrepreneurial experience. Indeed, model 5 shows a positive and significant interaction effect (b = 0.059, $p < 0.05$), which was further supported by the full model (b = 0.053, $p < 0.05$). Hence, regression results provide support for hypothesis 4a.

The interaction effect is illustrated in Figure 19. The interaction effect is once displayed for the model including the moderator entrepreneurial experience and the interaction term only and once for the full model including all moderators and interaction terms. The x-axis represents the distance to the mean for opportunity beliefs. The y-axis represents perceived goal progress. I draw three lines for the simple slope (that is, the combined coefficient of opportunity beliefs and the interaction coefficient of opportunity beliefs and entrepreneurial experience) for high (solid line, one standard deviation above the mean), medium (dashed line, the mean), and low (dotted line, one standard deviation below the mean) levels of entrepreneurial experience. Examining the graphs for both models, it becomes visible that the more entrepreneurial

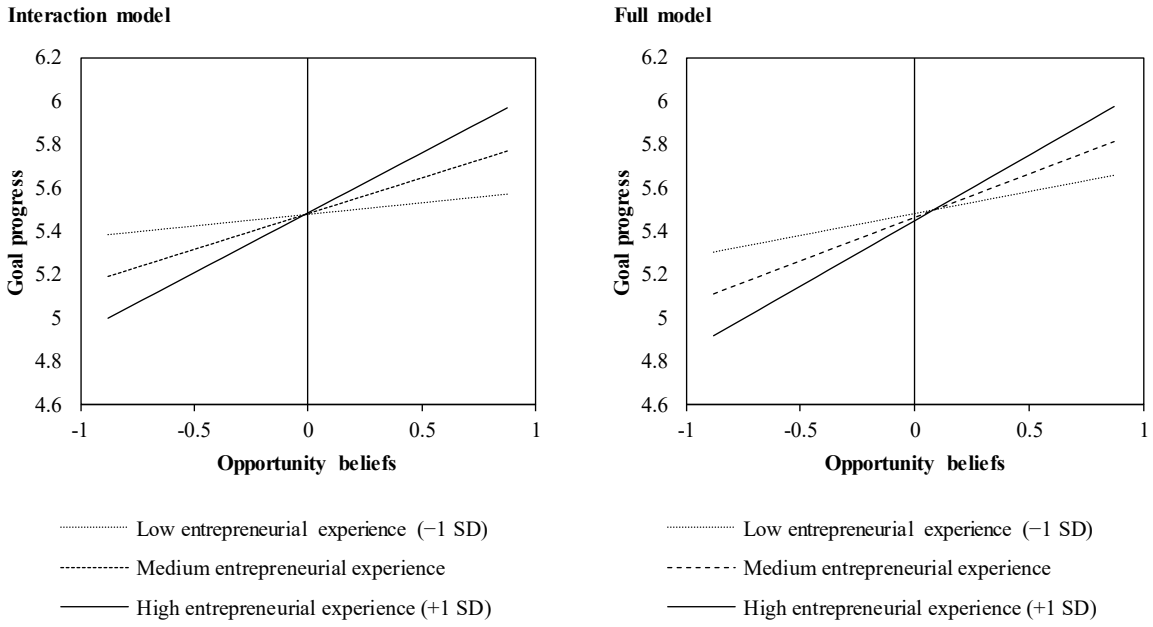

Figure 19: Interaction effect of entrepreneurial experience and opportunity beliefs
Notes: Effect displayed for mean-centered opportunity beliefs from −1 SD to +1 SD; Interaction model = model 5 (single moderator and interaction effect); Full model = model 6 (full model including all moderators and interaction effects); SD = standard deviation
Source: Own illustration

experience entrepreneurs possess, the stronger do opportunity beliefs translate into motivation and goal progress. This means, the more individual-level uncertainty entrepreneurs perceive, the weaker is the effect of opportunity beliefs on entrepreneurs motivation. This also means that for experienced entrepreneurs, the belief in the main product or service is particularly important to their motivation.

Next, I analyze the simple slope to check whether lines presented in Figure 19 are significantly different. The results of the simple slope analysis are summarized in Table 31. Starting with the interaction model, while the simple slope analysis shows that the relationship between opportunity beliefs and goal progress is significant and positive for high (one standard deviation above the mean, $b = 0.556$, $p < 0.01$) and very high levels (one and a half standard deviations above the mean, $b = 0.668$, $p < 0.01$) of entrepreneurial experience and not significant for low (one standard deviation below the mean, $b = 0.108$, $p = 0.386$) and very low (one and a half standard deviations below the mean, $b = -0.004$, $p = 0.978$) levels of entrepreneurial experience, the slopes for these different values of entrepreneurial experience do not differ significantly. Results for the full model point towards the same direction.

IV: Opportunity beliefs	Interaction model				Full model			
			CI: 5%-level				CI: 5%-level	
Values of entrepreneurial experience	Estimate	SE	LL	UL	Estimate	SE	LL	UL
Very low (-1.5 SD)	- 0.004	0.162	- 0.324	0.315	0.104	0.165	- 0.220	0.429
Low (-1 SD)	0.108	0.124	- 0.137	0.352	0.204	0.124	- 0.041	0.449
Medium	0.332**	0.095	0.146	0.518	0.404**	0.073	0.261	0.547
High (+1 SD)	0.556**	0.152	0.258	0.855	0.604**	0.113	0.382	0.826
Very high (+1.5 SD)	0.668**	0.194	0.286	1.051	0.704**	0.152	0.405	1.003

Table 31: Simple slope analysis of entrepreneurial experience and opportunity beliefs
Notes: Interaction model = model 5 (single moderator and interaction effect); Full model = model 6 (full model including all moderators and interaction effects);
CI = Confidence interval; IV = independent variable; SD = standard deviation; SE = standard error; LL = lower limit; UL = upper limit;
† $p < 0.1$; * $p < 0.05$; ** $p < 0.01$
Source: Own illustration

The simple slope and the confidence intervals for the interaction and full model can also be examined in Figure 20. The x-axis represents the distance to the mean for entrepreneurial experience. The y-axis represents the simple slope. I draw three lines for the upper limit of the confidence interval (black solid line), the simple slope (dotted line), and the lower limit of the confidence interval (grey solid line). One immediately notes the relatively broad confidence intervals compared to previously shown figures for confidence intervals (i.e., Figure 16, p. 129,

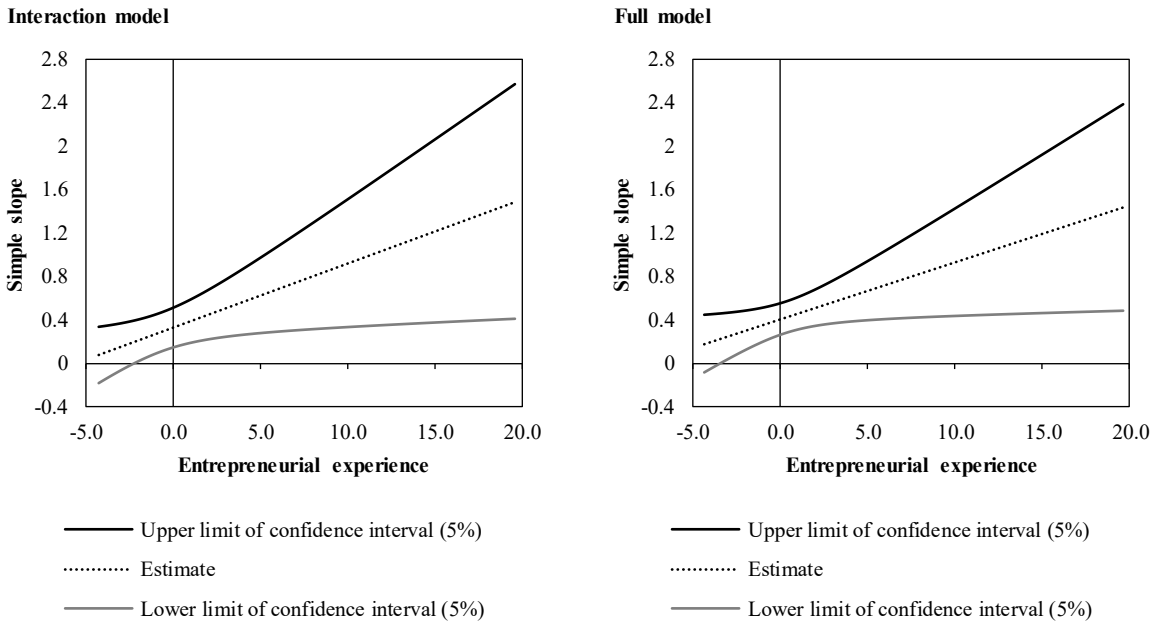

Figure 20: Simple slope and confidence intervals for shared venture experience and opportunity beliefs
Notes: Number in brackets after confidence intervals indicates significance level. Simple slope and confidence intervals displayed for full range of observed mean-centered entrepreneurial experience, i.e., from −4.33 (−1.14 SD) to +19.67 (+5.17 SD) (cf. Table 25);
interaction model = model 5 (single moderator and interaction effect); full model = model 6 (full model including all moderators and interaction effects);
SD = standard deviation
Source: Own illustration

or Figure 18). This pattern is due to the relatively broad distribution of entrepreneurial experience (*min* = 0, *max* = 24) compared to the other 7-point Likert scale-based measures (*min* = 1, *max* = 7) and its skewness (see Figure 9). Consequently, standard errors in the simple slopes analysis, which are increasing exponentially with distance to the mean (see Chapter 3.4.4 Simple slope analysis, p. 111f), result in relatively broad confidence intervals. In turn, two confidence intervals become more likely to be overlapping. Thus, the broad confidence intervals might be a reason for the limited support for hypothesis 4a. I address this topic in the robustness checks in employing a log-scaled measure of entrepreneurial experience.

In conclusion, the regression and simple slope analysis provide partial support for hypothesis 4a.

Continuing for the interaction effect of entrepreneurial experience and trust, I hypothesize that under lower entrepreneurial experience, the relationship between entrepreneurs' trust in the team and entrepreneurs' goal progress will be stronger compared to higher entrepreneurial experience. This suggests a negative moderation effect of entrepreneurial experience. The results of the regression model 5 show a negative and significant interaction effect ($b = -0.062$, $p < 0.05$), which is further supported by the full model ($b = -0.051$, $p < 0.05$). Hence, the regression analysis provides support for hypothesis 4b.

Next, I examine the interaction effects graphically. The interaction effects of the interaction and full model are plotted in Figure 21. The x-axis represents the distance to the mean for trust. The y-axis represents perceived goal progress. I draw three lines for the simple slope (that is, the combined coefficient of trust and the interaction coefficient of trust and entrepreneurial experience) for high (solid line, one standard deviation above the mean), medium (dashed line, the mean), and low (dotted line, one standard deviation below the mean) levels of entrepreneurial experience.

The graphs for both models point towards the same interpretation. The more entrepreneurial experience entrepreneurs have, the weaker is the motivational effect of trust. Vice-versa, the lower the entrepreneurial experience entrepreneurs have, the stronger is the effect of trust on motivation. This means for inexperienced entrepreneurs the belief in the team is particularly relevant for their motivation.

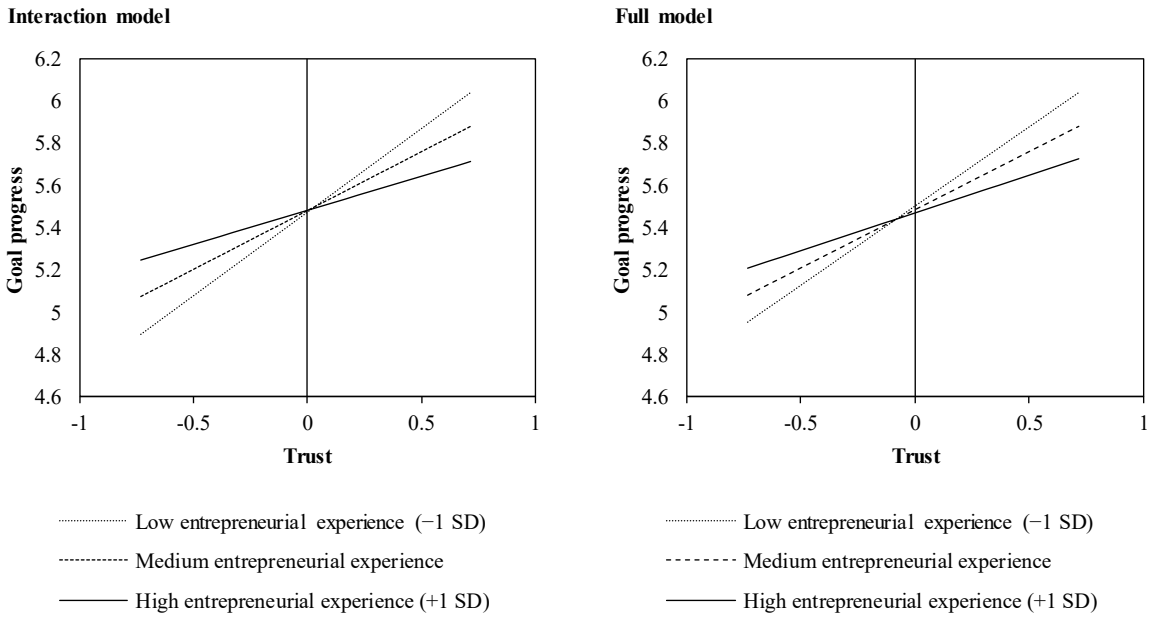

Figure 21: Interaction effect of entrepreneurial experience and trust
Notes: Effect displayed for mean-centered opportunity beliefs from −1 SD to +1 SD; Interaction model = model 5 (single moderator and interaction effect); Full model = model 6 (full model including all moderators and interaction effects); SD = standard deviation
Source: Own illustration

To further understand the pattern shown in Figure 21, I again conduct a simple slope analysis. Results are summarized in Table 32. For the interaction model, simple slopes are only significantly different for very high (one and a half standard deviations above the mean) and very low (one and a half standard deviations below the mean) levels of entrepreneurial experience. However, observing very low level of entrepreneurial experience is not possible in reality as at one and a half standard deviations below the mean, entrepreneurs would possess −1.38 years of entrepreneurial experience. Further, at high (one standard deviation above the mean) and low (one standard deviation below the mean) levels of entrepreneurial experience simple slopes do not differ significantly. For the full model, neither at low and high levels nor at very low and very high levels of entrepreneurial experience are simple slopes significantly different.

Graphically, this can also be examined in Figure 22, which plots the simple slope and confidence intervals for the interaction and full model. The x-axis represents the distance to the mean for entrepreneurial experience. The y-axis represents the simple slope. I draw three lines for the upper limit of the confidence interval (black solid line), the simple slope (dotted line),

IV: Trust	Interaction model				Full model			
			CI: 5%-level				CI: 5%-level	
Values of entrepreneurial experience	Estimate	SE	LL	UL	Estimate	SE	LL	UL
Very low (-1.5 SD)	0.907**	0.164	**0.585**	1.229	0.843**	0.176	0.497	1.190
Low (-1.0 SD)	0.790**	0.126	0.543	1.037	0.746**	0.134	0.481	1.011
Medium	0.556**	0.085	0.389	0.723	0.552**	0.077	0.400	0.704
High (+1.0 SD)	0.322*	0.128	0.069	0.575	0.358**	0.110	0.142	0.574
Very high (+1.5 SD)	0.205	0.167	- 0.124	**0.533**	0.261†	0.148	- 0.031	0.552

Table 32: Simple slope analysis of entrepreneurial experience and trust
Notes: Bold limits (LL/ UL) of the confidence interval indicate non-overlapping confidence intervals.
Interaction model = model 5 (single moderator and interaction effect); Full model = model 6 (full model including all moderators and interaction effects);
CI = Confidence interval; IV = independent variable; SD = standard deviation; SE = standard error; LL = lower limit; UL = upper limit;
† $p < 0.1$; * $p < 0.05$; ** $p < 0.01$
Source: Own illustration

and the lower limit of the confidence interval (grey solid line). As for the interaction effect of entrepreneurial experience and opportunity beliefs, the relatively broad confidence intervals are apparent relating to the distribution of the entrepreneurial experience. This also means that no non-overlapping confidence intervals emerge or, in other words, that no significantly different simple slopes emerge.

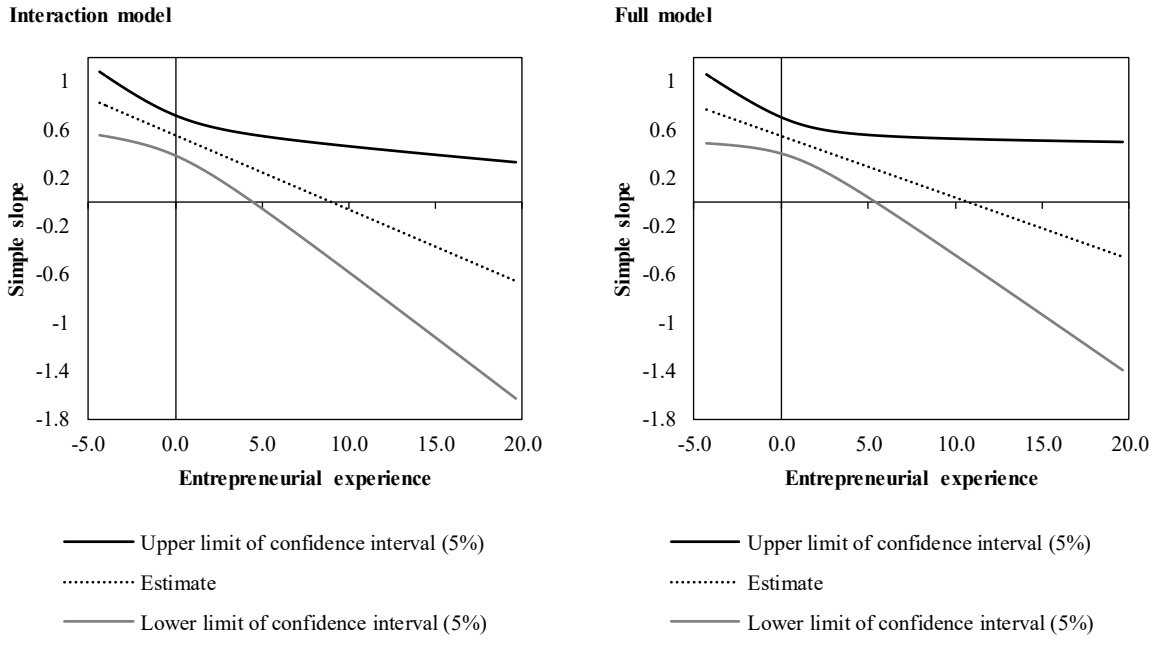

Figure 22: Simple slope and confidence intervals for entrepreneurial experience and trust
Notes: Number in brackets after confidence intervals indicates significance level. Simple slope and confidence intervals displayed for full range of observed mean-centered entrepreneurial experience, i.e., from −4.33 (−1.14 SD) to +19.67 (+5.17 SD) (cf. Table 25);
interaction model = model 5 (single moderator and interaction effect); full model = model 6 (full model including all moderators and interaction effects);
SD = standard deviation
Source: Own illustration

Conclusively, the simple slope analysis does not provide any support for significantly different interaction effects.

Concluding on the tests for hypothesis 4b, I find partial support in the regression and simple slope analysis. As the distribution of entrepreneurial experience is relatively broad, the significance of the interaction effect of entrepreneurial experience and trust might also be affected. Again, this will be picked up in the robustness checks by substituting entrepreneurial experience with a log-scaled version of entrepreneurial experience.

4.3 Robustness checks

Beyond the hypotheses testing described above, I also engage in a series of robustness checks. First, I exchange the variable entrepreneurial experience with founding experience in Chapter 4.3.1 to address issues in testing hypothesis 3b (interaction effect of shared venture experience and trust) caused by the relatively high correlation of entrepreneurial experience and shared venture experience. Second, I exchange the variable entrepreneurial experience with a log-scaled version of entrepreneurial experience in Chapter 4.3.2 due to its problematic distribution resulting in larger standard errors in the simple slope analysis for hypothesis 4a and 4b (interaction effect of entrepreneurial experience). Third, I replace the dependent variable goal progress by perceived performance in Chapter 4.3.3 to test whether results are generally applicable. Fourth, I add another belief variable closely linked to opportunity beliefs, namely, entrepreneurial self-efficacy, in Chapter 4.3.4 again to check the robustness of the main and interaction effects. Finally, I exclude all control variables in Chapter 4.3.5 following good practice to analyze whether control variables indeed are required to validate hypotheses (Becker, 2005).

4.3.1 Alternative operationalization of entrepreneurial experience

In the first robustness check, I relied on an alternative operationalization of the variable entrepreneurial experience, that is, founding experience. In testing hypothesis 3b, namely the interaction effect of shared venture experience and trust, I do not find statistical support in the full model, which might have been caused by the relatively high correlation of shared venture experience and entrepreneurial experience ($r = 0.36$, see Table 25).

High correlation might be cause of non-significance for the following reason: Assuming that two constructs affect a dependent construct with strength $\widehat{b_1}$ and $\widehat{b_2}$, I measure constructs with

Variables	Model 0		Model 1		Model 2		Model 3		Model 4		Model 5		Model 6	
	Est	SE	Est	SE	Est	SE	Est	SE	Est	SE	Est	SE	Est	SE
Intercept	5.730 **	0.134	5.744 **	0.106	5.736 **	0.107	5.759 **	0.103	5.652 **	0.106	5.725 **	0.112	5.678 **	0.105
Control variables - team- and venture-level														
Team size[a]	0.111 †	0.066	0.122 *	0.054	0.115 *	0.056	0.117 *	0.054	0.123 *	0.054	0.132 *	0.055	0.137 **	0.053
Team composition changed[b]	-0.217	0.163	-0.132	0.146	-0.095	0.153	-0.074	0.157	-0.038	0.150	-0.085	0.152	-0.025	0.155
Venture size[c]	0.015	0.009	0.009	0.008	0.012	0.008	0.011	0.008	0.016 *	0.008	0.014 †	0.008	0.016 *	0.008
Industry														
Computer hardware and software	(reference category)													
Services (professional and others)	0.305 †	0.170	0.169	0.147	0.139	0.150	0.131	0.146	0.138	0.148	0.141	0.147	0.130	0.144
E-commerce	0.438	0.348	0.186	0.323	0.153	0.332	0.174	0.320	0.116	0.315	0.181	0.320	0.167	0.294
Consumer products	0.399 †	0.225	0.234	0.197	0.259	0.203	0.229	0.202	0.279	0.204	0.291	0.211	0.259	0.208
Life sciences	-0.124	0.278	-0.158	0.217	-0.186	0.217	-0.182	0.208	-0.230	0.220	-0.162	0.223	-0.199	0.219
Science (materials and physical)	0.018	0.475	-0.069	0.392	-0.081	0.391	-0.038	0.378	0.025	0.395	-0.068	0.394	0.051	0.387
Control variables - individual-level														
Gender[d]	0.020	0.227	-0.045	0.214	-0.010	0.216	0.047	0.218	0.018	0.212	0.002	0.216	0.077	0.218
Participant age	-0.012	0.024	-0.008	0.022	-0.007	0.022	-0.003	0.022	-0.006	0.021	-0.009	0.022	-0.003	0.022
Work experience	0.023	0.025	0.003	0.023	-0.001	0.023	-0.001	0.023	0.002	0.023	0.001	0.024	0.001	0.023
Industry experience	0.010	0.014	0.014	0.012	0.013	0.012	0.011	0.012	0.009	0.012	0.008	0.012	0.003	0.012
Education	0.091	0.065	0.071	0.051	0.071	0.051	0.055	0.051	0.055	0.049	0.073	0.051	0.043	0.049
Field of education														
Engineering	(reference category)													
Natural sciences/ mathematics	-0.345	0.211	-0.357 †	0.185	-0.335 †	0.186	-0.357 *	0.180	-0.288	0.182	-0.361 *	0.182	-0.336 †	0.173
Medicine/ health sector	0.232	0.260	0.196	0.224	0.234	0.223	0.243	0.225	0.360	0.240	0.204	0.234	0.315	0.250
Social sciences	0.103	0.362	0.091	0.344	0.095	0.343	0.005	0.326	0.036	0.309	0.008	0.323	-0.109	0.304
Business/ economics	-0.098	0.176	-0.109	0.147	-0.094	0.148	-0.109	0.145	-0.091	0.146	-0.091	0.152	-0.098	0.145
Creative arts	-0.145	0.340	-0.097	0.329	-0.108	0.330	-0.088	0.327	0.065	0.324	-0.097	0.329	0.060	0.320
Information technology	-0.295	0.241	-0.451 *	0.196	-0.447 *	0.193	-0.450 *	0.198	-0.473 *	0.193	-0.443 *	0.194	-0.468 *	0.201
No spezialization	0.614 †	0.355	0.489	0.341	0.391	0.323	0.389	0.318	0.303	0.331	0.117	0.365	0.086	0.357
Part-time[e]	-0.552 **	0.163	-0.393 **	0.142	-0.408 **	0.143	-0.409 **	0.141	-0.347 *	0.140	-0.421 **	0.142	-0.374 **	0.138

Table 33: Regression results applying founding experience

Notes: (Continues on next page) n = 276 (participants);
a Number of co-founders; b 0 = *team composition of founding team has not changed since foundation*, 1 = *team composition of founding team has changed since foundation*; c employees in FTE; d 0 = *male*, 1 = *female*; e 0 = *not working part-time*, 1 = *working part-time*;
Est = estimate; SE = standard error; † $p < 0.1$; * $p < 0.05$; ** $p < 0.01$

Source: Own illustration

Variables	Model 0		Model 1		Model 2		Model 3		Model 4		Model 5		Model 6	
	Est	SE	Est	SE	Est	SE	Est	SE	Est	SE	Est	SE	Est	SE
Independent variables														
Opportunity beliefs			0.289 **	0.084	0.294 **	0.085	0.309 **	0.077	0.369 **	0.071	0.303 **	0.096	0.380 **	0.074
Trust			0.555 **	0.089	0.560 **	0.089	0.569 **	0.085	0.542 **	0.080	0.577 **	0.086	0.570 **	0.080
Moderators														
Task uncertainty					-0.037	0.047	-0.038	0.044	-0.041	0.043	-0.038	0.047	-0.043	0.042
Shared venture experience					-0.059	0.056	-0.071	0.056	-0.087	0.054	-0.066	0.054	-0.098 †	0.054
Log entrepreneurial experience					0.086	0.104	0.085	0.102	0.066	0.099	0.102	0.106	0.081	0.101
Interaction terms														
Task uncertainty × Opportunity beliefs							0.099 †	0.059					0.096 †	0.050
Task uncertainty × Trust							0.038	0.064					0.044	0.051
Shared venture experience × Opportunity b.									0.184 **	0.055			0.153 **	0.053
Shared venture experience × Trust									-0.155 *	0.060			-0.110 †	0.063
Log entrepreneurial experience × Opport.											0.260 †	0.157	0.234 †	0.137
Log entrepreneurial experience × Trust											-0.282 †	0.165	-0.231	0.168
Model fit														
R^2	0.127		0.321		0.326		0.344		0.360		0.343		0.385	
ΔR^2			0.194		0.005		0.018		0.034		0.017		0.059	
F	2.141		5.654		5.138		5.546		6.128		4.950		6.096	
df	21, 254		23, 252		26, 249		28, 247		28, 247		28, 247		32, 243	

Table 33: Regression results applying founding experience (continued)
Notes: n = 276 (participants);
Est = estimate; SE = standard error; Opportunity b. / Opport. = opportunity beliefs; † $p < 0.1$; * $p < 0.05$; ** $p < 0.01$
Source: Own illustration

variables x_1 and x_2 and the dependent construct with the variable y in order to estimate b_1 and b_2. In case x_1 and x_2 are highly correlated, the regression might provide biased estimates of $\widehat{b_1}$ and $\widehat{b_2}$ such that $b_1 < \widehat{b_1}$ and $b_2 > \widehat{b_2}$ meaning that some of the effect strength from b_1 is loaded towards b_2. Keeping precision of estimating $\widehat{b_1}$ and $\widehat{b_2}$ constant or, in other words, keeping standard errors constant, tests for significance of b_1 are less likely to provide support for a significant effect.

In this chapter, I briefly describe the variable founding experience before examining regression results followed by a simple slope analysis. As I focus on hypothesis 3b, the analysis is primarily related to this hypothesis. Regression results for other hypotheses are briefly examined in case of deviation to results presented in Chapter 4.2.

Founding experience was measured as the number of ventures entrepreneurs had previously co-founded as pointed out in Chapter 3.1.3. It has a mean distribution of 1.08, standard deviation of 1.74, minimum of 0 and maximum of 14 (see Table 25). Compared to entrepreneurial experience, founding experience shows a considerably lower correlation with shared venture experience ($r = 0.06$, see Table 25).

For the regression analysis, I substitute entrepreneurial experience with founding experience. The results are presented in Table 33. Both the interaction model (model 4) and full model are significant (F (28, 247) = 6.319, $p < 0.001$ and F (32, 243) = 7.035, $p < 0.001$, respectively) and explain a substantial share of variance ($R^2 = 36.2\%$ and $R^2 = 39.2\%$, respectively). Notably, the interaction effect of shared venture experience and trust is negative and significant in both the interaction model ($b = -0.150$, $p < 0.05$) and full model ($b = -0.126$, $p < 0.05$) as

IV: Trust	Interaction model				Full model			
			CI: 5%-level				CI: 5%-level	
Values of shared venture experience	Estimate	SE	LL	UL	Estimate	SE	LL	UL
Very low (-1.5 SD)	0.845**	0.135	**0.579**	1.111	0.832**	0.137	0.563	1.102
Low (-1 SD)	0.746**	0.105	0.539	0.953	0.749**	0.108	0.535	0.962
Medium	0.547**	0.080	0.389	0.705	0.582**	0.080	0.425	0.739
High (+1 SD)	0.348**	0.122	0.108	0.589	0.415**	0.111	0.197	0.634
Very high (+1.5 SD)	0.249	0.155	- 0.056	**0.554**	0.332*	0.140	0.056	0.607

Table 34: Simple slope analysis of shared venture experience and trust (applying founding experience)
Notes: Bold limits (LL/ UL) of the confidence interval indicate start/ end of non-overlapping confidence intervals.
interaction model = model 4 (single moderator and interaction effect); full model = model 6 (full model including all moderators and interaction effects);
CI = Confidence interval; IV = independent variable; SD = standard deviation; SE = standard error; LL = lower limit; UL = upper limit;
† $p < 0.1$; * $p < 0.05$; ** $p < 0.01$
Source: Own illustration

hypothesized. While the main analysis only provide limited support for hypothesis 3b (see above), the alternative operationalization of entrepreneurial experience in terms of founding experience results in a pattern consistent with hypothesis 3b.

For the analysis of the simple slope and confidence intervals (Table 34), I first start with the interaction model. Two non-overlapping confidence intervals emerge for very high (one and a half standard deviations above the mean) and very low (one and a half standard deviations below the mean) levels of shared ventured experience. However, confidence intervals are overlapping comparing high (one standard deviations above the mean) and low (standard deviations below the mean) levels of shared venture experience. The same holds true for the full model, which does not indicate significantly different simples slope for any pair of values for shared venture experience.

This also becomes visible when examining the plotted simple slope and confidence intervals for the interaction and full model as shown in Figure 23. The x-axis represents the distance to the mean for shared venture experience. The y-axis represents the simple slope. I plot three

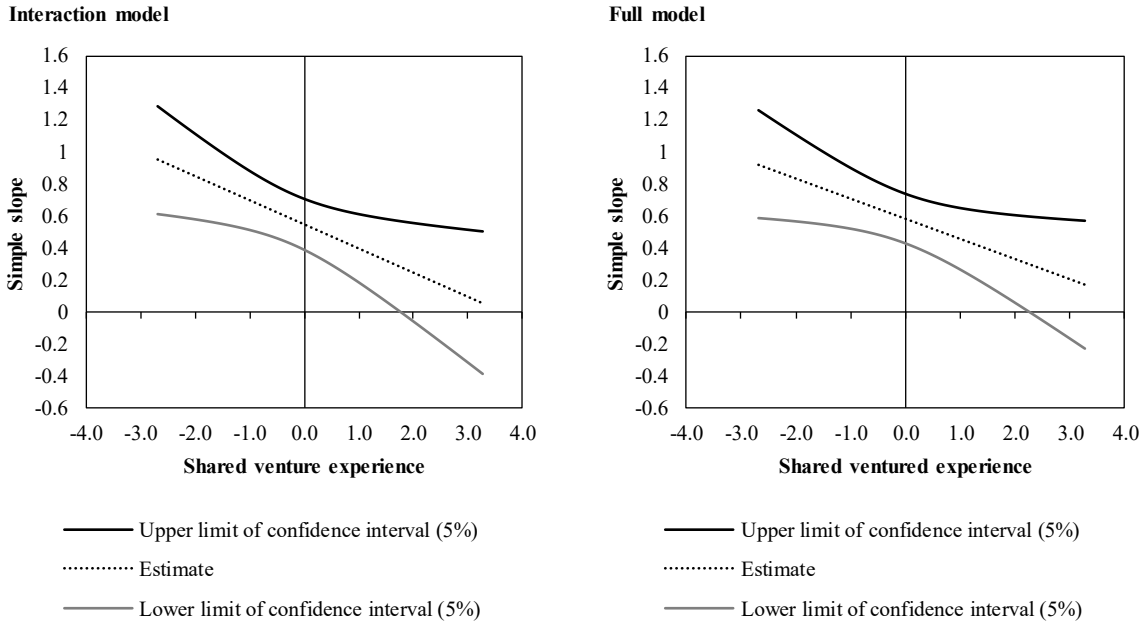

Figure 23: Simple slope and confidence intervals for shared venture experience and trust (applying founding experience)

Notes: Number in brackets after confidence intervals indicates significance level. Simple slope and confidence intervals displayed for full range of observed mean-centered shared venture experience, i.e., from −2.68 (−2.03 SD) to +3.31 (+2.50 SD) (cf. Table 25);
interaction model = model 4 (single moderator and interaction effect); full model = model 6 (full model including all moderators and interaction effects);
SD = standard deviation

Source: Own illustration

lines for the upper limit of the confidence interval (black solid line), the simple slope (dotted line), and the lower limit of the confidence interval (grey solid line). Whereas for the interaction model, two non-overlapping confidence intervals are visible for very low (−1.99 years of or one a half standard deviations below the mean) and very high (+1.99 years of or one a half standard deviations above the mean) levels of shared venture experience, this is not examinable for the full model.
Conclusively, the regression and simple slope analysis provide partial support for hypothesis 3b consistent with the results of the main analysis.

Regarding the other hypotheses, the regression shown in this chapter provides similar results as presented in Table 26 with exception for hypotheses 2a (same direction, but not significant) and 4b (same direction, but not significant).

4.3.2 Variable transformation of entrepreneurial experience

In the second robustness check, I exchange the variable entrepreneurial experience by a log-scaled version of entrepreneurial experience. In so doing, I seek to mitigate inflation of the standard error of beta estimation affecting its surrounding confidence intervals. The non-findings described in Chapter 4.2 have raised concerns that inflated confidence intervals might bias the tests of hypotheses 4a and 4b. In the following, I describe the procedure and distribution of the log-scaled version of entrepreneurial experience. Then, I examine the regression results and simple slope analysis. The analysis will primarily focus on tests related to hypotheses 4a and 4b. Other regression results will only be highlighted in case of deviation from Chapter 4.2.

To create a log-scaled version of entrepreneurial experience, I proceeded as follows. First, all observations were added by one as the initial distribution of entrepreneurial experience included the number 0, which is not defined for the logarithm. Then, the natural logarithm was calculated. The resulting log-scaled version of entrepreneurial experience (hereafter: log entrepreneurial experience) ranges from 0 to 3.22, has a mean of 1.47 and standard deviation of 0.64 (see Table 25). Last, I mean-centered observations for further analysis.

The regression results including log entrepreneurial experience are displayed in Table 35. For the analysis, I focus on the interaction model (model 5) and full model (model 6). Models provide a good fit to the data (R^2 = 0.34 and R^2 = 0.38, respectively) and are significant

(F (28, 247) = 4.950, $p < 0.001$ and F (32, 243) = 6.096, $p < 0.001$, respectively). Starting with the interaction model, the interaction effects showed the same direction for opportunity beliefs ($b = 0.260$) and trust ($b = -0.282$), but are neither significant for opportunity beliefs ($p = 0.099$) nor for trust ($p = 0.088$). For the full model, estimates for the interaction effects are even smaller (opportunity beliefs: $b = 0.234$; trust: $b = -0.231$) and also not significant (opportunity beliefs: $p = 0.090$; trust: $p = 0.171$). Thus, the regression of the robustness check does not provide support for hypotheses 4a and hypothesis 4b.

Hereafter and only for illustration, I examine the simple slope and confidence intervals as depicted in Figure 24 for the interaction effect with opportunity beliefs and trust. Again, the simple slope and confidence intervals are represented for the interaction and full model. The x-axis represents the distance to the mean for log entrepreneurial experience. The y-axis represents the simple slope. I plot three lines for the upper limit of the confidence interval (black solid line), the simple slope (dotted line), and the lower limit of the confidence interval (grey solid line). Unsurprisingly following the regression results, no two non-overlapping confidence intervals emerge. Thus, the simple slope analysis does also not provide support for hypotheses 4a and 4b.

Conclusively, the robustness check using log entrepreneurial experience instead of entrepreneurial experience does not provide support for hypotheses 4a and 4b.

With regard to the other hypotheses, the robustness check provides the same pattern of results as presented in Table 26.

Variables	Model 0		Model 1		Model 2		Model 3		Model 4		Model 5		Model 6	
	Est	SE	Est	SE	Est	SE	Est	SE	Est	SE	Est	SE	Est	SE
Intercept	5.730 **	0.134	5.744 **	0.106	5.736 **	0.107	5.759 **	0.103	5.652 **	0.106	5.725 **	0.112	5.678 **	0.105
Control variables - team- and venture-level														
Team size[a]	0.111 †	0.066	0.122 *	0.054	0.115 *	0.056	0.117 *	0.054	0.123 *	0.054	0.132 *	0.055	0.137 **	0.053
Team composition changed[b]	-0.217	0.163	-0.132	0.146	-0.095	0.153	-0.074	0.157	-0.038	0.150	-0.085	0.152	-0.025	0.155
Venture size[c]	0.015	0.009	0.009	0.008	0.012	0.008	0.011	0.008	0.016 *	0.008	0.014 †	0.008	0.016 *	0.008
Industry														
Computer hardware and software	(reference category)													
Services (professional and others)	0.305 †	0.170	0.169	0.147	0.139	0.150	0.131	0.146	0.138	0.148	0.141	0.147	0.130	0.144
E-commerce	0.438	0.348	0.186	0.323	0.153	0.332	0.174	0.320	0.116	0.315	0.181	0.320	0.167	0.294
Consumer products	0.399 †	0.225	0.234	0.197	0.259	0.203	0.229	0.202	0.279	0.204	0.291	0.211	0.259	0.208
Life sciences	-0.124	0.278	-0.158	0.217	-0.186	0.217	-0.182	0.208	-0.230	0.220	-0.162	0.223	-0.199	0.219
Science (materials and physical)	0.018	0.475	-0.069	0.392	-0.081	0.391	-0.038	0.378	0.025	0.395	-0.068	0.394	0.051	0.387
Control variables - individual-level														
Gender[d]	0.020	0.227	-0.045	0.214	-0.010	0.216	0.047	0.218	0.018	0.212	0.002	0.216	0.077	0.218
Participant age	-0.012	0.024	-0.008	0.022	-0.007	0.022	-0.003	0.022	-0.006	0.021	-0.009	0.022	-0.003	0.022
Work experience	0.023	0.025	0.003	0.023	-0.001	0.023	-0.001	0.023	0.002	0.023	0.001	0.024	0.001	0.023
Industry experience	0.010	0.014	0.014	0.012	0.013	0.012	0.011	0.012	0.009	0.012	0.008	0.012	0.003	0.012
Education	0.091	0.065	0.071	0.051	0.071	0.051	0.055	0.051	0.055	0.049	0.073	0.051	0.043	0.049
Field of education														
Engineering	(reference category)													
Natural sciences/ mathematics	-0.345	0.211	-0.357 †	0.185	-0.335 †	0.186	-0.357 *	0.180	-0.288	0.182	-0.361 *	0.182	-0.336 †	0.173
Medicine/ health sector	0.232	0.260	0.196	0.224	0.234	0.223	0.243	0.225	0.360	0.240	0.204	0.234	0.315	0.250
Social sciences	0.103	0.362	0.091	0.344	0.095	0.343	0.005	0.326	0.036	0.309	0.008	0.323	-0.109	0.304
Business/ economics	-0.098	0.176	-0.109	0.147	-0.094	0.148	-0.109	0.145	-0.091	0.146	-0.091	0.152	-0.098	0.145
Creative arts	-0.145	0.340	-0.097	0.329	-0.108	0.330	-0.088	0.327	0.065	0.324	-0.097	0.329	0.060	0.320
Information technology	-0.295	0.241	-0.451 *	0.196	-0.447 *	0.193	-0.450 *	0.198	-0.473 *	0.193	-0.443 *	0.194	-0.468 *	0.201
No spezialization	0.614 †	0.355	0.489	0.341	0.391	0.323	0.389	0.318	0.303	0.331	0.117	0.365	0.086	0.357
Part-time[e]	-0.552 **	0.163	-0.393 **	0.142	-0.408 **	0.143	-0.409 **	0.141	-0.347 *	0.140	-0.421 **	0.142	-0.374 **	0.138

Table 35: Regression results applying log entrepreneurial experience

Notes: (Continues on next page) n = 276 (participants);
a Number of co-founders; b 0 = *team composition of founding team has not changed since foundation*, 1 = *team composition of founding team has changed since foundation*; c employees in FTE; d 0 = *male*, 1 = *female*; e 0 = *not working part-time*, 1 = *working part-time*;
Est = estimate; SE = standard error; † $p < 0.1$; * $p < 0.05$; ** $p < 0.01$

Source: Own illustration

Variables	Model 0		Model 1		Model 2		Model 3		Model 4		Model 5		Model 6	
	Est	SE	Est	SE	Est	SE	Est	SE	Est	SE	Est	SE	Est	SE
Independent variables														
Opportunity beliefs			0.289 **	0.084	0.294 **	0.085	0.309 **	0.077	0.369 **	0.071	0.303 **	0.096	0.380 **	0.074
Trust			0.555 **	0.089	0.560 **	0.089	0.569 **	0.085	0.542 **	0.080	0.577 **	0.086	0.570 **	0.080
Moderators														
Task uncertainty					-0.037	0.047	-0.038	0.044	-0.041	0.043	-0.038	0.047	-0.043	0.042
Shared venture experience					-0.059	0.056	-0.071	0.056	-0.087	0.054	-0.066	0.054	-0.098 †	0.054
Log entrepreneurial experience					0.086	0.104	0.085	0.102	0.066	0.099	0.102	0.106	0.081	0.101
Interaction terms														
Task uncertainty × Opportunity beliefs							0.099 †	0.059					0.096 †	0.050
Task uncertainty × Trust							0.038	0.064					0.044	0.051
Shared venture experience × Opportunity b.									0.184 **	0.055			0.153 **	0.053
Shared venture experience × Trust									-0.155 *	0.060			-0.110 †	0.063
Log entrepreneurial experience × Opport.											0.260 †	0.157	0.234 †	0.137
Log entrepreneurial experience × Trust											-0.282 †	0.165	-0.231	0.168
Model fit														
R^2	0.127		0.321		0.326		0.344		0.360		0.343		0.385	
ΔR^2			0.194		0.005		0.018		0.034		0.017		0.059	
F	2.141		5.654		5.138		5.546		6.128		4.950		6.096	
df	21, 254		23, 252		26, 249		28, 247		28, 247		28, 247		32, 243	

Table 35: Regression results applying log entrepreneurial experience (continued)
Notes: n = 276 (participants);
Est = estimate; SE = standard error; Opportunity b. / Opport. = opportunity beliefs; † $p < 0.1$; * $p < 0.05$; ** $p < 0.01$
Source: Own illustration

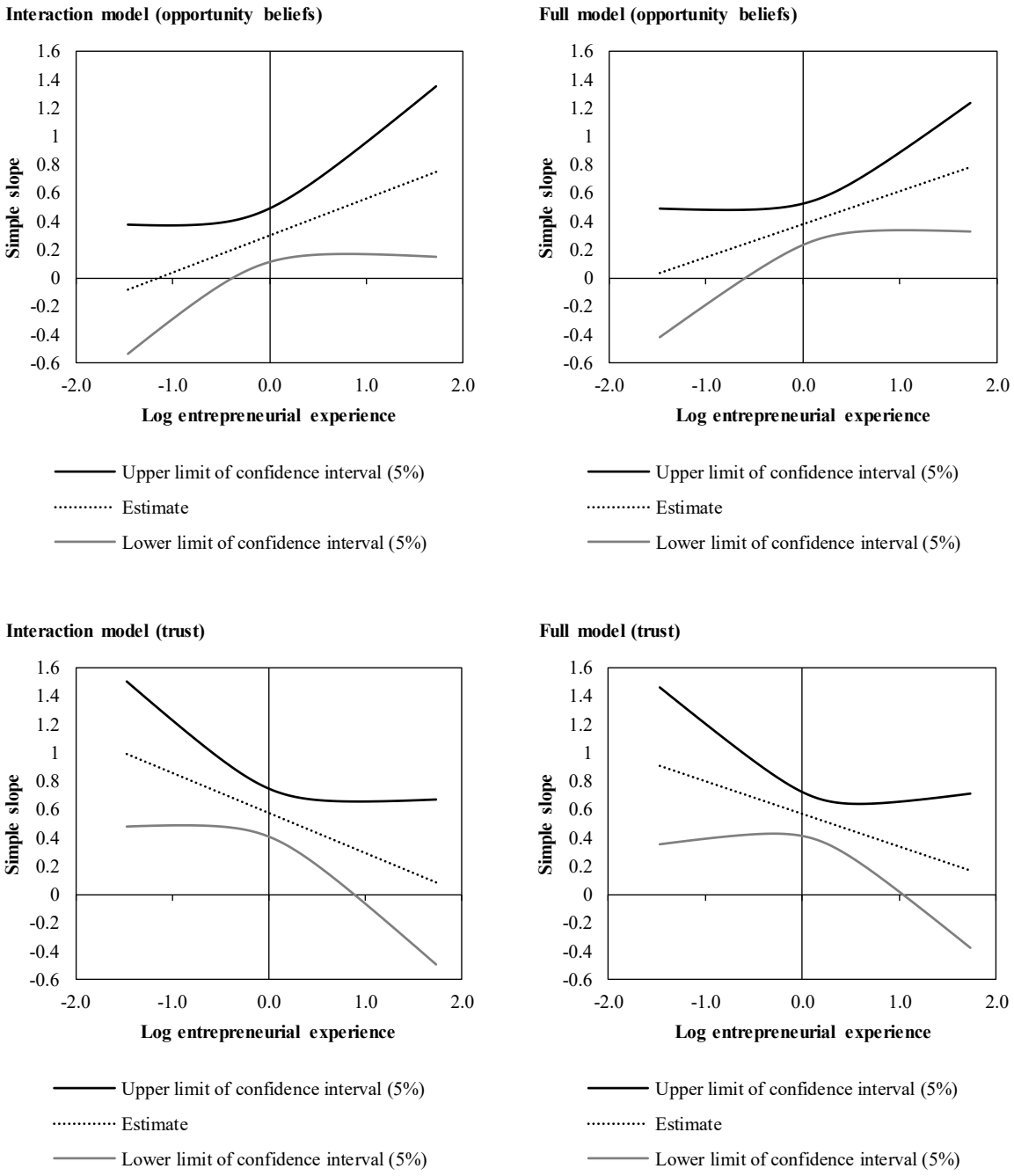

Figure 24: Simple slope and confidence intervals for log entrepreneurial experience and opportunity beliefs/ trust

Notes: Simple slope and confidence intervals displayed for full range of observed mean-centered log entrepreneurial experience, i.e., from −1.47 (−2.30 SD) to +1.75 (+2.70 SD);
interaction model = model 5 (single moderator and interaction effect); full model = model 6 (full model including all moderators and interaction effects);
SD = standard deviation

Source: Own illustration

4.3.3 Perceived venture performance as alternative dependent variable

In the next robustness check, I exchange the dependent variable goal progress by another outcome variable, namely, perceived venture performance, to test the generalizability of my findings. I will first describe the measure and then proceed to the regression results.

The measure performance serves as an alternative for perceived goal progress. To capture perceived venture performance, I relied on the scale developed by De Clercq and Sapienza (2006), which found application in the entrepreneurial context, was published in a renowned journal (*Journal of Business Venturing*) and received substantial attention from the community (226 citations[24]), thereby fulfilling the selection criteria as described in Chapter 3.3 Measures. Perceived venture performance consisted of two sub-scales, satisfaction with venture performance and overall venture performance rating, each including four items as shown in Table 36. Participants could answer all items on a 7-point Likert scale ranging from 1 = *not at all* to 7 = *completely*. *Cronbach's alpha* was 0.87, slightly below the reported *Cronbach's alpha* by De Clercq and Sapienza of 0.93. However, it was still clearly above the conventional cutoff of 0.70 (Nunnally & Bernstein, 1994). Further, perceived performance shows a high correlation with goal progress ($r = 0.65$) indicating consistency of outcomes across levels.

Item	Formulation
	Please indicate how satisfied you are with the venture's progress on the following criteria.
	Satisfaction with venture performance
(1)	Sales
(2)	Market share
(3)	Return on investment (RoI)
(4)	Market development
	Please indicate to what extent you agree with the following statements.
	Overall venture performance rating
(5)	I am very satisfied with the progress of our venture.
(6)	So far, I would rate our venture's performance as poor.
(7)	Considering its age, our venture has done very well.
(8)	Market conditions aside, our investments in this venture have greatly paid off.

Table 36: Overview of items to measure perceived performance
Source: Own illustration

[24] Retrieved from Google Scholar on 19.11.2019.

Variables	Model 0		Model 1		Model 2		Model 3		Model 4		Model 5		Model 6	
	Est	SE	Est	SE	Est	SE	Est	SE	Est	SE	Est	SE	Est	SE
Intercept	4.680 **	0.173	4.699 **	0.147	4.712 **	0.144	4.744 **	0.148	4.643 **	0.149	4.701 **	0.147	4.680 **	0.155
Control variables - team- and venture level														
Team size[a]	0.027	0.072	0.030	0.061	0.016	0.062	0.019	0.061	0.024	0.063	0.020	0.062	0.027	0.062
Team composition changed[b]	-0.112	0.150	-0.034	0.135	-0.001	0.144	0.016	0.148	0.049	0.144	0.022	0.142	0.072	0.147
Venture size[c]	0.014	0.011	0.009	0.011	0.010	0.013	0.010	0.012	0.014	0.013	0.012	0.013	0.014	0.013
Industry														
Computer hardware and software	(reference category)													
Services (professional and others)	0.416 *	0.177	0.282	0.173	0.232	0.174	0.215	0.167	0.234	0.173	0.236	0.173	0.223	0.168
E-commerce	0.448	0.404	0.206	0.379	0.162	0.402	0.180	0.388	0.134	0.402	0.183	0.398	0.182	0.382
Consumer products	0.219	0.279	0.055	0.253	0.063	0.251	0.022	0.249	0.093	0.254	0.084	0.254	0.041	0.255
Life sciences	-0.492 †	0.263	-0.516 *	0.225	-0.569 *	0.230	-0.572 **	0.217	-0.599 **	0.229	-0.521 *	0.226	-0.544 *	0.220
Science (materials and physical)	-0.099	0.415	-0.139	0.414	-0.174	0.399	-0.124	0.360	-0.080	0.396	-0.182	0.390	-0.068	0.353
Control variables - individual level														
Gender[d]	-0.113	0.230	-0.172	0.222	-0.090	0.224	0.000	0.231	-0.067	0.223	-0.093	0.223	0.004	0.231
Participant age	0.011	0.023	0.013	0.022	0.014	0.022	0.020	0.022	0.014	0.022	0.010	0.022	0.018	0.022
Work experience	-0.021	0.024	-0.037	0.023	-0.047 *	0.023	-0.048 *	0.023	-0.043 †	0.023	-0.043 †	0.023	-0.043	0.024
Industry experience	0.025	0.017	0.028 †	0.015	0.023	0.015	0.019	0.015	0.019	0.015	0.015	0.016	0.010	0.016
Education	0.025	0.072	0.006	0.064	0.015	0.065	-0.009	0.066	0.000	0.065	0.016	0.065	-0.018	0.066
Field of education														
Engineering	(reference category)													
Natural sciences/ mathematics	-0.590 *	0.249	-0.603 *	0.234	-0.595 *	0.236	-0.623 **	0.225	-0.557 *	0.237	-0.632 **	0.235	-0.623 **	0.228
Medicine/ health sector	0.024	0.282	-0.013	0.243	0.016	0.258	0.037	0.264	0.120	0.266	-0.025	0.268	0.063	0.277
Social sciences	-0.039	0.352	-0.039	0.357	-0.033	0.346	-0.174	0.333	-0.093	0.314	-0.138	0.313	-0.290	0.305
Business/ economics	0.102	0.178	0.089	0.155	0.086	0.158	0.064	0.158	0.085	0.160	0.071	0.158	0.061	0.161
Creative arts	-0.095	0.253	-0.053	0.239	-0.092	0.229	-0.059	0.238	0.053	0.242	-0.074	0.232	0.055	0.248
Information technology	0.002	0.284	-0.156	0.245	-0.163	0.241	-0.168	0.233	-0.184	0.242	-0.159	0.239	-0.178	0.233
No spezialization	0.000	0.566	-0.161	0.549	-0.301	0.517	-0.317	0.531	-0.377	0.526	-0.520	0.535	-0.554	0.553
Part-time[e]	-0.486 **	0.171	-0.345 *	0.158	-0.372 *	0.160	-0.375 *	0.157	-0.320 *	0.159	-0.381 *	0.160	-0.351 *	0.157

Table 37: Regression results using perceived performance as dependent variable

Notes: (Continues on next page) n = 276 (participants);
a Number of co-founders; b 0 = *team composition of founding team has not changed since foundation*, 1 = *team composition of founding team has changed since foundation*; c employees in FTE; d 0 = *male*, 1 = *female*; e 0 = *not working part-time*, 1 = *working part-time*;
Est = estimate; SE = standard error; † $p < 0.1$; * $p < 0.05$; ** $p < 0.01$

Source: Own illustration

Variables	Model 0		Model 1		Model 2		Model 3		Model 4		Model 5		Model 6	
	Est	SE	Est	SE	Est	SE	Est	SE	Est	SE	Est	SE	Est	SE
Independent variables														
Opportunity beliefs			0.310 **	0.069	0.319 **	0.070	0.338 **	0.071	0.377 **	0.070	0.353 **	0.072	0.414 **	0.071
Trust			0.474 **	0.089	0.483 **	0.088	0.497 **	0.086	0.465 **	0.083	0.483 **	0.084	0.484 **	0.080
Moderators														
Task uncertainty					-0.043	0.050	-0.045	0.047	-0.046	0.049	-0.040	0.050	-0.045	0.047
Shared venture experience					-0.087	0.059	-0.102 †	0.059	-0.111 †	0.060	-0.095	0.058	-0.124 *	0.060
Entrepreneurial experience					0.042 †	0.022	0.041 †	0.022	0.036 †	0.022	0.039 †	0.020	0.034	0.021
Interaction terms														
Task uncertainty × Opportunity beliefs							0.122 **	0.044					0.126 **	0.045
Task uncertainty × Trust							0.085	0.064					0.077	0.057
Shared venture experience × Opportunity b.									0.142 *	0.057			0.107 †	0.060
Shared venture experience × Trust									-0.142 *	0.067			-0.082	0.063
Entrepreneurial experience × Opportunity b.											0.056 *	0.023	0.054 *	0.024
Entrepreneurial experience × Trust											-0.060 *	0.024	-0.050 *	0.023
Model fit														
R^2	0.148		0.293		0.308		0.339		0.328		0.328		0.369	
ΔR^2			0.145		0.015		0.031		0.020		0.020		0.061	
F	2.436		6.378		5.996		7.277		6.403		6.062		7.052	
df	21, 254		23, 252		26, 249		28, 247		28, 247		28, 247		32, 243	

Table 37: Regression results using perceived performance as dependent variable (continued)
Notes: n = 276 (participants);
Est = estimate; SE = standard error; Opportunity b. = opportunity beliefs; † $p < 0.1$; * $p < 0.05$; ** $p < 0.01$
Source: Own illustration

The results of the regression analysis using perceived venture performance as the dependent variable are shown in Table 37. I will primarily focus on model fit and on differences in effect direction and significance relevant for hypotheses testing compared to the initial model provided in Table 26.

Regarding model fit, both hierarchical regressions substantially and gradually improve variance explained from the base model to the full model. Whereas the original full model predicting goal progress explains 38.7% of the variance of the dependent variable, the model using perceived venture performance as the dependent variable explains 36.8% of the variance of the dependent variable. Nonetheless, both are fitting well (model 6, initial model: R^2 = 38.8%; model 6, model using perceived venture performance: R^2 = 36.9%) and are significant (original full model: F (32, 243) = 6.343, $p < 0.001$; full model using perceived venture performance as dependent variable: F (32, 243) = 7.052, $p < 0.001$).

With regard to hypotheses test, both models provide similar results with three notable exceptions. First, the interaction effect of task uncertainty and opportunity beliefs is significant in both the interaction and full model (interaction model: b = 0.122; $p < 0.01$, full model: b = 0.126, $p < 0.01$) of the robustness check. However, in the original model predicting goal progress, it does not reach conventional level of significance (interaction model: b = 0.099, p = 0.097, full model: b = 0.096, p = 0.057). Second, the interaction effect of shared venture experience and opportunity beliefs does not reach conventional level of significance in the full model (b = 0.107, p = 0.074) compared to its significant coefficient in the original model predicting goal progress (b = 0.153, $p < 0.01$). Last, in the full model shared venture experience has a direct and significant relationship with perceived venture performance (b = −0.124, $p < 0.05$).

Despite these exceptions, the results of the robustness check predicting perceived venture performance are consistent with the results of the original model presented in Chapter 4.2. This pattern indicates that the results are generalizable and the theorizing does not apply only to entrepreneurs' perception of goal progress, but also their perception of venture performance.

4.3.4 Addition of entrepreneurial self-efficacy as another main effect

In the section to follow, I check whether the inclusion of entrepreneurial self-efficacy, another belief central to entrepreneurs (Chen et al., 1998; Drnovšek, Wincent, & Cardon, 2010b; Zhao

et al., 2005), affects the results. For this, I will first define and describe entrepreneurial self-efficacy and then examine regression results.

To measure entrepreneurial self-efficacy, I relied on the scale developed by Zhao et al. (2005), published in the *Journal of Applied Psychology* and highly cited (2,323 citations[25]). The scale included 4 items as presented in Table 38. Participants could answer using a 7-point Likert scale ranging from 1 = *not at all* to 7 = *completely*. The distribution of entrepreneurial self-efficacy is *mean* = 6.07, *SD* = 0.78, *min* = 1.67 and *max* = 7.00 (see Table 25). The scale provided sufficient reliability (*Cronbach's alpha* = 0.74), yet slightly below the reported value by Zhao et al. (*Cronbach's alpha* = 0.78).

The regression results including entrepreneurial self-efficacy are presented in Table 39. Specifically, entrepreneurial self-efficacy is included as an independent variable and as interacting with all moderators. I will first examine regression results for entrepreneurial self-efficacy and its interaction terms before proceeding to analyzing potential deviations compared to the initial model from Chapter 4.2.

Starting with the main effect of entrepreneurial self-efficacy, no significant effects arise for model 1 ($b = 0.133$, $p = 0.167$) or the full model ($b = 0.132$, $p = 0.104$). Hence, there is no support for a direct effect of entrepreneurial self-efficacy on goal progress.
Further, there is no support for an interaction effect of entrepreneurial self-efficacy with either task uncertainty (interaction model: $b = 0.106$, $p = 0.083$; full model: $b = 0.063$, $p = 0.239$) or entrepreneurial experience (interaction model: $b = -0.024$, $p = 0.340$; full model: $b = -0.167$, $p = 0.501$).

Item	Formulation
	Please indicate the extent to which the following statements describe yourself.
(1)	I am confident that I can successfully identify new business opportunities.
(2)	I am confident that I can successfully create new products/ services.
(3)	I am confident that I can successfully think creatively.
(4)	I am confident that I can successfully commercialize an idea or new development.

Table 38: Overview of items to measure entrepreneurial self-efficacy
Source: Own illustration

[25] Retrieved from Google Scholar on 19.11.2019.

Variables	Model 0		Model 1		Model 2		Model 3		Model 4		Model 5		Model 6	
	Est	SE	Est	SE	Est	SE	Est	SE	Est	SE	Est	SE	Est	SE
Intercept	5.730 **	0.134	5.754 **	0.109	5.750 **	0.112	5.772 **	0.110	5.616 **	0.110	5.743 **	0.115	5.649 **	0.109
Control variables - team- and venture level														
Team size[a]	0.111 †	0.066	0.126 *	0.053	0.119 *	0.055	0.118 *	0.052	0.131 *	0.053	0.125 *	0.055	0.133 *	0.052
Team composition changed[b]	-0.217	0.163	-0.167	0.143	-0.136	0.153	-0.110	0.158	-0.064	0.149	-0.105	0.151	-0.033	0.155
Venture size[c]	0.015	0.009	0.010	0.008	0.013	0.009	0.012	0.008	0.017 *	0.008	0.014 †	0.008	0.016 *	0.008
Industry														
Computer hardware and software	(reference category)													
Services (professional and others)	0.305 †	0.170	0.149	0.146	0.125	0.148	0.109	0.147	0.110	0.150	0.115	0.148	0.093	0.148
E-commerce	0.438	0.348	0.148	0.334	0.130	0.340	0.080	0.327	0.049	0.312	0.155	0.332	0.062	0.293
Consumer products	0.399 †	0.225	0.206	0.199	0.224	0.206	0.234	0.212	0.309	0.209	0.257	0.212	0.296	0.219
Life sciences	-0.124	0.278	-0.165	0.213	-0.186	0.213	-0.218	0.202	-0.175	0.212	-0.133	0.218	-0.133	0.209
Science (materials and physical)	0.018	0.475	-0.064	0.385	-0.059	0.384	-0.009	0.381	0.068	0.382	-0.059	0.396	0.083	0.393
Control variables - individual level														
Gender[d]	0.020	0.227	0.037	0.213	0.046	0.215	0.092	0.217	0.000	0.205	0.039	0.216	0.040	0.212
Participant age	-0.012	0.024	-0.006	0.022	-0.007	0.022	-0.004	0.022	-0.012	0.021	-0.009	0.022	-0.008	0.022
Work experience	0.023	0.025	0.002	0.023	0.002	0.023	0.002	0.023	0.006	0.022	0.006	0.023	0.006	0.023
Industry experience	0.010	0.014	0.013	0.012	0.014	0.012	0.011	0.012	0.014	0.012	0.006	0.013	0.005	0.013
Education	0.091	0.065	0.064	0.051	0.065	0.050	0.052	0.049	0.075	0.048	0.063	0.049	0.060	0.048
Field of education														
Engineering	(reference category)													
Natural sciences/ mathematics	-0.345	0.211	-0.347 †	0.184	-0.339 †	0.185	-0.308 †	0.180	-0.262	0.178	-0.376 *	0.182	-0.292 †	0.171
Medicine/ health sector	0.232	0.260	0.185	0.219	0.207	0.219	0.269	0.228	0.387	0.250	0.177	0.227	0.354	0.257
Social sciences	0.103	0.362	0.124	0.344	0.120	0.343	0.011	0.330	0.102	0.316	0.009	0.322	-0.073	0.308
Business/ economics	-0.098	0.176	-0.108	0.147	-0.098	0.149	-0.105	0.146	-0.071	0.145	-0.115	0.151	-0.088	0.143
Creative arts	-0.145	0.340	-0.122	0.324	-0.119	0.327	-0.146	0.323	0.112	0.317	-0.100	0.334	0.073	0.309
Information technology	-0.295	0.241	-0.439 *	0.201	-0.434 *	0.199	-0.452 *	0.206	-0.509 **	0.193	-0.441 *	0.199	-0.517 *	0.205
No spezialization	0.614 †	0.355	0.382	0.349	0.313	0.341	0.339	0.340	0.258	0.348	0.088	0.365	0.097	0.368
Part-time[e]	-0.552 **	0.163	-0.403 **	0.143	-0.411 **	0.143	-0.414 **	0.141	-0.308 *	0.141	-0.416 **	0.143	-0.339 *	0.140

Table 39: Regression results including entrepreneurial self-efficacy

Notes: (Continues on next page) n = 276 (participants);
a Number of co-founders; b 0 = *team composition of founding team has not changed since foundation*, 1 = *team composition of founding team has changed since foundation*; c employees in FTE; d 0 = *male*, 1 = *female*; e 0 = *not working part-time*, 1 = *working part-time*;
Est = estimate; SE = standard error; † $p < 0.1$; * $p < 0.05$; ** $p < 0.01$

Source: Own illustration

Variables	Model 0		Model 1		Model 2		Model 3		Model 4		Model 5		Model 6	
	Est	SE	Est	SE	Est	SE	Est	SE	Est	SE	Est	SE	Est	SE
Independent variables														
Opportunity beliefs			0.257 **	0.087	0.263 **	0.089	0.272 **	0.081	0.349 **	0.075	0.312 **	0.100	0.386 **	0.079
Trust			0.544 **	0.090	0.546 **	0.090	0.560 **	0.086	0.533 **	0.084	0.541 **	0.087	0.544 **	0.078
Entrepreneurial self-efficacy			0.133	0.096	0.124	0.097	0.155 †	0.087	0.136 †	0.082	0.087	0.097	0.133	0.081
Moderators														
Task uncertainty					-0.034	0.047	-0.046	0.044	-0.040	0.043	-0.032	0.047	-0.046	0.042
Shared venture experience					-0.037	0.058	-0.051	0.059	-0.069	0.056	-0.052	0.057	-0.084	0.056
Entrepreneurial experience					0.001	0.019	0.002	0.019	-0.005	0.018	0.001	0.019	-0.005	0.018
Interaction terms														
Task uncertainty × Opportunity beliefs							0.066	0.059					0.082	0.052
Task uncertainty × Trust							0.050	0.066					0.048	0.054
Task uncertainty × Entrepreneurial self-eff.							0.106 †	0.061					0.063	0.054
Shared venture experience × Opportunity b.									0.236 **	0.061			0.196 **	0.056
Shared venture experience × Trust									-0.146 *	0.065			-0.093	0.062
Shared venture experience × Entrepreneur.									-0.148 **	0.054			-0.140 **	0.047
Entrepreneurial experience × Opportunity b.											0.068 *	0.028	0.063 *	0.028
Entrepreneurial experience × Trust											-0.062 *	0.025	-0.050 †	0.025
Entrepreneurial experience × Entrepreneur.											-0.024	0.025	-0.017	0.025
Model fit														
R^2	0.127		0.328		0.331		0.360		0.380		0.355		0.417	
ΔR^2			0.201		0.003		0.029		0.049		0.024		0.086	
F	2.141		5.577		5.074		5.935		6.709		5.223		6.704	
df	21, 254		24, 251		27, 248		30, 245		30, 245		30, 245		36, 239	

Table 39: Regression results including entrepreneurial self-efficacy (continued)
Notes: n = 276 (participants);
Est = estimate; SE = standard error; Entrepreneurial self-eff. / Entrepreneur. = entrepreneurial self-efficacy; Opportunity b. = opportunity beliefs;
† $p < 0.1$; * $p < 0.05$; ** $p < 0.01$
Source: Own illustration

The only significant interaction effect emerges in combination with shared venture experience. There is a significant negative interaction effect for both the interaction model ($b = -0.148$, $p < 0.01$) and the full model ($b = -0.140$, $p < 0.01$). This pattern suggests that the interaction of shared venture experience and entrepreneurial self-efficacy affects motivation in a similar way as does the interaction between shared venture experience and trust.

Regression results are also largely consistent with the findings of the original model, with one notable exception: the interaction effect of entrepreneurial experience and trust. While results for the interaction model are similar (original interaction model: $b = -0.062$, $p < 0.05$; interaction model adding entrepreneurial self-efficacy: $b = -0.062$, $p < 0.05$), the results deviate for the full model as effect direction remains the same (original full model: $b = -0.051$; full model adding entrepreneurial self-efficacy: $b = -0.050$), yet the finding is not significant anymore (original full model: $p < 0.05$; full model adding entrepreneurial self-efficacy: $p = 0.051$). As I judge this as a minor deviation, I conclude that the original results are robust when entrepreneurial self-efficacy is included as an additional variable.

4.3.5 Exclusion of control variables

Last, I check the robustness of results for the exclusion of control variables. In so doing, I follow the recommendation of Becker (2005) and Spector and Brannick (2011), who criticize the frequent and blind inclusion of control variables with little theoretical consideration and reporting of relevance of inclusion. In explaining the rationale and potential correlations with the dependent and independent variables in Chapter 3.3.7, I addressed their concern regarding theoretical consideration. Moreover, by excluding the control variables in a robustness check, I address their concern of reporting the relevance of inclusion.

The regression results excluding the control variables are displayed in Table 40. I will focus on differences to the results from the initial model presented in Chapter 4.2 and highlight the most relevant control variables.

With regard to the interaction effect of task uncertainty and opportunity beliefs in the interaction model, the effect is positive and significant ($b = 0.128$, $p < 0.01$) compared to an coefficient that is not significant at conventional levels in the original model ($b = 0.099$, $p = 0.097$). The same applies to the full model, which shows a positive and significant interaction effect of task uncertainty and opportunity beliefs in the model excluding control variables ($b = 0.120$,

Variables	Model 0		Model 1		Model 2		Model 3		Model 4		Model 5		Model 6	
	Est	SE	Est	SE	Est	SE	Est	SE	Est	SE	Est	SE	Est	SE
Intercept			4.496 **	0.064	4.496 **	0.064	4.520 **	0.064	4.468 **	0.065	4.477 **	0.066	4.476 **	0.066
Independent variables														
Opportunity beliefs			0.341 **	0.074	0.335 **	0.075	0.355 **	0.072	0.394 **	0.073	0.364 **	0.079	0.425 **	0.074
Trust			0.473 **	0.091	0.475 **	0.091	0.491 **	0.088	0.449 **	0.084	0.477 **	0.088	0.469 **	0.083
Moderators														
Task uncertainty					-0.025	0.053	-0.029	0.049	-0.031	0.051	-0.019	0.052	-0.029	0.048
Shared venture experience					-0.048	0.053	-0.063	0.052	-0.068	0.052	-0.053	0.052	-0.080	0.052
Entrepreneurial experience					0.024	0.018	0.023	0.018	0.022	0.018	0.018	0.018	0.015	0.018
Interaction terms														
Task uncertainty × Opportunity beliefs							0.128 **	0.047					0.120 *	0.047
Task uncertainty × Trust							0.097	0.067					0.094	0.061
Shared venture experience × Opportunity b.									0.153 **	0.058			0.125 *	0.058
Shared venture experience × Trust									-0.177 **	0.063			-0.131 *	0.063
Entrepreneurial experience × Opportunity b.											0.051 *	0.025	0.045 †	0.025
Entrepreneurial experience × Trust											-0.053 *	0.023	-0.031	0.023
Model fit														
R^2			0.176		0.183		0.221		0.215		0.200		0.256	
ΔR^2					0.007		0.038		0.032		0.017		0.073	
F			27.46		12.24		14.56		10.90		9.706		9.971	
df			2, 273		5, 270		7, 268		7, 268		7, 268		11, 264	

Table 40: Regression results excluding control variables
Notes: Model 0 included for consistent labeling of models; n = 276 (participants);
Est = estimate; SE = standard error; Opportunity b. = opportunity beliefs; † $p < 0.1$; * $p < 0.05$; ** $p < 0.01$
Source: Own illustration

$p < 0.05$), whereas the interaction effect is not significant in the original model ($b = 0.096$, $p = 0.057$).

Interestingly, the interaction effects of shared venture experience and trust is not significant in the full original model ($b = -0.099$, $p = 0.103$), yet is significant in the full model excluding control variables ($b = -0.131$, $p < 0.05$). This might relate to a bias caused by the exclusion of the control variable *team size*. Team size shows a substantial and negative correlation with shared venture experience ($r = -0.28$, see Table 25) and has a significant and positive effect on goal progress ($b = 0.123$, $p < 0.05$, see full model Table 26). Thus and by exclusion, its effect on goal progress might be captured by shared venture experience.

Last, the interaction effects of entrepreneurial experience with opportunity beliefs and trust in the full model show different results when excluding control variables. Starting with the interaction effect of entrepreneurial experience and opportunity beliefs, the original model shows a significant and positive effect on goal progress ($b = 0.053$, $p < 0.05$), whereas the model excluding the control variables does not show a significant effect ($b = 0.045$, $p = 0.07$). With respect to the interaction effect of entrepreneurial experience and trust, the original model holds a significantly negative effect on goal progress ($b = -0.051$, $p < 0.05$), whereas again the model excluding the control variables does not show such an effect ($b = -0.031$, $p = 0.185$). This pattern might relate to a bias caused by the exclusion of the dummy control variable for entrepreneurs working part-time on their venture. According to the results, entrepreneurs working part-time and entrepreneurial experience are positively correlated ($r = 0.13$, see Table 25) as entrepreneurs, for instance, engage in founding multiple ventures at the same time. Further, the dummy controlling for entrepreneurs working part-time has a significantly negative effect on goal progress ($b = -0.368$, $p < 0.01$, see full model Table 26). Thus, exclusion of this control variable might lead to a bias in the regression.

Due to differences in results for the interaction effect of task uncertainty and opportunity beliefs, the interaction effect of shared venture experience and trust, as well as the interaction effects of entrepreneurial experience with each opportunity beliefs and trust, I conclude that control variables appear to be relevant for hypotheses testing.

4.4 Summary of results

Finally, I present the results of all analysis in a collective and comprehensive manner. The rationale for drawing conclusion is as follows: In case every analysis provides support (i.e.,

direction of coefficient as theorized and significant at the 5%-level), I conclude having found support for a hypothesis. In case some analysis provide support and no analyses yield significant results contrary to expectation (i.e., direction of coefficient contrary to theorizing and significant at the 5%-level), I conclude having found partial support for a hypothesis. In any other case, I conclude having found no support.
The summary of results is presented in Table 41. Analyses indicating a trend but not showing significance at conventional level (i.e., $0.05 < p < 0.1$) are displayed but do not affect conclusions. I will elaborate in every hypothesis separately.

Hypothesis 1a suggests that entrepreneurs' opportunity belief is positively related to entrepreneurs' perceived goal progress. I find support for the hypothesis in the main analysis and in every robustness check at the 1%-level of significance. Hypothesis 1a is, thus, supported.

In hypothesis 1b, I expect that entrepreneurs' trust in the team is positively related to entrepreneurs' perceived goal progress. I find support for the hypothesis in the main analysis and in every robustness check at the 1%-level of significance. Thus, hypothesis 1b is supported.

In hypothesis 2a, I expect that under higher task uncertainty, the relationship between entrepreneurs' opportunity belief and entrepreneurs' perceived goal progress will be weaker compared to lower task uncertainty. This suggests a negative moderation effect of task uncertainty. The results of the main analysis indicate no negative moderating effect of task uncertainty. The coefficient of the interaction term even is positive, but not significant at conventional level ($p < 0.1$). Robustness checks using founding experience (interaction model), log entrepreneurial experience, and perceived venture performance yield similar results. The robustness checks using founding experience (full model) and entrepreneurial self-efficacy do not provide support. Thus, hypothesis 2a is rejected.

Hypothesis 2b predicts that under higher task uncertainty, the relationship between entrepreneurs' trust in the team and entrepreneurs' perceived goal progress will be stronger compared to lower task uncertainty. This suggests a positive moderation effect of task uncertainty. All regressions are not significantly different from zero ($p > 0.1$). Hence, hypothesis 2b is rejected.

Hypothesis		Main analysis[1]				Robustness checks[2]														Conclusion
		Regression				Regression Founding experience				Regression Log entrepreneurial exp.				Regression Perceived venture perf.				Regression Entrepreneurial self-efficacy				
		Interaction model[3] (IM)		Full model (FM)		IM		FM		IM		FM		IM		FM		IM		FM		
#	Effect	*b*	*p*	*b*	*p*	*b*	*p*	*b*	*p*	*b*	*p*	*b*	*p*	*b*	*p*	*b*	*p*	*b*	*p*	*b*	*p*	
1a	+	+	**	+	**	+	**	+	**	+	**	+	**	+	**	+	**	+	**	+	**	Supported
1b	+	+	**	+	**	+	**	+	**	+	**	+	**	+	**	+	**	+	**	+	**	Supported
2a	–	+	†	+	†	+	†	+		+	†	+	†	+	**	+	**	+		+		Not supported
2b	+	+		+		+		+		+		+		+		+		+		+		Not supported
3a	+	+	**	+	**	+	**	+	**	+	**	+	**	+	*	+	†	+	**	+	**	Partially supported
3b	–	–	*	–		–	*	–	*	–	*	–	†	–	*	–		–	*	–		Partially supported
4a	+	+	*	+	*	+	**	+	*	+	†	+	†	+	*	+	*	+	*	+	*	Partially supported
4b	–	–	*	–	*	–		–		–	†	–		–	*	–	*	–	*	–	†	Partially supported

Table 41: Summary of results

Notes: 1 Main analysis with regard to work in Chapter 4.2.

2 The robustness check for exclusion of control variables as has been excluded as the test is primarily related to the relevance of control variables and not the significance of effects. Further, simple slope analysis for founding experience and log entrepreneurial experience have been excluded as results were confirmative to the regression results and, thus, were not adding additional, relevant information to the table.

3 For hypotheses 1a and 1b the interaction model refers to the main effect model, namely model. In all other cases, the interaction model refers to the hypothesis-specific interaction model, namely model 3 for hypotheses 2a and 2b, model 4 for hypotheses 3a and 3b and model 5 for hypotheses 4a and 4b.

exp. = experience; perf. = performance; † $p < 0.1$; * $p < 0.05$; ** $p < 0.01$

Source: Own illustration

Hypothesis 3a proposes that under lower shared venture experience, the relationship between entrepreneurs' opportunity belief and entrepreneurs' perceived goal progress will be weaker compared to higher shared venture experience. This means a positive moderation effect of shared venture experience. All results of the main analysis and most robustness checks provided support for a positive and significant effect ($b > 0$, $p < 0.05$). Yet, the robustness check relying on perceived venture performance does not indicate significance at conventional level ($p < 0.1$) in the full model. Conclusively, I only find partial support for hypothesis 3a.

Following hypothesis 3b, I expect that under lower shared venture experience, the relationship between entrepreneurs' trust in the team and entrepreneurs' perceived goal progress will be stronger compared to higher shared venture experience. This means a negative moderation effect of shared venture experience. The interaction model of the main analysis and most robustness checks provided support for the hypothesis ($b < 0$, $p < 0.05$). Yet, the full models of the main regression and the full models of the robustness checks using log entrepreneurial experience, perceived venture performance, and entrepreneurial self-efficacy do not provide support. Thus, I find partial support for hypothesis 3b.

Following hypothesis 4a, I expect that under lower entrepreneurial experience, the relationship between entrepreneurs' opportunity belief and entrepreneurs' perceived goal progress will be weaker compared to higher entrepreneurial experience. This means a positive moderation effect of entrepreneurial experience. The regression of the main analysis and most regressions of the robustness check provided support for the hypothesis ($b > 0$, $p < 0.05$). However, the robustness check using log entrepreneurial experience does reveal consistent results. Thus, I find partial support for hypothesis 4a.

Following hypothesis 4b, I expect that under lower entrepreneurial experience, the relationship between entrepreneurs' trust in the team and entrepreneurs' perceived goal progress will be stronger compared to higher entrepreneurial experience. This means a negative moderation effect of entrepreneurial experience. The regression of the main analysis and some of the regressions of the robustness check provided support for the hypothesis ($b < 0$, $p < 0.05$). However, the robustness checks using founding experience, log entrepreneurial experience, and the full model adding entrepreneurial self-efficacy do not provide support. Hence, I find partial support for hypothesis 4b.

5 Discussion

The results of this thesis suggest that entrepreneurs' motivation is directly and positively affected by entrepreneurs' opportunity beliefs and team beliefs (hypotheses 1a and 1b). Yet, to what extent these beliefs translate into motivation depends on entrepreneurs' expectancies. More so, entrepreneurs' expectancies moderate the effect of opportunity beliefs and team beliefs in divergent ways. Further, the moderation appears to be contingent on the subject of the entrepreneurs' expectancy, i.e., the venture, team or entrepreneurs themselves. Thus, the interplay of entrepreneurs' instrumentality and expectancy beliefs represents a complex pattern. Specifically for opportunity beliefs, results show a tendency that the better entrepreneurs can predict the task effort—task completion link for the venture, the less they tend to be motivated by the opportunity (hypothesis 2a; not supported at conventional levels of significance, yet tendency found). This would mean the better entrepreneurs can predict what to do next, the less they are motivated by an opportunity that they consider to be more promising. On the contrary, the better entrepreneurs can predict the task effort—task completion link for the team or entrepreneurs themselves (i.e., possess more shared venture experience or entrepreneurial experience), the more they are motivated by the opportunity (hypotheses 3a and 4a). Put differently, the better entrepreneurs can predict to what extent the team or they themselves can complete a task, the more entrepreneurs are motivated by a more promising opportunity.
Specifically for team beliefs, results do not indicate that the perceived task effort—task completion link of the venture affects the motivational effect of trusting the team (hypothesis 2b). However, the better entrepreneurs can predict the task effort—task completion link for the team or they themselves, the less does trusting the team motivate entrepreneurs (hypotheses 3b and 4b). This means, the team is perceived as less instrumental to realize the opportunity.

In this chapter, I will discuss how these findings contribute to research (Chapter 5.1), in particular to research on entrepreneurial motivation and cognition as well as uncertainty. Further, findings also contribute to research on shared experience and entrepreneurial experience. Hereafter, I will discuss implications for practitioners (Chapter 5.2). Nonetheless, there are limitations to this thesis which will be discussed in Chapter 5.3. Last, I will provide a conclusion to this thesis and also provide avenues for future research (Chapter 5.4).

5.1 Theoretical contributions

As outlined in the introduction, this thesis primarily addresses gaps in research concerning entrepreneurial motivation and cognition as well as uncertainty. However, findings also have important implication for research on shared experience and entrepreneurial experience. This stems from the description of uncertainty as a form of unknowingness (Townsend et al., 2018) in this thesis, which suggests that the accumulation of experience affects expectancies and, thus, uncertainty. In the following, each stream of literature will be described separately.

5.1.1 Contributions to research on entrepreneurial motivation and cognition

This thesis holds important implications for literature on entrepreneurial motivation and cognition, namely: (i) highlighting the importance of the interplay of instrumentality and expectancy beliefs, (ii) showing how for entrepreneurs' motivation both the beliefs in the opportunity and in the team matter, (iii) further showing that expectancy beliefs shape the effect of opportunity and team beliefs on entrepreneurs' motivation in complex and divergent ways, (iv) illustrating that expectancy beliefs do not consistently affect the motivational effect of instrumentality beliefs, and (v) answering calls for more research on entrepreneurial motivation and cognition. Each contribution is described in more detail below.

First, this thesis contributes to the literature on entrepreneurial motivation and cognition (Grégoire et al., 2010a; McMullen & Shepherd, 2006) in providing a more nuanced understanding of the interplay of instrumentality and expectancy beliefs. This insight extends prior studies on entrepreneurial beliefs (Dimov, 2010; Edelman & Yli-Renko, 2010; Laffineur et al., 2019, forthcoming; Vilanova & Vitanova, 2020) indicating that the motivational effects of entrepreneurs' instrumentality beliefs are contingent on entrepreneurs' expectancy beliefs, that is, entrepreneurs' perception of the task effort—task completion link. Thus, it adds to the ongoing discussion whether expectancy and instrumentality beliefs are multiplicative or additive in affecting entrepreneurs' motivation (Harrell & Stahl, 1984; Kanfer et al., 2017; Klein, 1991; van Eerde & Thierry, 1996). Indeed, my results suggest that the effect is multiplicative in nature[26]. This finding stands contrary to the analyses of van Eerde and Thierry (1996) or Heneman and Schwab (1972) who do not find support that a model including

[26] The comparison of models 2, which comprises all moderators, but no interaction terms, and model 6, the full model, as presented in Table 26 shows that model 6 significantly increases variance explained (F (6, 243) = 4.182, $p < 0.01$).

interaction terms is significantly better in explaining motivation than a model without interaction terms, i.e., only comprising direct effects. Similarly, in examining the motivational effect of budgets on manager's effort decision, Harrell and Stahl (1984) find that only for 23% of participants a multiplicative model was significantly better than an additive model in explaining their decisions. Also, in understanding the likelihood to start a venture relying on data collected in the PSED, Townsend et al. (2010) does not find support for an interaction of outcome and ability expectancies. This contrast might stem from the context and perceived valence in these studies. For instance, the meta-analyses of van Eerde and Thierry (1996) or Heneman and Schwab (1972) build upon studies examining blue and white-collar workers as well as students for whom the outcome, e.g., pay, might not be as relevant as the progression of the venture to entrepreneurs, who are usually not only heavily invested in the venture[27] but also define their identity based on acting as entrepreneurs (Clarke & Holt, 2017; Farmer et al., 2011; Murnieks, Cardon, & Haynie, 2020a) making the venture central to entrepreneurs. Also, Townsend et al.'s (2010) study focuses on people pondering whether to start a business or not suggesting that the importance of the outcome, that is, acting entrepreneurial, is yet unclear to the decision maker. However, outcome importance is relevant as in its absence expectancy theory cannot not explain motivation (Hüffmeier et al., 2017).

Second, this thesis contributes to literature on entrepreneurial motivation and cognition in showing that both opportunity and team beliefs are important for entrepreneurs' motivation. Previous studies on entrepreneurial motivation mostly describe it as the result of entrepreneurs' confidence in the opportunity and/ or personal capabilities (see Dimov, 2010; Dubard Barbosa et al., 2019; Edelman & Yli-Renko, 2010; Gatewood et al., 2002; Laffineur et al., 2019, forthcoming; McMullen & Shepherd, 2006; Renko et al., 2012; Vilanova & Vitanova, 2020) suggesting an entrepreneurial career is pursued by the solo entrepreneur. However, not only do academics agree that entrepreneurship is rather a social activity (Dimov, 2007; Klotz et al., 2014; Ruef et al., 2003), but also find evidence that the team matters for venturing (Breugst et al., 2020, forthcoming; Breugst & Shepherd, 2017; Saud Khan et al., 2014; Schjoedt et al., 2009; Talaulicar et al., 2005; Zheng, 2012). This thesis, thus, contributes to literature on entrepreneurial motivation and cognition in examining and showing that both opportunity and team beliefs are indeed important for entrepreneurs' motivation.

[27] For instance, in their study on return of entrepreneurial investments in the USA, Moskowitz and Vissing-Jørgensen (2002) note that "households with entrepreneurial equity invest on average more than 70 percent of their private holdings in a single private company in which they have an active management interest" (p. 745).

Further, the importance of the team or trust in the team is further shaped by entrepreneurs' perception of uncertainty. Namely, the more uncertainty entrepreneurs face stemming from the team or individual, the more does trust matter for entrepreneurs' motivation. This finding suggests that in the early stage of a new venture, trust is vital for further venturing efforts to occur. This insight extends results of previous research stressing team's relevance under uncertainty, e.g., for new product development (Akgün et al., 2005), managing (negative) feedback (Hoever et al., 2018), and withstanding stress (Burtscher et al., 2018).

Third, this thesis shows that expectancy beliefs affect entrepreneurs' motivation stemming from the opportunity and team in complex and divergent ways. As entrepreneurs act under uncertainty (McMullen & Shepherd, 2006), considering entrepreneurs' expectancy belief is important. Results suggest that entrepreneurs' expectancy beliefs foster entrepreneurs' motivation stemming from the opportunity as they help entrepreneurs predict the task effort—task completion link. Hence, expectancy beliefs help entrepreneurs judge how much effort is required to realize the opportunity. This finding is in line with other studies on opportunity beliefs suggesting that increasing expectancy beliefs are beneficial to entrepreneurs' motivation (Campbell, 1992; Dimov, 2010; Edelman & Yli-Renko, 2010; Laffineur et al., 2019, forthcoming; Townsend et al., 2010).

At the same time, my results suggest that entrepreneurs' expectancy beliefs impede entrepreneurs' motivation stemming from the team. I have theorized that the reason is the entrepreneurs' dependency on team members to realize the venture. The better entrepreneurs can form expectancy beliefs, the less are they dependent on the team in forming these beliefs. This insight is novel as expectancy beliefs are commonly depicted as a factor bolstering motivation (Heneman & Schwab, 1972; Kanfer et al., 2017; van Eerde & Thierry, 1996).

Combining the effect of expectancy beliefs on opportunity and team beliefs suggests that with entrepreneurs' increasing ability to form precise expectancy beliefs, entrepreneurs' motivation is increasingly dependent on the opportunity and decreasingly on the team. This suggests that perception and attention to information cues might change with expectancy beliefs. Put differently, with increasing expectancy beliefs entrepreneurs likely put more attention on and react more strongly to information relating to the opportunity than to information concerning the team. This might also relate to entrepreneurs' ability to process information as judging an opportunity might be more difficult than judging people as individuals grow up with the need to orientate in a social context (Adolphs, 2003; Bandura & Walters, 1977). In line, evidence shows that entrepreneurs with increasing experience, or expectancy beliefs, build richer mental

models enabling them to absorb and judge more information relevant for opportunity judgement (Grégoire et al., 2010a). It would be interesting to explore in future research in more detail how entrepreneurs judge their opportunity and their team to even better understand the complex role of opportunity and team beliefs in entrepreneurial motivation.

Fourth, results show that even for one specific instrumentality belief, that is, opportunity beliefs or team beliefs, expectancy beliefs do not consistently moderate the motivational effect indicating the complexity of the instrumentality—expectancy nexus. Whereas expectancy beliefs formed regarding the team or individual provide significant results for opportunity and team beliefs, expectancy beliefs formed concerning the venture do not significantly affect the motivational effect of opportunity and team beliefs. Potential theoretical reasons for the absence of results are provided below for opportunity beliefs and team beliefs, respectively.

With regard to opportunity beliefs, results even provide a tendency for an opposite effect of expectancy beliefs such that more precise predictions of the task effort—task completion link reduce the motivational effect of opportunity beliefs. This finding stands contrary to studies suggesting that increasing expectancy beliefs in form of reduced uncertainty or increasing feasibility beliefs bolsters motivation (Beuk et al., 2014; Campbell, 1992; Shepherd & Krueger, 2002; Townsend et al., 2010).
One potential explanation for this finding is that venture uncertainty could be an indicator for potential profit (Townsend et al., 2018). In this sense, the more venture uncertainty is present, the larger the potential profit or potential venture success. This means, the less entrepreneurs can predict the task effort—task completion link, the more they are motivated to explore the venture's path or engage in creating it. This further follows an Austrian Approach (Kirzner, 1997) in that entrepreneurs exploit uncertainty to affect the market and collect an entrepreneurial rent for bearing uncertainty. Following this idea, expectancy beliefs are a compound product of the promoting effect of profit potential and inhibiting effect of the inability to predict the task effort—task completion link. Future studies might want to pick up on this point and include additional factors capturing the profit potential of the opportunity to disentangle the compound effect. One such factor could be the degree of novelty of the opportunity. Low levels of novelty could refer to opportunities in established markets, for instance, a venture focused on providing marketing advice, whereas high levels of novelty could refer to opportunities creating new markets or demand, for instance, the app store launched by Apple in 2008. In this case, the degree of novelty could capture the uncertainty about profit

potential with higher novelty representing higher level of uncertainty. Importantly, degree of novelty does not capture expected profits as profit beliefs are part of the opportunity belief in suggesting the opportunity to be worthwhile. It would rather comprise the notion of unknowingness of market viability. This line of thought might be particularly promising for future research as Wood and Pearson (2009) use a similar explanation why they find entrepreneurs to be more likely to invest into an opportunity the more uncertainty they face, which is also to their surprise and against their theorizing of uncertainty reducing motivation as entrepreneurs are wary whether their actions are possible, whether they know what to do, and whether future profits are worth the potential costs. Similarly, yet relating to the firm level, Miles et al. (2000) find small firms relying on entrepreneurial strategies compared to conservative strategies to perform better under high level of uncertainty.

Another potential explanation might lie in the effort expectation related to the venture which is captured by the expectancy belief. The better entrepreneurs can predict the task effort—task completion link of the venture, the better they can predict the future effort required to realize the opportunity and avoid effort which is not beneficial in realizing the opportunity. This means entrepreneurs expect to invest less effort for the same outcome, that is, the realization of the opportunity. Such reduced effort expectations have been linked to decreasing level of motivation (Kappes & Oettingen, 2011). Yet, this reasoning could not explain the findings of the positive interactions effects for expectancy beliefs formed concerning the team and the individual.

With regard to team beliefs, findings do not provide support for a team belief—venture uncertainty interaction. The reason for this lack of support might relate to the nature of the opportunity and the behavior required in this situation, i.e., whether it requires explorative or exploitative behavior. In case of an opportunity requiring explorative behavior, entrepreneurs might need to rely on different skills and perspectives provided by team members to successfully exploit the opportunity. In case of an opportunity requiring exploitative behavior, entrepreneurs might need to advance the venture as quickly as possible which means delegation of tasks would be faster than coordination with team members. While only relating to the firm level, this line of thought finds support in the work of Molina-Castillo et al. (2011) who find firms relying on an exploitation strategy for the introduction of a new product to indeed have a shorter times to market than firms using an exploration strategy which suggests exploitation enables entrepreneurs to advance more quickly. Thus, future studies might explore to what

extent entrepreneurs' perception of the opportunity either requiring explorative or exploitative behavior affects the venture uncertainty—trust interaction.

The absence of a significant interaction between instrumentality beliefs and venture expectancy beliefs provides a boundary condition of expectancy theory. Whereas Dachler and Mobley (1973) as well as Sawyer (1990) suggest that expectancy theory should not be applicable in an entrepreneurial context as it involves trial and error behavior in an unpredictable environment making it impossible for entrepreneurs to form expectancy beliefs, the results suggest that this is only true for expectancy beliefs formed concerning the venture, but not for expectancy beliefs formed regarding the team or individual. Yet, advancing research and separating the compound or interaction effect of venture expectancy beliefs as stated above could more precisely illuminate boundary conditions of expectancy theory.

Fifth, this thesis answers calls for research on entrepreneurial motivation and cognition (Hisrich et al., 2007; Murnieks et al., 2020b; Shepherd, 2015). Results advance our understanding of the complex pattern describing entrepreneurs' motivation, which is an interplay of opportunity and team beliefs as well as expectancies formed concerning the venture, team, and individual. Importantly, results show that the effect on entrepreneurs' motivation depends on the specific belief and expectancy interaction and that this effect is not consistent across all expectancies. The absence of significant results for the belief—venture expectancy suggests that this particular interplay is even more complex and contingent on factors not covered in this thesis.

5.1.2 Contributions to research on uncertainty

With this thesis, I contribute to the vast body of literature on uncertainty describing uncertainty as an unknowingness and, more precisely, as a knowledge problem (Townsend et al., 2018). Specifically, the thesis addresses calls to advance our understanding of uncertainty (McKelvie et al., 2011; Packard et al., 2017; Townsend et al., 2018). Contributions comprise (i) the understanding of conditions under which uncertainty is a promoter or inhibitor of entrepreneurs' motivation, (ii) distinction of uncertainty stemming from the venture, team, and individual, (iii) highlighting the complex pattern arising from venture uncertainty and the opportunity, and (iv) informing other areas of entrepreneurial research related to uncertainty, e.g., research related to stress processing. Again, each contribution is described in more detail below.

First, results contribute to literature on uncertainty suggesting that uncertainty is impeding and promoting at the same time and, thus, address calls to understand conditions leading to such effects (McKelvie et al., 2011). While uncertainty impedes the motivational effect of opportunity beliefs it promotes the motivational effect of team beliefs, i.e., trust in the team. This suggests that embracing uncertainty can be positive for entrepreneurs. This finding is important as most research perceives uncertainty as a threat entrepreneurs seeks to reduce (Dimov, 2010; Heavey, Simsek, Roche, & Kelly, 2009; McMullen & Shepherd, 2006; Vilanova & Vitanova, 2020; Wood & Pearson, 2009), with some notable exceptions, such as, its inhibiting effect on relationship conflict consequences for entrepreneurs' affect (Breugst & Shepherd, 2017) or the theoretical work of Griffin and Grote (2020, forthcoming) who suggest entrepreneurs engage in uncertainty regulation behavior and, thereby, embrace uncertainty to create opportunities.

Importantly, uncertainty in this thesis is framed as a perceived entity. This leaves room to the question whether and how entrepreneurs can affect perceived uncertainty, i.e., does entrepreneurs' behavior affect perceived uncertainty. Following uncertainty regulation theory (Griffin & Grote, 2020, forthcoming), entrepreneurs' behavior affects perceived uncertainty which enables potential explanations expectancy theory cannot provide. Potential applicability will be discussed below.

Second, this thesis contributes to literature on uncertainty in differentiating uncertainty as a knowledge problem concerning the venture, team, and individual. Most research in entrepreneurship focuses on the environment, venture, and individual (Townsend et al., 2018) and, thus, neglects uncertainty stemming from the team. Yet, uncertainty stemming from the team should not be neglected as the team is relevant to entrepreneurs in realizing the opportunity (Klotz et al., 2014; Ruef et al., 2003). Specifically, I find that uncertainty stemming from the team impedes the motivational effect of higher opportunity beliefs, yet promotes the motivational effect of higher trust in the team. This means that in absence of a history of reliable interactions with the team, i.e., absence of shared venture experience, team's predictability is assessed using trust. Similarly, this thesis adds to the scarce literature in entrepreneurship picturing uncertainty as stemming from an individual-level (see Townsend et al., 2018) illustrating that indeed the individual is a source of uncertainty.

Moreover, my results show that uncertainties stemming from different sources have different effects on entrepreneurs' motivation suggesting that entrepreneurs' processing of uncertainty is not unilinear but rather dependent on context. This insight extends work on uncertainty relevant

in entrepreneurship research, e.g., on decision-making (McMullen & Shepherd, 2006), but also theories relating to management or psychology in general explaining, e.g., on creativity (Mueller, Melwani, & Goncalo, 2012) or on communication (Berger & Calabrese, 1974), which all assume uncertainty to be an inhibiting factor.

Third, while I have theorized that uncertainty stemming from the venture promotes the motivational effect of the opportunity, this relationship was not significant. However, future research could study this contingency in more detail to better understand the role of venture-level uncertainty as one important form of uncertainty entrepreneurs face along their journey (Wood & Pearson, 2009).

This finding also informs the causation and effectuation literature (Sarasvathy, 2001). Packard et al. (2017) suggest that entrepreneurs' perceived set of options in responding to uncertainty will influence the choice of either applying causation or effectuation. In particular, Packard et al. articulate that inexperienced entrepreneurs tend to use causation. Thus, entrepreneurs' choice of causation or effectuation might affect the venture uncertainty—opportunity belief effect on entrepreneurs' motivation. Taking these insights together, future research could explore a potential three-way interaction of entrepreneurial experience, venture-level uncertainty, and opportunity beliefs.

Another promising approach to resolve this puzzling result is the theory of uncertainty regulation which has been recently introduced by Griffin and Grote (2020, forthcoming). They suggest that entrepreneurs' uncertainty appraisals affect their choice of engaging in opening behavior, i.e., explorative behavior focusing on new knowledge and divergent approaches, or closing behavior, i.e., exploitative behavior focusing on existing knowledge and convergence approaches. They propose that opening behavior can increase uncertainty widening the set of opportunities to the entrepreneur. As such, uncertainty has a liberating effect in creating space for profit opportunities. Vice-versa, if entrepreneurs seek to employ existing knowledge, they aim at reducing uncertainty. This suggests that entrepreneurs' perception of the opportunity either requiring explorative or exploitative behavior affects entrepreneurs' uncertainty appraisal and subsequent effect of uncertainty on entrepreneurs' motivation. Future studies could analyze to what extent entrepreneurs' perception or decision for explorative and exploitative behavior represent an important contingency for entrepreneurs' uncertainty perception.

Fourth, results inform other areas of research related to uncertainty processing, for instance, research relating to entrepreneurial stress (Rauch et al., 2018). Following literature on dealing

with stress, uncertainty is a source of stress to the individual (Debus, Probst, König, & Kleinmann, 2012; Garst, Frese, & Molenaar, 2000; Rafferty & Griffin, 2006). In contrast to research on decision-making, stress has been shown to have both positive and negative effects for the individual. For instance, exposure to stress has been positively related to entrepreneurs' income, yet negatively to entrepreneurs' health (Cardon & Patel, 2015). Also, constant exposure to challenge stressors, e.g., high workload or complexity which provide opportunities for success, has been shown to be beneficial for performance (Rosen et al., 2020, forthcoming). This effect is, at least partly, driven by individuals' tendency to employ promotion-focused coping strategies, i.e., efforts to maximize chances to achieve the aspiration level, rather than prevention-focused coping strategies, i.e., efforts to minimize the chance of not fulfilling duties, which helps the individual in positively dealing with stress and, thus, improves individuals' performance and well-being (Zhang, Zhang, Ng, & Lam, 2019). Notably, this mechanism of individuals' regulation behavior making stress either a positive or negative contributor to individuals' well-being and performance is quite parallel to the uncertainty regulation mechanism proposed by Griffin and Grote (2020, forthcoming). Applying this to the finding that venture-level uncertainty might positively affects the motivational effect of opportunity beliefs entails two possible implications. For one, this suggests that entrepreneurs' regulative behavior, i.e., be it exploitative or explorative, might affect entrepreneurs' stress perception. For another, this could mean that venture-level uncertainty is a positive source of stress to entrepreneurs depending on their regulative behavior. This path could be fruitful for future research as Rauch et al. (2018) not only highlight uncertainty as a kernel of stress and entrepreneurial processing theories, but also call for theory in entrepreneurship explaining both at once.

5.1.3 Contributions to research on shared experience

With this thesis, I contribute to research on shared experience. In particular, my theorizing and results reveal that (i) a lack of shared experience can be described as a type of uncertainty and that (ii) shared experience can have negative effects for entrepreneurs' motivation. Each contribution will be discussed in more detail below.

First, my theorizing suggests that a lack of shared experience can be understood as a type of uncertainty. Most commonly, shared experience is described as an emergent state affecting how information in the team is exchanged (Huckman, Staats, & Upton, 2009; Kor, 2003), stored

(Rico et al., 2008; Zheng, 2012) and processed (Beckman, 2006; Sieweke & Zhao, 2015). This pictures shared experience is a factor enabling team-level cognition (Zheng, 2012). However, describing shared experience as a factor reducing team-level uncertainty provides a new angle of perspective. This means a lack of shared experience can be a hindrance factor in realizing the opportunity (as this lack increases uncertainty at the team level), but also affect entrepreneurs' dependency on believing in the team. I thereby contribute to research on shared experience in offering a new approach to describe shared experience and its effect for entrepreneurs.

Second, findings suggest that shared venture experience can have negative effects for entrepreneurs' motivation, i.e., findings show that shared venture experience negatively moderates the motivation stemming from the team. This is surprising as shared experience has been repeatedly shown to promote important outcomes, such as, team effectiveness (Gabelica, van den Bossche, Fiore, Segers, & Gijselaers, 2016; Sieweke & Zhao, 2015), new venture sales and survival (Delmar & Shane, 2006) or new venture growth (Zheng, 2012). The ubiquitous position assuming shared experience to always be beneficial has already been challenged by Zheng et al. (2016) who suggest that experience is only beneficial up to a specific point. The finding, thus, adds to this doubt and introduces a negative effect of shared experience. Results suggest that shared experience leads to a substitution of trust as the primary proxy for expected team members' behavior by experience. This poses the question whether shared experience goes in hand with the establishment of procedures and routines, which detaches the venture from the group of individuals creating it. Hence, prosperity of the venture might be primarily driven by the prospect of the opportunity rather than the dependency of the team. This idea of trust's influence being dependent on the development stage of the venture has also been underlined by the work of Höhmann and Welter (2005) who argue trust to be more important in the initiation stage of the venture rather than during venture expansion. Future research might pick up this thought in analyzing whether the diminishing relevance of trust for entrepreneurs' motivation relates to the establishment of procedure in the team.

5.1.4 Contributions to research on entrepreneurial experience

The theorizing and results of this thesis also hold implications for literature on entrepreneurial experience. They show that (i) a lack of entrepreneurial experience can be understood as a type of uncertainty and that (ii) entrepreneurial experience can have negative implications for

entrepreneurs. Also, this thesis (iii) addresses a call for more research on entrepreneurs' experience. Each contribution is described in more detail below.

First, my theorizing suggests that a lack of entrepreneurial experience can be understood as a type of uncertainty. I thereby add to the scarce literature illustrating the individual and its limits in experience as a source of uncertainty (Freel, 2005; Hoang & Gimeno, 2010). More commonly, entrepreneurial experience is pictured from a human capital perspective in entrepreneurship (e.g., Farmer et al., 2011; Gottschalk et al., 2017; Politis, 2005). However, the perception of a lack of entrepreneurial experience as an uncertainty offers a different mechanisms how entrepreneurial experience affects entrepreneurs' cognition and motivation. While understanding entrepreneurial experience from a human capital perspective focuses on how entrepreneurial experience affects entrepreneurs' cognitive abilities (e.g., Corbett, 2005; Toft-Kehler et al., 2014; Uy et al., 2013), understanding entrepreneurial experience from an uncertainty perspective describes it as a hindrance factor in realizing the opportunity, which also affects entrepreneurs' dependability on others.

Second, findings suggest that entrepreneurial experience can have negative effects for entrepreneurs, i.e., findings show that entrepreneurial experience negatively moderates the motivation stemming from the team. This is novel as entrepreneurial experience is commonly depicted as only providing benefits to entrepreneurs, e.g., for opportunity recognition (Corbett, 2005), withstanding adverse conditions (Uy et al., 2013), for firm innovativeness (Danneels & Vestal, 2020) or effective management of multiple activities in a venture (Laffineur et al., 2019, forthcoming). However, there are some exceptions. For instance, Toft-Kehler et al. (2014) find entrepreneurs to require substantial experience in order to effectively apply knowledge as some experience might bring the illusion of knowingness leading to erroneous application of knowledge. Also, Ucbasaran et al. (2009) find entrepreneurs to identify fewer opportunities the more they experienced failures in the past, and Holcomb et al. (2009) find that experience can lead to the formation of biases for entrepreneurs. Further, Kollmann et al. (2019) find experienced entrepreneurs to be more likely to experience insomnia. In showing that entrepreneurial experience inhibits the motivational effect of the team, I contribute to this stream in indicating a negative effect of entrepreneurial experience. Similarly, this informs research on nascent entrepreneurs and entrepreneurial education stretching that in the early stage of acting entrepreneurial (i.e., when entrepreneurs possess low level of entrepreneurial experience), the team is crucial to entrepreneurs' motivation.

Third, with this thesis I address the call by Grégoire et al. (2011) for more research on entrepreneurial experience and its relationship to cognition. The authors highlight a lack of research addressing the question to what extent entrepreneurs' cognition is shaped by innate capabilities compared to events experienced. While this thesis does not provide a direct comparison of innate capabilities compared to events experienced, findings indicate that entrepreneurs' cognition is indeed affected by entrepreneurial experience.

5.2 Practical contributions

Beyond theoretical contributions, this work also informs practitioners, i.e., (i) entrepreneurs, (ii) professionals supporting new ventures (e.g., educators and program managers), (iii) investors, and (iv) professionals outside the entrepreneurial environment. Implications for each group are presented below.

Starting with entrepreneurs, this thesis helps them understand the drivers of their motivation and how uncertainties faced from multiple dimensions at the individual, team, and venture level affect it.

First, findings show that both the opportunity and team are important for entrepreneurs' motivation. This means they not only need to be convinced an opportunity is worthwhile (first-person opportunity, see McMullen & Shepherd, 2006), but also that the team is trustworthy. Thus, partnering with the suitable set of entrepreneurs is paramount to entrepreneurs. In order words, entrepreneurship is not only about finding the 'one million dollar' idea (vom Holtz, 2017, p. 11) but also finding the people making the idea worth pursuing.

Second, as entrepreneurs commonly act under uncertainty (McMullen & Shepherd, 2006), the more uncertainty they face, the more should they put close attention to selecting a team they trust. Or vice-versa, the more certain they feel, the more likely is the opportunity to matter to them.

Third, findings show that entrepreneurial experience can foster motivation. For individuals with founding intentions, who might not feel ready to start venturing, this means they should gather entrepreneurial experience, e.g., by participating in entrepreneurship classes.

The findings are also important for professional supporting new ventures, such as, educators or program managers. Specifically, this thesis underlines the importance of entrepreneurial education as it can contribute to entrepreneurs' experience and, thus, strengthen the

motivational effect of an opportunity. This also stretches the importance of support programs like incubators in bringing together people and providing entrepreneurial experience (Vedovello & Godinho, 2003), such that entrepreneurs can focus attention on product development (McAdam & Marlow, 2007).

For investors, the findings are also important as they suggest that indeed focusing on both the set of individuals exploiting the opportunity and the opportunity are relevant selection criteria (Corbett, 2005). Also, investors might be a fruitful source for entrepreneurial experience the team might be lacking (Baum & Silverman, 2004) or a network partner to find additional team members. Further, while shared experience (Hoenig & Henkel, 2015; Schjoedt & Kraus, 2009) and entrepreneurial experience (Hsu, 2007; Wright, Robbie, & Ennew, 1997; Zacharakis & Meyer, 2000) are already common selection criteria for investors, findings suggest that investors should also pay close attention to entrepreneurs' trust in the team in particular when shared experience and entrepreneurial experience are relatively low.

Last, findings also hold implications for professionals outside the classical entrepreneurial environment. In particular, the education of entrepreneurial experience should be fruitful to foster corporate entrepreneurship as established organizations hold employees with high level of shared experience (Rentsch, Heffner, & Duffy, 1994; Sieweke & Zhao, 2015), who might lack entrepreneurial experience, which can prevent them from engaging in entrepreneurial action. Thus, teaching entrepreneurial skills and methods might reduce the individual-level uncertainty that employees face and, in turn, might lead to more entrepreneurial action in established organizations.

5.3 Limitations

While the design and analysis has been carefully planned and executed, the findings in this thesis are not without limitations. The limitations affect the strength and generalizability of the results, yet they offer potential for future research. In the following, I highlight limitations concerning (i) the cross-sectional nature of data, (ii) potential selection bias, (iii) the use of self-reported data, (iv) the validity of scales applied, (v) the modeling of uncertainty, and (vi) limited generalizability.

First, researchers argue that expectancy theory as a within-subject theory cannot be analyzed using a between-subject analysis, i.e., requires the use of a longitudinal data set (Klein, 1991; Wanous et al., 1983). Further, longitudinal data might help detect potential reverse causality or lagged effects, for instance, effort affecting entrepreneurs' beliefs. In this vein, Gielnik et al. (2015) could show that effort precedes passion rather than effort being the result of passion, which suggests that effort might also affect entrepreneurs' beliefs. Yet, the extent to which beliefs change over time appears limited. In a study examining 700 nascent entrepreneurs, Parker (2006) parker notes that when exposed to new information concerning their venture, only 16% of entrepreneurs change their beliefs. Little or no changes in beliefs will make studies employing a longitudinal data set challenging.

Second, even though the test for selection bias in Chapter 3.4.1 was negative, selection bias cannot be ruled out entirely. For instance, highly successful entrepreneurs might have declined to participate as incentives provided were insufficient to capture their attention. Also, the progression of the venture might require time to an extent making it impossible for highly successful entrepreneurs to participate. Further, unsuccessful entrepreneurs might have not participated as they potentially failed early on their entrepreneurial journey. Yet, as we pre-tested for relevant incentives, engaged in a systematic sampling methodology, and tests did not indicate a selection bias, I argue selection bias to be a minor concern.

Third, the application of self-reported can be challenged. While the application of self-reported measures is common in social sciences, its application is controversially discussed (Chan, 2009; Schoorman & Mayer, 2008). In the following, I will highlight some of the challenges. For instance, authors criticize self-reported data to give rise to social desirability bias (Tomassetti, Dalal, & Kaplan, 2016). This means, individuals do not provide their own opinion, but what they perceive to be a socially acceptable answer (Edwards, 1957), which affects the reporting and, thus, biases subsequent analyses (Zerbe & Paulhus, 1987). Self-reported data also gives raise to potential common method bias (Podsakoff et al., 2003) given all variables are collected from the same individual. Consequently, correlations of variables might not be related to 'true' correlation, but to the individual assessing multiple constructs, which again biases regression estimates (Siemsen et al., 2010). Further, perceptions may differ from the 'true' or objective reality which has been raised as a concern for, e.g., uncertainty (Packard et al., 2017) or goal progress (Wanberg, Zhu, & van Hooft, 2010).

While these limitations indeed are challenges, there are not only countermeasure to them but also reasons for using self-reported data. Potential social desirability biases have been addressed in ensuring confidentiality to participants (Woods & McNamara, 1980). Also, the concern for common method bias could be mitigated based on the test for such a bias as described in Chapter 3.4.1. Further, the use self-reported data is reasonable given the difficulty obtaining objective measure for outcomes, such as, output, revenue or profitability as there are potentially non-existing (Davidsson & Gordon, 2009). Other measures, such as, time between gestation activities can vary between months to years making it difficult to observe (Davidsson & Gordon, 2009). Last, the use of perceptional data to examine decision-making is appropriate. For one, while Packard et al. (2017) call for research on true uncertainty, they acknowledge entrepreneurs' decision-making is based on their perception. For another, in their review on expectancy theory, van Eerde and Thierry (1996) also suggest that "perhaps self-reports are most closely related to [motivational] force" (p. 577) providing further ground for the application of self-reported data.

Yet, there is some critique which offers an additional avenue for research. In their review on entrepreneurial cognition, Grégoire et al. (2011) call for cognitive research providing a process orientation. However, process studies require the use qualitative methods (Madill & Gough, 2008), such as, interviews (Gemmell, Boland, & Kolb, 2012) or verbal protocols (Dahl & Moreau, 2002) requiring participants to "think out loud" (Harrison, McLaughlin, & Coalter, 1996, p. 249) while participating. Future research might employ such methods to provide a more nuanced understanding of how entrepreneurs processes instrumentality and expectancy beliefs.

Similarly, scholars may argue that questions on past events, for instance, items on perceived goal progress of the past three months, are subject to recall bias (Kraiger & Aguinis, 2013; Metts, Sprecher, Cupach, Montgomery, & Duck, 1991; Robinson & Clore, 2002). A potential remedy of this concern is to rely on questioning momentary experiences (Uy et al., 2010) which could provide a promising approach for future research, yet will be challenging as beliefs rather change slowly (Parker, 2006) making the analysis of in-person differences difficult.

Also, future research may address the gap between true and subjective measures in employing objective measures, such as, actual goal progress instead of perceived goal progress. In their research on perceived progress, Wanberg et al. (2010) raise the issue that participants' progress response might be affected by participants' momentary affect as, for instance, participants experiencing negative affect may respond lower perceived goal progress compared to a situation when they experience less negative affect. Thus, future research might examine to

what extent the proposed model also explains actual goal progress to omit potential influences by momentary affect.

Fourth, some scholars might raise concern regarding the validity of scales applied, in particular, to what extent answers are meaningful. Scholars argue that responses and variables analyzed in general in entrepreneurship follow power law distributions (Crawford, Aguinis, Lichtenstein, Davidsson, & McKelvey, 2015) and data used in this thesis supports this statement as variables, such as, entrepreneurial or founding experienced are highly skewed (see Figure 9), and key variables, such as, opportunity beliefs or trust show relatively high means on the 7-point Likert scale (opportunity beliefs: mean = 6.00; trust: mean = 6.09). Authors suggest that this may lead to erroneous conclusion drawn from the data as means might be meaningless or curvilinear patterns remain undetected (Crawford et al., 2015; Vergauwe, Wille, Hofmans, Kaiser, & Fruyt, 2017). Yet, as neither skewed distribution affect the validity of OLS regressions (Wooldridge, 2013) nor expectancy theory predicts specific curvilinear patterns, the application of a 7-point Likert scale seems reasonable. Nonetheless, future studies might employ different scales (e.g., as proposed by Vergauwe et al., 2017) and different theories to explore potential curvilinear patterns.

Fifth, the modeling of uncertainty at the individual level might be erroneous, i.e., requires multi-level models (Aguinis, Gottfredson, & Culpepper, 2013; Kenny & La Voie, 1985). While I raised potential theoretical reasons why venture-level uncertainty does not moderate the instrumentality belief as expected, this means that the absence of support of the hypotheses could also be due to a modeling error. Future studies, thus, might focus on multi-level models to explore the instrumentality—uncertainty relations.

Last, scholars might question the generalizability of the sample, which consists of entrepreneurs active in teams in Germany only. For one, potential limitations arise for solo entrepreneurs as they do not rely on a founding team supporting the advancement of the venture. For another, implications might not hold in other countries as culture has been shown to affect the uncertainty perception and appraisal of individuals (Debus et al., 2012; Yeniyurt & Townsend, 2003). Further, applicability to the established organizations might be limited as, for instance, individuals working in project teams might not independently decide on which team members to work with (Croson, Fatas, Neugebauer, & Morales, 2015) or which opportunity to pursue (Beuk et al., 2014).

5.4 Conclusion and avenues for future research

Last, I would like to summarize the main findings of this thesis. Also, I would like to provide an outlook what avenues for future research emerge from this thesis.

In a nutshell, this thesis sheds light on entrepreneurial motivation and cognition, uncertainty, shared experience, and entrepreneurial experience. It shows that entrepreneurs' motivation stems from their belief in the opportunity as well as the team. While uncertainties stemming from the venture, team, and individual make the path towards a venture with a viable business model more opaque, it can both promote and impede entrepreneurs' motivation. Specifically, the more uncertainty entrepreneurs perceive stemming from the team or individual, the less they are motivated by the opportunity and the more they are motivated by the team. Notably, this also means entrepreneurs are decreasingly dependent on the team and increasingly dependent on the opportunity to be motivated the more shared venture experience or entrepreneurial experience they possess as shared venture experience and entrepreneurial experience reduce team- and individual-level uncertainty, respectively. Surprisingly, results reveal a tendency (though not significant at conventional level) that venture-level uncertainty promotes entrepreneurs' motivation from the opportunity. In other words, the less entrepreneurs know what to do next, the more they are motivated by a promising opportunity.

Based on its findings, this thesis also provides multiple avenues for future research. Some of these have already been described as part of the theoretical contributions or limitations, but the most promising are summarized here. Table 42 captures some of the potential avenues and respective research questions, which are further explained in the following. Similar to the theoretical contribution, research questions are clustered by their field of contribution.

Given that entrepreneurs' motivation and uncertainty are intertwined (McMullen & Shepherd, 2006), future avenues are discussed addressing both entrepreneurial motivation and uncertainty as the same time. Further, I use the findings in this thesis as a motivation for further research, which also helps structuring in the following.

First, results of this thesis do not provide support for the interaction of venture-level uncertainty with opportunity beliefs as well as team beliefs. Starting with opportunity beliefs, results even provide a tendency that uncertainty stemming from the venture might increase the motivational effect from the opportunity. As previously noted, this might relate to uncertainty as an indicator for future profit (Townsend et al., 2018; Wood & Pearson, 2009). This means uncertainty is a compound product describing profit potential (promoting motivational effects) and ability to

Field	Motivation	Research question
Entrepreneurial motivation and uncertainty	Absence of significant interaction effects of venture-level uncertainty with opportunity and team beliefs	To what extent does the degree of opportunity's novelty affect entrepreneurs' perception of uncertainty stemming from the venture?
		How does entrepreneur's appraisal of uncertainty from the venture differ from uncertainty stemming from the team or individual?
		To what extent does entrepreneurs' regulation behavior affect entrepreneurs' appraisal of uncertainty stemming from the venture?
	Positive interaction effects of team- as well as individual-level uncertainty with team beliefs	To what extent does uncertainty positivly affect other important outcomes to entrepreneurs?
		To what extent do measures increasing team-level uncertainty (e.g., addition of additional team members) positively affect entrepreneurs' motivation?
		To what extent does the development of the organization (e.g., formation of constant roles and responsibilities) negatively affect entrepreneurs' motivation?
	Beyond findings	To what extent does the development stage of the venture affect entrepreneurs' appraisal of uncertainty?
		To what extent does entrepreneurs' stress perception affect the motivation stemming from opportunity or the team?
		To what extent does entrepreneurs' passion affect entrepreneurs' perception of uncertainty stemming from the team or individual?
Shared experience	Negative interaction effect of shared venture experience with team beliefs	To what extent does the nature of entrepreneurs' shared venture experience, i.e., being pre-dominantly positive or negative, affect entrepreneurs' decision-making for new team members?
		To what extent does the nature of entrepreneurs' shared venture experience, i.e., being pre-dominantly positive or negative, affect the architecture of subsequent new ventures?
Entrepreneurial experience	Absence of significant interaction effect of venture-level uncertainty with opportunity and team beliefs	To what extent does the nature of entrepreneurs' past entrepreneurial experience, i.e., being pre-dominantly positive or negative, affect entrepreneurs' perception of venture-level uncertainty?

Table 42: Avenues for future research
Source: Own illustration

predict the task effort—task completion link (inhibiting motivational effects). To capture the profit potential, future studies might seek to analyze to what extent opportunity's novelty affects entrepreneurs' uncertainty perception. Future studies could also examine how entrepreneurs' uncertainty appraisal differs for uncertainties stemming from the venture, team, and individual to understand the qualitative nature of the differences. Another potential explanation is entrepreneurs' uncertainty regulation behavior (Griffin & Grote, 2020, forthcoming) affecting their perception of uncertainty. For instance, entrepreneurs might perceive high level of uncertainty as an opportunity to engage in explorative behavior, which further increases uncertainty, but can provide novel solutions. Entrepreneurs' perception to either engage in explorative (i.e., uncertainty increasing) or exploitative (i.e., uncertainty decreasing) behavior might also explain why results are not significant for the interaction with team beliefs. Explorative behavior suggests that trusting the team is more important as entrepreneurs require team's information processing and informal coordination support as structures and procedures are unclear (Oedzes et al., 2019). Exploitative behavior suggests that trusting the team is less important as entrepreneurs need to execute a vision which is faster in a hierarchical and clearly defined environment (Ireland & Webb, 2009). However, such a clearly set environment reduces the need for trust.

Second, the results of this thesis provide support for a positive moderation of team- and individual-level uncertainty with team beliefs on entrepreneurs' motivation. Future research could examine to what extent this also affects other important outcomes for entrepreneurs, such as, well-being (Wiklund, Nikolaev, Shir, Foo, & Bradley, 2019) or ethical behavior (Qin et al., 2020, forthcoming). Given the positive moderation of team-level uncertainty and team beliefs, the question arises how measures increasing uncertainty at the team level might benefit entrepreneurs' motivation. For instance, to what extent does the addition of team members positively affect entrepreneurs' motivation as its increasing team-level uncertainty? Vice-versa, to what extent does the development of organizational structures negatively affect entrepreneurs' motivation as its decreasing team-level uncertainty?

Third, beyond the immediate paths starting from this thesis's results, research opportunities also emerge for adjacent topics. For instance, researchers could seek to understand how entrepreneurs' uncertainty appraisal changes with the development stage of the venture (Jiang & Tornikoski, 2019). While nascent entrepreneurs in the opportunity recognition stage may see uncertainty as an opportunity for profit, experienced entrepreneurs already earning an

entrepreneurial rent may be more reluctant to perceive uncertainty as an opportunity. Given the close connection of stress and uncertainty in entrepreneurial processes (Rauch et al., 2018), future research could test to what extent entrepreneurs' stress perception or coping capabilities affect entrepreneurs' motivation stemming from the opportunity and venture utilizing stress theories to explain the potential phenomena. Last, given the importance of affect described in the theory section, future researchers could examine to what extent entrepreneurs' affect changes the way entrepreneurs perceive uncertainty.

Fourth, paths emerge for shared experience. Results show that shared venture experience weakens entrepreneurs' motivation stemming from the team. Future research could explore how the nature of entrepreneurs' shared venture experience affects future decisions. For instance, in case experiences were predominantly positive, does that affect entrepreneurs' decision making such that less scrutiny is applied to selecting the right team member? Vice-versa, one could also think of a scenario in which entrepreneurs predominantly made negative experiences, which could lead to increased scrutiny in new team member selection, for instance, in requiring new team members to have more skills or capabilities compared to previous new team member decisions. Next to the decision for new team members, researchers could also explore the effects for the architecture of new ventures. For instance, do entrepreneurs opt for larger teams or establish less hierarchical structures in case they pre-dominantly made positive experiences in venture teams?

Fifth, similar paths emerge for entrepreneurial experience. Related to the absence of a significant finding for the interaction effect of venture-level uncertainty and opportunity as well as team beliefs, future research could examine potential three-way interaction effects between venture-level uncertainty and entrepreneurial experience. For instance, to what extent does entrepreneurs' past entrepreneurial experience affect entrepreneurs perception of venture-level uncertainty? In case past ventures were successful, entrepreneurs might appreciate uncertainty as an opportunity to be even more successful. In case past venture were not successful, i.e., failed, entrepreneurs might perceive uncertainty as a threat preventing them to be successful.

Without a doubt, entrepreneurship and its intersections at motivation and cognition, uncertainty, shared experience, and entrepreneurial experience are far from being fully understood. While this thesis provides significant advancement to the field, many more interesting research questions could be explored in the future.

6 References

Adolphs, R. (2003). Cognitive neuroscience of human social behaviour. *Nature Reviews Neuroscience, 4*(3), 165–178.

Agarwal, R., Campbell, B. A., Franco, A. M., & Ganco, M. (2016). What do I take with me? The mediating effect of spin-out team size and tenure on the founder–firm performance relationship. *Academy of Management Journal, 59*(3), 1060–1087.

Aguinis, H. (1995). Statistical power with moderated multiple regression in management research. *Journal of Management, 21*(6), 1141–1158.

Aguinis, H., Gottfredson, R. K., & Culpepper, S. A. (2013). Best-practice recommendations for estimating cross-level interaction effects using multilevel modeling. *Journal of Management, 39*(6), 1490–1528.

Aiken, L. S., West, S. G., & Reno, R. R. (1991). *Multiple regression: Testing and interpreting interactions.* Thousand Oaks, CA: Sage.

Ajzen, I. (1985). From intentions to actions: A theory of planned behavior. In J. Kuhl & J. Beckmann (Eds.), *Action control* (pp. 11–39). Berlin: Springer.

Akgün, A. E., Byrne, J., Keskin, H., Lynn, G. S., & Imamoglu, S. Z. (2005). Knowledge networks in new product development projects: A transactive memory perspective. *Information & Management, 42*(8), 1105–1120.

Allen, D. G. (2006). Do organizational socialization tactics influence newcomer embeddedness and turnover? *Journal of Management, 32*(2), 237–256.

Alvarez, S. A., & Barney, J. B. (2005). How do entrepreneurs organize firms under conditions of uncertainty? *Journal of Management, 31*(5), 776–793.

Amason, A. C., Shrader, R. C., & Tompson, G. H. (2006). Newness and novelty: Relating top management team composition to new venture performance. *Journal of Business Venturing, 21*(1), 125–148.

Amit, R., & Zott, C. (2001). Value creation in e-business. *Strategic Management Journal, 22*(6-7), 493–520.

Andries, P., & Debackere, K. (2007). Adaptation and performance in new businesses: Understanding the moderating effects of independence and industry. *Small Business Economics, 29*(1-2), 81–99.

Andries, P., Debackere, K., & van Looy, B. (2013). Simultaneous experimentation as a learning strategy: Business model development under uncertainty. *Strategic Entrepreneurship Journal, 7*(4), 288–310.

Anseel, F., Beatty, A. S., Shen, W., Lievens, F., & Sackett, P. R. (2015). How are we doing after 30 years? A meta-analytic review of the antecedents and outcomes of feedback-seeking behavior. *Journal of Management, 41*(1), 318–348.

Armstrong, J. S., & Overton, T. S. (1977). Estimating nonresponse bias in mail surveys. *Journal of Marketing Research, 14*(3), 396–402.

Autio, E., Dahlander, L., & Frederiksen, L. (2013). Information exposure, opportunity evaluation, and entrepreneurial action: An investigation of an online user community. *Academy of Management Journal, 56*(5), 1348–1371.

Axinn, W. G., Link, C. F., & Groves, R. M. (2011). Responsive survey design, demographic data collection, and models of demographic behavior. *Demography, 48*(3), 1127–1149.

Bachrach, D. G., Lewis, K., Kim, Y., Patel, P. C., Campion, M. C., & Thatcher, S. M. B. (2019). Transactive memory systems in context: A meta-analytic examination of contextual factors in transactive memory systems development and team performance. *Journal of Applied Psychology, 104*(3), 464–493.

Backes-Gellner, U., & Pull, K. (2013). Tournament compensation systems, employee heterogeneity, and firm performance. *Human Resource Management, 52*(3), 375–398.

Bandura, A., & Walters, R. H. (1977). *Social learning theory* (Vol. 1). Englewood Cliffs, NJ: Prentice Hall.

Baron, R. A. (2006). Opportunity recognition as pattern recognition: How entrepreneurs “connect the dots” to identify new business opportunities. *Academy of Management Perspectives, 20*(1), 104–119.

Baron, R. A. (2007). Behavioral and cognitive factors in entrepreneurship: entrepreneurs as the active element in new venture creation. *Strategic Entrepreneurship Journal, 1*(1-2), 167–182.

Baron, R. A., & Ensley, M. D. (2006). Opportunity recognition as the detection of meaningful patterns: Evidence from comparisons of novice and experienced entrepreneurs. *Management Science, 52*(9), 1331–1344.

Baron, R. A., Franklin, R. J., & Hmieleski, K. M. (2016a). Why entrepreneurs often experience low, not high, levels of stress. *Journal of Management, 42*(3), 742–768.

Baron, R. A., Mueller, B. A., & Wolfe, M. T. (2016b). Self-efficacy and entrepreneurs' adoption of unattainable goals: The restraining effects of self-control. *Journal of Business Venturing, 31*(1), 55–71.

Baron, R. S., Vandello, J. A., & Brunsman, B. (1996). The forgotten variable in conformity research: Impact of task importance on social influence. *Journal of Personality and Social Psychology, 71*(5), 915.

Barreto, I. (2012). Solving the Entrepreneurial Puzzle: The Role of Entrepreneurial Interpretation in Opportunity Formation and Related Processes. *Journal of Management Studies, 49*(2), 356–380.

Bartholomew, S., & Smith, A. D. (2006). Improving survey response rates from chief executive officers in small firms: The importance of social networks. *Entrepreneurship Theory and Practice, 30*(1), 83–96.

Baruch, Y., & Holtom, B. C. (2008). Survey response rate levels and trends in organizational research. *Human Relations, 61*(8), 1139–1160.

Baum, J. R., Locke, E. A., & Smith, K. G. (2001). A multidimensional model of venture growth. *Academy of Management Journal, 44*(2), 292–303.

Baum, J. A.C., & Silverman, B. S. (2004). Picking winners or building them? Alliance, intellectual, and human capital as selection criteria in venture financing and performance of biotechnology startups. *Journal of Business Venturing, 19*(3), 411–436.

Becker, T. E. (2005). Potential problems in the statistical control of variables in organizational research: A qualitative analysis with recommendations. *Organizational Research Methods, 8*(3), 274–289.

Beckman, C. M. (2006). The influence of founding team company affiliations on firm behavior. *Academy of Management Journal, 49*(4), 741–758.

Bedeian, A. G., Sturman, M. C., & Streiner, D. L. (2009). Decimal Dust, Significant Digits, and the Search for Stars. *Organizational Research Methods, 12*(4), 687–694.

Bellu, R. R., & Sherman, H. (1995). Predicting firm success from task motivation and attributional style: a longitudinal study. *Entrepreneurship & Regional Development, 7*(4), 349–364.

Berger, C. R., & Calabrese, R. J. (1974). Some explorations in initial interaction and beyond: Toward a developmental theory of interpersonal communication. *Human Communication Research, 1*(2), 99–112.

Beuk, F., Malter, A. J., Spanjol, J., & Cocco, J. (2014). Financial incentives and salesperson time orientation in new product launch: A longitudinal study. *Journal of Product Innovation Management, 31*(4), 647–663.

Beus, J. M., & Taylor, W. D. (2018). Working safely at some times and unsafely at others: A typology and within-person process model of safety-related work behaviors. *Journal of Occupational Health Psychology, 23*(3), 402–416.

Bingham, C. B., & Davis, J. P. (2012). Learning sequences: Their existence, effect, and evolution. *Academy of Management Journal, 55*(3), 611–641.

Bishop, J. W., & Scott, K. D. (2000). An examination of organizational and team commitment in a self-directed team environment. *Journal of Applied Psychology, 85*(3), 439.

Blatt, R. (2009). Tough love: How communal schemas and contracting practices build relational capital in entrepreneurial teams. *Academy of Management Review, 34*(3), 533–551.

Bliese, P. D., Edwards, J. R., & Sonnentag, S. (2017). Stress and well-being at work: A century of empirical trends reflecting theoretical and societal influences. *Journal of Applied Psychology, 102*(3), 389–402.

Blunt, A. K., & Pychyl, T. A. (2000). Task aversiveness and procrastination: A multi-dimensional approach to task aversiveness across stages of personal projects. *Personality and Individual Differences, 28*(1), 153–167.

Bogatyreva, K., Edelman, L. F., Manolova, T. S., Osiyevskyy, O., & Shirokova, G. (2019). When do entrepreneurial intentions lead to actions? The role of national culture. *Journal of Business Research, 96*, 309–321.

Boudreaux, C. J., Nikolaev, B. N., & Klein, P. G. (2019). Socio-cognitive traits and entrepreneurship: The moderating role of economic institutions. *Journal of Business Venturing, 34*(1), 178–196.

Bradley, D. E., & Roberts, J. A. (2004). Self-employment and job satisfaction: Investigating the role of self-efficacy, depression, and seniority. *Journal of Small Business Management, 42*(1), 37–58.

Brandon, D. P., & Hollingshead, A. B. (2004). Transactive memory systems in organizations: Matching tasks, expertise, and people. *Organization Science, 15*(6), 633–644.

Brettel, M., Bendig, D., Keller, M., Friederichsen, N., & Rosenberg, M. (2014). Effectuation in manufacturing: how entrepreneurial decision-making techniques can be used to deal with uncertainty in manufacturing. *Procedia CIRP, 17*, 611–616.

Breugst, N., Domurath, A., Patzelt, H., & Klaukien, A. (2012). Perceptions of entrepreneurial passion and employees' commitment to entrepreneurial ventures. *Entrepreneurship Theory and Practice, 36*(1), 171–192.

Breugst, N., Patzelt, H., & Rathgeber, P. (2015). How should we divide the pie? Equity distribution and its impact on entrepreneurial teams. *Journal of Business Venturing, 30*(1), 66–94.

Breugst, N., Patzelt, H., & Shepherd, D. A. (2020, forthcoming). When is effort contagious in new venture management teams?: Understanding the contingencies of social motivation theory. *Journal of Management Studies*.

Breugst, N., & Shepherd, D. A. (2017). If you fight with me, I'll get mad! A social model of entrepreneurial affect. *Entrepreneurship Theory and Practice, 41*(3), 379–418.

Brislin, R. W. (1970). Back-translation for cross-cultural research. *Journal of Cross-Cultural Psychology, 1*(3), 185–216.

Brockhaus, R. H. (1980). Risk taking propensity of entrepreneurs. *Academy of Management Journal, 23*(3), 509–520.

Broedling, L. A. (1975). Relationship of internal-external control to work motivation and performance in an expectancy model. *Journal of Applied Psychology, 60*(1), 65–70.

Bruneel, J., Clarysse, B., & Autio, E. (2018). The role of prior domestic experience and prior shared experience in young firm internationalization. *International Small Business Journal: Researching Entrepreneurship, 36*(3), 265–284.

Brunstein, J. C. (1993). Personal goals and subjective well-being: A longitudinal study. *Journal of Personality and Social Psychology, 65*(5), 1061–1070.

Bundesverband Deutsche Startups e.V. (2018a). *Deutscher Startup Monitor 2018,* from https://deutscherstartupmonitor.de/fileadmin/dsm/dsm-18/files/Deutscher%20Startup%20Monitor%202018.pdf.

Bundesverband Deutsche Startups e.V. (2018b). *Female Founders Monitor,* from https://deutscherstartupmonitor.de/fileadmin/ffm/ffm_2018/Studie%20Female%20Founders%20Monitor%202018.pdf.

Burmeister-Lamp, K., Lévesque, M., & Schade, C. (2012). Are entrepreneurs influenced by risk attitude, regulatory focus or both? An experiment on entrepreneurs' time allocation. *Journal of Business Venturing, 27*(4), 456–476.

Burns, A. J., Roberts, T. L., Posey, C., Bennett, R. J., & Courtney, J. F. (2018). Intentions to comply versus intentions to protect: A VIE theory approach to understanding the influence of insiders' awareness of organizational SETA efforts. *Decision Sciences, 49*(6), 1187–1228.

Burtscher, M. J., Meyer, B., Jonas, K., Feese, S., & Tröster, G. (2018). A time to trust? The buffering effect of trust and its temporal variations in the context of high-reliability teams. *Journal of Organizational Behavior, 39*(9), 1099–1112.

Busenitz, L. W. (2007). Progress in understanding entrepreneurial behavior. *Strategic Entrepreneurship Journal, 1*(1-2), 183–185.

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

Cabral, S., Firpo, S., Costa, M. M. D., Monteiro, J., & Viotti, L. (2019). Keeping the dream alive: The role of expectancy in pay-for-performance programs. *Academy of Management Proceedings*, 18240.

Cacciotti, G., Hayton, J. C., Mitchell, J. R., & Giazitzoglu, A. (2016). A reconceptualization of fear of failure in entrepreneurship. *Journal of Business Venturing, 31*(3), 302–325.

Cachon, J.-C. (1990). A longitudinal investigation of entrepreneurial teams. Part one: who is involved and what makes them succeed. *Frontiers of Entrepreneurship Research*, 100–102.

Camerer, C., & Lovallo, D. (1999). Overconfidence and excess entry: An experimental approach. *American Economic Review, 89*(1), 306–318.

Campbell, C. A. (1992). A decision theory model for entrepreneurial acts. *Entrepreneurship Theory and Practice, 17*(1), 21–27.

Camuffo, A., Cordova, A., Gambardella, A., & Spina, C. (2020). A scientific approach to entrepreneurial decision making: Evidence from a randomized control trial. *Management Science, 66*(2), 564–586.

Cannon-Bowers, J. A., Converse, S., & Salas, E. (1993). Shared mental models in expert team decision making. *Individual and Group Decision Making: Current Issues, 221*, 221–246.

Caplan, R. D., & Jones, K. W. (1975). Effects of work load, role ambiguity, and type A personality on anxiety, depression, and heart rate. *Journal of Applied Psychology, 60*(6), 713–719.

Cardon, M. S., Grégoire, D. A., Stevens, C. E., & Patel, P. C. (2013). Measuring entrepreneurial passion: Conceptual foundations and scale validation. *Journal of Business Venturing, 28*(3), 373–396.

Cardon, M. S., & Kirk, C. P. (2015). Entrepreneurial passion as mediator of the self-efficacy to persistence relationship. *Entrepreneurship Theory and Practice, 39*(5), 1027–1050.

Cardon, M. S., & McGrath, R. G. (1999). When the going gets tough… Toward a psychology of entrepreneurial failure and re-motivation. *Frontiers of Entrepreneurship Research, 29*(4), 58–72.

Cardon, M. S., & Patel, P. C. (2015). Is stress worth it? Stress-related health and wealth trade-offs for entrepreneurs. *Applied Psychology, 64*(2), 379–420.

Cardon, M. S., Post, C., & Forster, W. R. (2017). Team entrepreneurial passion: Its emergence and influence in new venture teams. *Academy of Management Review, 42*(2), 283–305.

Carland, J. W., Hoy, F., Boulton, W. R., & Carland, J. A. C. (1984). Differentiating entrepreneurs from small business owners: A conceptualization. *Academy of Management Review, 9*(2), 354–359.

Carlson, K. D., & Wu, J. (2012). The illusion of statistical control. *Organizational Research Methods, 15*(3), 413–435.

Carlsson, B., Braunerhjelm, P., McKelvey, M., Olofsson, C., Persson, L., & Ylinenpää, H. (2013). The evolving domain of entrepreneurship research. *Small Business Economics, 41*(4), 913–930.

Carsrud, A., & Brännback, M. (2011). Entrepreneurial motivations: what do we still need to know? *Journal of Small Business Management, 49*(1), 9–26.

Chan, D. (2009). So why ask me? Are self-report data really that bad? In C. E. Lance & R. J. Vandenberg (Eds.), *Statistical and Methodological Myths and Urban Legends. Doctrine, Verity and Fable in the Organizational and Social Sciences* (pp. 309–336). New York: Taylor & Francis.

Chandler, G. N., DeTienne, D. R., McKelvie, A., & Mumford, T. V. (2011). Causation and effectuation processes: A validation study. *Journal of Business Venturing, 26*(3), 375–390.

Chandler, G. N., Honig, B., & Wiklund, J. (2005). Antecedents, moderators, and performance consequences of membership change in new venture teams. *Journal of Business Venturing, 20*(5), 705–725.

Chen, C. C., Greene, P. G., & Crick, A. (1998). Does entrepreneurial self-efficacy distinguish entrepreneurs from managers? *Journal of Business Venturing, 13*(4), 295–316.

Chen, H. S., Mitchell, R. K., Brigham, K. H., Howell, R., & Steinbauer, R. (2018). Perceived psychological distance, construal processes, and abstractness of entrepreneurial action. *Journal of Business Venturing, 33*(3), 296–314.

Cho, E., & Kim, S. (2015). Cronbach's coefficient alpha: Well known but poorly understood. *Organizational Research Methods, 18*(2), 207–230.

Chopra, K. (2019). Indian shopper motivation to use artificial intelligence. *International Journal of Retail & Distribution Management, 47*(3), 331–347.

Clark, D., Alvarez, S. A., & Barney, J. B. (2003). When do family ties matter? Entrepreneurial market opportunity recognition and resource acquisition in family firms. *Frontiers of Entrepreneurship Research*.

Clarke, J., & Holt, R. (2017). Imagery of ad-venture: Understanding entrepreneurial identity through metaphor and drawing. *Journal of Business Venturing, 32*(5), 476–497.

Clarysse, B., & Moray, N. (2004). A process study of entrepreneurial team formation: the case of a research-based spin-off. *Journal of Business Venturing, 19*(1), 55–79.

Cock, R. de, Denoo, L., & Clarysse, B. (2020). Surviving the emotional rollercoaster called entrepreneurship: The role of emotion regulation. *Journal of Business Venturing, 35*(2), 105936.

Cohen, J., Cohen, P., West, S. G., & Aiken, L. S. (1983). Applied multiple regression. *Correlation Analysis for the Behavioral Sciences, 2*.

Cohen, P., West, S. G., & Aiken, L. S. (2014). *Applied multiple regression/correlation analysis for the behavioral sciences.* London: Psychology Press.

Cohen, S. G., & Bailey, D. E. (1997). What makes teams work: Group effectiveness research from the shop floor to the executive suite. *Journal of Management, 23*(3), 239–290.

Collewaert, V., Anseel, F., Crommelinck, M., Beuckelaer, A. de, & Vermeire, J. (2016). When Passion Fades: Disentangling the Temporal Dynamics of Entrepreneurial Passion for Founding. *Journal of Management Studies, 53*(6), 966–995.

Conroy, S. A., & Gupta, N. (2019). Disentangling horizontal pay dispersion: Experimental evidence. *Journal of Organizational Behavior, 40*(3), 248–263.

Cooney, T. M. (2005). Editorial: What is an entrepreneurial team? *International Small Business Journal: Researching Entrepreneurship, 23*(3), 226–235.

Cooper, A. C., Gimeno-Gascon, F. J., & Woo, C. Y. (1994). Initial human and financial capital as predictors of new venture performance. *Journal of Business Venturing, 9*(5), 371–395.

Cooper, A. C., Woo, C. Y., & Dunkelberg, W. C. (1989). Entrepreneurship and the initial size of firms. *Journal of Business Venturing, 4*(5), 317–332.

Cope, J. (2011). Entrepreneurial learning from failure: An interpretative phenomenological analysis. *Journal of Business Venturing, 26*(6), 604–623.

Corbett, A. C. (2005). Experiential learning within the process of opportunity identification and exploitation. *Entrepreneurship Theory and Practice, 29*(4), 473–491.

Cortina, J. M. (1993). Interaction, nonlinearity, and multicollinearity: Implications for multiple regression. *Journal of Management, 19*(4), 915–922.

Costa, A. C., Fulmer, C. A., & Anderson, N. R. (2018). Trust in work teams: An integrative review, multilevel model, and future directions. *Journal of Organizational Behavior, 39*(2), 169–184.

Crawford, G. C., Aguinis, H., Lichtenstein, B. B., Davidsson, P., & McKelvey, B. (2015). Power law distributions in entrepreneurship: Implications for theory and research. *Journal of Business Venturing, 30*(5), 696–713.

Crawford, S. D., Couper, M. P., & Lamias, M. J. (2001). Web surveys. *Social Science Computer Review, 19*(2), 146–162.

Croson, R., Fatas, E., Neugebauer, T., & Morales, A. J. (2015). Excludability: A laboratory study on forced ranking in team production. *Journal of Economic Behavior & Organization, 114*, 13–26.

Crossan, M. M., Lane, H. W., & White, R. E. (1999). An organizational learning framework: From intuition to institution. *Academy of Management Review, 24*(3), 522–537.

Cumming, D., Werth, J. C., & Zhang, Y. (2019). Governance in entrepreneurial ecosystems: venture capitalists vs. technology parks. *Small Business Economics, 52*(2), 455–484.

Curşeu, P. L., & Schruijer, S. G. L. (2010). Does conflict shatter trust or does trust obliterate conflict? Revisiting the relationships between team diversity, conflict, and trust. *Group Dynamics: Theory, Research, and Practice, 14*(1), 66–79.

Cycyota, C. S., & Harrison, D. A. (2002). Top manager responses to organizational surveys: When questioning executives, are networks the answer? *Academy of Management Proceedings*, A1-A6.

Dachler, H. P., & Mobley, W. H. (1973). Construct validation of an instrumentality-expectancy-task-goal model of work motivation: Some theoretical boundary conditions. *Journal of Applied Psychology, 58*(3), 397–418.

Daft, R. L., & Weick, K. E. (1984). Toward a model of organizations as interpretation systems. *Academy of Management Review, 9*(2), 284–295.

Dahl, D. V. V., & Moreau, P. (2002). The influence and value of analogical thinking during new product ideation. *Journal of Marketing Research, 39*(1), 47–60.

Dalal, D. K., & Zickar, M. J. (2012). Some common myths about centering predictor variables in moderated multiple regression and polynomial regression. *Organizational Research Methods, 15*(3), 339–362.

Dalle, J.-M., Den Besten, M., & Menon, C. (2017). Using Crunchbase for economic and managerial research. *OECD Science, Technology and Industry Working Papers*.

Danneels, E., & Vestal, A. (2020). Normalizing vs. analyzing: Drawing the lessons from failure to enhance firm innovativeness. *Journal of Business Venturing, 35*(1), 105903.

Davidson, P. (1988). A technical definition of uncertainty and the long-run non-neutrality of money. *Cambridge Journal of Economics, 12*(3), 329–337.

Davidsson, P. (2005). The entrepreneurial process as a matching problem.

Davidsson, P. (2015). Entrepreneurial opportunities and the entrepreneurship nexus: A re-conceptualization. *Journal of Business Venturing, 30*(5), 674–695.

Davidsson, P., & Gordon, S. R. (2009). Nascent entrepreneur (ship) research: A review.

Davidsson, P., & Honig, B. (2003). The role of social and human capital among nascent entrepreneurs. *Journal of Business Venturing, 18*(3), 301–331.

De Clercq, D., Menzies, T. V., Diochon, M., & Gasse, Y. (2009). Explaining Nascent Entrepreneurs' Goal Commitment: An Exploratory Study. *Journal of Small Business & Entrepreneurship, 22*(2), 123–139.

De Clercq, D., & Sapienza, H. J. (2006). Effects of relational capital and commitment on venture capitalists' perception of portfolio company performance. *Journal of Business Venturing, 21*(3), 326–347.

De Jong, B. A., & Elfring, T. (2010). How does trust affect the performance of ongoing teams? The mediating role of reflexivity, monitoring, and effort. *Academy of Management Journal, 53*(3), 535–549.

Debus, M. E., Probst, T. M., König, C. J., & Kleinmann, M. (2012). Catch me if I fall! Enacted uncertainty avoidance and the social safety net as country-level moderators in the job insecurity-job attitudes link. *Journal of Applied Psychology, 97*(3), 690–698.

Delmar, F., & Shane, S. A. (2006). Does experience matter? The effect of founding team experience on the survival and sales of newly founded ventures. *Strategic Organization, 4*(3), 215–247.

DeMarrais, K. B., & Lapan, S. D. (2003). Qualitative interview studies: Learning through experience. In K. B. DeMarrais & S. D. Lapan (Eds.), *Foundations for research. Methods of inquiry in education and the social sciences* (pp. 67–84). Mahwah, NJ: L. Erlbaum Associates.

Dennis, A. R., Robert, L. P., Curtis, A. M., Kowalczyk, S. T., & Hasty, B. K. (2012). Research note —trust is in the eye of the beholder: A vignette study of postevent behavioral controls' effects on individual trust in virtual teams. *Information Systems Research, 23*(2), 546–558.

Detert, J. R., & Burris, E. R. (2007). Leadership behavior and employee voice: Is the door really open? *Academy of Management Journal, 50*(4), 869–884.

Deutskens, E., Ruyter, K. de, Wetzels, M., & Oosterveld, P. (2004). Response rate and response quality of internet-based surveys: An experimental study. *Marketing Letters, 15*(1), 21–36.

Dew, N., Read, S., Sarasvathy, S. D., & Wiltbank, R. (2009). Effectual versus predictive logics in entrepreneurial decision-making: Differences between experts and novices. *Journal of Business Venturing, 24*(4), 287–309.

Dickson, P. H., Solomon, G. T., & Weaver, K. M. (2008). Entrepreneurial selection and success: does education matter? *Journal of Small Business and Enterprise Development, 15*(2), 239–258.

Dimov, D. (2007). Beyond the single-person, single-insight attribution in understanding entrepreneurial opportunities. *Entrepreneurship Theory and Practice, 31*(5), 713–731.

Dimov, D. (2010). Nascent entrepreneurs and venture emergence: Opportunity confidence, human capital, and early planning. *Journal of Management Studies, 47*(6), 1123–1153.

Dohmen, T., Falk, A., Huffman, D., & Sunde, U. (2008). Representative trust and reciprocity: Prevalence and determinants. *Economic Inquiry, 46*(1), 84–90.

Domurath, A., Patzelt, H., & Liebl, A. J. (2020). Does negative feedback impact new ventures' organizational identity? The role of founding teams' human capital and feedback source. *Journal of Business Venturing, 3*(35), 105987.

Drnovšek, M., Örtqvist, D., & Wincent, J. (2010a). The effectiveness of coping strategies used by entrepreneurs and their impact on personal well-being and venture performance. *Journal of Economics and Business, 28*(2), 193–220.

Drnovšek, M., Wincent, J., & Cardon, M. S. (2010b). Entrepreneurial self-efficacy and business start-up: developing a multi-dimensional definition. *International Journal of Entrepreneurial Behavior & Research, 16*(4), 329–348.

Dubard Barbosa, S., Fayolle, A., & Smith, B. R. (2019). Biased and overconfident, unbiased but going for it: How framing and anchoring affect the decision to start a new venture. *Journal of Business Venturing, 34*(3), 528–557.

Dubrow, S., Emich, K. J., & Behrend, T. S. (2018). I think you can: transpersonal efficacy in teams. *Journal of Managerial Psychology, 33*(7/8), 458–474.

Eckhardt, J. T., & Shane, S. A. (2011). Industry changes in technology and complementary assets and the creation of high-growth firms. *Journal of Business Venturing, 26*(4), 412–430.

Edelman, L. F., Brush, C. G., Manolova, T. S., & Greene, P. G. (2010). Start-up motivations and growth intentions of minority nascent entrepreneurs. *Journal of Small Business Management, 48*(2), 174–196.

Edelman, L. F., & Yli-Renko, H. (2010). The impact of environment and entrepreneurial perceptions on venture-creation efforts: Bridging the discovery and creation views of entrepreneurship. *Entrepreneurship Theory and Practice, 34*(5), 833–856.

Edmondson, A. C. (1999). Psychological safety and learning behavior in work teams. *Administrative Science Quarterly, 44*(2), 350–383.

Edmondson, A. C., Kramer, R. M., & Cook, K. S. (2004). Psychological safety, trust, and learning in organizations: A group-level lens. *Trust and distrust in organizations: Dilemmas and approaches, 12*, 239–272.

Edwards, A. L. (1957). The social desirability variable in personality assessment and research.

Eisenhardt, K. M. (2013). Top management teams and the performance of entrepreneurial firms. *Small Business Economics, 40*(4), 805–816.

Eisenhardt, K. M., & Schoonhoven, C. B. (1990). Organizational growth: Linking founding team, strategy, environment, and growth among US semiconductor ventures, 1978-1988. *Administrative Science Quarterly*, 504–529.

Emerson, R. M. (1976). Social exchange theory. *Annual Review of Sociology, 2*(1), 335–362.

Emich, K. J. (2012). Transpersonal efficacy: How efficacy perceptions of single others influence task performance. *Human Performance, 25*(3), 235–254.

Ensley, M. D., & Hmieleski, K. M. (2005). A comparative study of new venture top management team composition, dynamics and performance between university-based and independent start-ups. *Research Policy, 34*(7), 1091–1105.

Ensley, M. D., Pearson, A. W., & Amason, A. C. (2002). Understanding the dynamics of new venture top management teams: cohesion, conflict, and new venture performance. *Journal of Business Venturing, 17*(4), 365–386.

Faraj, S., & Sproull, L. (2000). Coordinating expertise in software development teams. *Management Science, 46*(12), 1554–1568.

Farmer, S. M., Yao, X., & Kung-Mcintyre, K. (2011). The behavioral impact of entrepreneur identity aspiration and prior entrepreneurial experience. *Entrepreneurship Theory and Practice, 35*(2), 245–273.

Ferris, K. R. (1978). Perceived environmental uncertainty as a mediator of expectancy theory predictions: Some preliminary findings. *Decision Sciences, 9*(3), 379–390.

Fisher, C. D., & To, M. L. (2012). Using experience sampling methodology in organizational behavior. *Journal of Organizational Behavior, 33*(7), 865–877.

Fisher, D. M., Bell, S. T., Dierdorff, E. C., & Belohlav, J. A. (2012). Facet personality and surface-level diversity as team mental model antecedents: implications for implicit coordination. *Journal of Applied Psychology, 97*(4), 825–841.

Fitzsimmons, J. R., & Douglas, E. J. (2011). Interaction between feasibility and desirability in the formation of entrepreneurial intentions. *Journal of Business Venturing, 26*(4), 431–440.

Folta, T. B., Delmar, F., & Wennberg, K. (2010). Hybrid entrepreneurship. *Management Science, 56*(2), 253–269.

Forbes, D. P. (2007). Reconsidering the strategic implications of decision comprehensiveness. *Academy of Management Review, 32*(2), 361–376.

Forgas, J. P. (2011). Can negative affect eliminate the power of first impressions? Affective influences on primacy and recency effects in impression formation. *Journal of Experimental Social Psychology, 47*(2), 425–429.

Foss, N. J., Klein, P. G., Kor, Y. Y., & Mahoney, J. T. (2008). Entrepreneurship, subjectivism, and the resource-based view: toward a new synthesis. *Strategic Entrepreneurship Journal, 2*(1), 73–94.

Freel, M. S. (2005). Perceived environmental uncertainty and innovation in small firms. *Small Business Economics, 25*(1), 49–64.

Fulton, B. R. (2014). Organizational surveys: Using response enhancing techniques and conducting nonresponse analyses. *Academy of Management Proceedings*, 14059.

Funken, R., Gielnik, M. M., & Foo, M.-D. (2020). How can problems be turned into something good? The role of entrepreneurial learning and error mastery orientation. *Entrepreneurship Theory and Practice, 44*(2), 315–338.

Gabelica, C., van den Bossche, P., Fiore, S. M., Segers, M., & Gijselaers, W. H. (2016). Establishing team knowledge coordination from a learning perspective. *Human Performance, 29*(1), 33–53.

Gaglio, C. M., & Katz, J. A. (2001). The psychological basis of opportunity identification: Entrepreneurial alertness. *Small Business Economics, 16*(2), 95–111.

Galesic, M., & Bosnjak, M. (2009). Effects of questionnaire length on participation and indicators of response quality in a web survey. *International Journal of Public Opinion Research, 73*(2), 349–360.

Gardner, R. G., Harris, T. B., Li, N., Kirkman, B. L., & Mathieu, J. E. (2017). Understanding "it depends" in organizational research. *Organizational Research Methods, 20*(4), 610–638.

Garst, H., Frese, M., & Molenaar, P. C. (2000). The temporal factor of change in stressor-strain relationships: a growth curve model on a longitudinal study in east Germany. *Journal of Applied Psychology, 85*(3), 417–438.

Gartner, W. B. (1985). A conceptual framework for describing the phenomenon of new venture creation. *Academy of Management Review, 10*(4), 696–706.

Gartner, W. B. (1988). "Who Is an entrepreneur?" is the wrong question. *American Journal of Small Business, 12*(4), 11–32.

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

Gemmell, R. M., Boland, R. J., & Kolb, D. A. (2012). The socio-cognitive dynamics of entrepreneurial ideation. *Entrepreneurship Theory and Practice, 36*(5), 1053–1073.

Gielnik, M. M., Spitzmuller, M., Schmitt, A., Klemann, D. K., & Frese, M. (2015). "I put in effort, therefore I am passionate": Investigating the path from effort to passion in entrepreneurship. *Academy of Management Journal, 58*(4), 1012–1031.

Gielnik, M. M., Zacher, H., & Wang, M. (2018). Age in the entrepreneurial process: The role of future time perspective and prior entrepreneurial experience. *Journal of Applied Psychology, 103*(10), 1067–1085.

Gigerenzer, G., Hoffrage, U., & Kleinbölting, H. (1991). Probabilistic mental models: a Brunswikian theory of confidence. *Psychological Review, 98*(4), 506–528.

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

Gioia, D. A., Corley, K. G., & Hamilton, A. L. (2013). Seeking qualitative rigor in inductive research. *Organizational Research Methods, 16*(1), 15–31.

Goldenberg, K. L., McGrath, D. E., & Tan, L. (2009). The effects of incentives on the Consumer Expenditure Interview Survey. In *64th Annual Conference of the American Association for Public Opinion Research* .

Goldenstein, J., Hunoldt, M., & Oertel, S. (2019). How optimal distinctiveness affects new ventures' failure risk: A contingency perspective. *Journal of Business Venturing, 34*(3), 477–495.

Gollwitzer, P. M. (1993). Goal achievement: The role of intentions. *European Review of Social Psychology, 4*(1), 141–185.

Goncalo, J. A., Polman, E., & Maslach, C. (2010). Can confidence come too soon? Collective efficacy, conflict and group performance over time. *Organizational Behavior and Human Decision Processes, 113*(1), 13–24.

Gosling, S. D., Vazire, S., Srivastava, S., & John, O. P. (2004). Should we trust web-based studies? A comparative analysis of six preconceptions about internet questionnaires. *American Psychologist, 59*(2), 93–104.

Gottschalk, S., Greene, F. J., & Müller, B. (2017). The impact of habitual entrepreneurial experience on new firm closure outcomes. *Small Business Economics, 48*(2), 303–321.

Grandey, A. A. (2003). When "the show must go on": Surface acting and deep acting as determinants of emotional exhaustion and peer-rated service delivery. *Academy of Management Journal, 46*(1), 86–96.

Grant, A. M., & Shin, J. (2012). *Work motivation: Directing, energizing, and maintaining effort (and research). The Oxford Handbook of Human Motivation.* London: Oxford University Press.

Greenlaw, C., & Brown-Welty, S. (2009). A comparison of web-based and paper-based survey methods: testing assumptions of survey mode and response cost. *Evaluation Review, 33*(5), 464–480.

Greer, T. V., & Chuchinprakarn, N. (1999). Business respondents' behavior: Main and interaction effects of delivery method, questionnaire length, and time of the week. *Journal of Business-to-Business Marketing, 6*(1), 59–88.

Grégoire, D. A., Barr, P. S., & Shepherd, D. A. (2010a). Cognitive processes of opportunity recognition: The role of structural Alignment. *Organization Science, 21*(2), 413–431.

Grégoire, D. A., Corbett, A. C., & McMullen, J. S. (2011). The cognitive perspective in entrepreneurship: An agenda for future research. *Journal of Management Studies, 48*(6), 1443–1477.

Grégoire, D. A., & Shepherd, D. A. (2012). Technology-market combinations and the identification of entrepreneurial opportunities: An investigation of the opportunity-individual nexus. *Academy of Management Journal, 55*(4), 753–785.

Grégoire, D. A., Shepherd, D. A., & Schurer Lambert, L. (2010b). Measuring opportunity-recognition beliefs: Illustrating and validating an experimental approach. *Organizational Research Methods, 13*(1), 114–145.

Griffin, M. A., & Grote, G. (2020, forthcoming). When is more uncertainty better? A model of uncertainty regulation and effectiveness. *Academy of Management Review*.

Gruber, M., Kim, S. M., & Brinckmann, J. (2015). What is an attractive business opportunity? An empirical study of opportunity evaluation decisions by technologists, managers, and entrepreneurs. *Strategic Entrepreneurship Journal, 9*(3), 205–225.

Gruber, M., MacMillan, I. C., & Thompson, J. D. (2008). Look before you leap: Market opportunity identification in emerging technology firms. *Management Science, 54*(9), 1652–1665.

Guzzo, R. A., Yost, P. R., Campbell, R. J., & Shea, G. P. (1993). Potency in groups: articulating a construct. *British Journal of Social Psychology, 32*(1), 87–106.

Hackman, J.R., & Porter, L. W. (1968). Expectancy theory predictions of work effectiveness. *Organizational Behavior and Human Performance, 3*(4), 417–426.

Hagedoorn, J. (1993). Understanding the rationale of strategic technology partnering: Interorganizational modes of cooperation and sectoral differences. *Strategic Management Journal, 14*(5), 371–385.

Hair, J. F., Black, W. C., Babin, B. J., & Anderson, R. E. (2014). *Multivariate data analysis* (Seventh edition, Pearson new international edition). *Pearson custom library.* Harlow, Essex: Pearson.

Harrell, A. M., & Stahl, M. J. (1984). Modeling managers' effort-level decisions for a within-persons examination of expectancy theory in a budget setting. *Decision Sciences, 15*(1), 52–73.

Harrison, D. A., McLaughlin, M. E., & Coalter, T. M. (1996). Context, cognition, and common method variance: Psychometric and verbal protocol evidence. *Organizational Behavior and Human Decision Processes, 68*(3), 246–261.

Haworth, C. L., & Levy, P. E. (2001). The importance of instrumentality beliefs in the prediction of organizational citizenship behaviors. *Journal of Vocational Behavior, 59*(1), 64–75.

Haynie, J. M., Shepherd, D. A., & McMullen, J. S. (2009). An opportunity for me? The role of resources in opportunity evaluation decisions. *Journal of Management Studies, 46*(3), 337–361.

Hayton, J. C., & Cholakova, M. (2012). The role of affect in the creation and intentional pursuit of entrepreneurial ideas. *Entrepreneurship Theory and Practice, 36*(1), 41–67.

Hayward, M., Forster, W. R., Sarasvathy, S. D., & Fredrickson, B. L. (2010). Beyond hubris: How highly confident entrepreneurs rebound to venture again. *Journal of Business Venturing, 25*(6), 569–578.

Hayward, M., Shepherd, D. A., & Griffin, D. (2006). A hubris theory of entrepreneurship. *Management Science, 52*(2), 160–172.

Healey, M. P., Vuori, T., & Hodgkinson, G. P. (2015). When teams agree while disagreeing: Reflexion and reflection in shared cognition. *Academy of Management Review, 40*(3), 399–422.

Heavey, C., & Simsek, Z. (2013). Top management compositional effects on corporate entrepreneurship: The moderating role of perceived technological uncertainty. *Journal of Product Innovation Management, 30*(5), 837–855.

Heavey, C., Simsek, Z., Roche, F., & Kelly, A. (2009). Decision comprehensiveness and corporate entrepreneurship: The moderating role of managerial uncertainty preferences and environmental dynamism. *Journal of Management Studies, 46*(8), 1289–1314.

Heerwegh, D. (2005). Effects of personal salutations in e-mail invitations to participate in a web survey. *Public Opinion Quarterly, 69*(4), 588–598.

Hektner, J. M., Schmidt, J. A., & Csikszentmihalyi, M. (2007). *Experience sampling method: Measuring the quality of everyday life.* Thousand Oaks, CA: Sage.

Hellerstedt, K., Aldrich, H. E., & Wiklund, J. (2007). The impact of past performance on the exit of team members in young firms: The role of team composition. *Frontiers of Entrepreneurship Research, 27*(11).

Heneman, H. G., & Schwab, D. P. (1972). Evaluation of research on expectancy theory predictions of employee performance. *Psychological Bulletin, 78*(1), 1–9.

Hennessy, D. A., Wiesenthal, D. L., & Kohn, P. M. (2000). The influence of traffic congestion, daily hassles, and trait stress susceptibility on state driver stress: An interactive perspective 1. *Journal of Applied Biobehavioral Research, 5*(2), 162–179.

Hertel, G., Konradt, U., & Orlikowski, B. (2004). Managing distance by interdependence: Goal setting, task interdependence, and team-based rewards in virtual teams. *European Journal of Work and Organizational Psychology, 13*(1), 1–28.

Hirst, M. K. (1987). The effects of setting budget goals and task uncertainty on performance: A theoretical analysis. *Accounting Review, 62*(4), 774–784.

Hisrich, R., Langan-Fox, J., & Grant, S. (2007). Entrepreneurship research and practice: a call to action for psychology. *American Psychologist, 62*(6), 575–589.

Hitt, M. A., Beamish, P. W., Jackson, S. E., & Mathieu, J. E. (2007). Building theoretical and empirical bridges across levels: Multilevel research in management. *Academy of Management Journal, 50*(6), 1385–1399.

Hmieleski, K. M., & Baron, R. A. (2008a). Regulatory focus and new venture performance: A study of entrepreneurial opportunity exploitation under conditions of risk versus uncertainty. *Strategic Entrepreneurship Journal, 2*(4), 285–299.

Hmieleski, K. M., & Baron, R. A. (2008b). When does entrepreneurial self-efficacy enhance versus reduce firm performance? *Strategic Entrepreneurship Journal, 2*(1), 57–72.

Hmieleski, K. M., & Baron, R. A. (2009). Entrepreneurs' optimism and new venture performance: A social cognitive perspective. *Academy of Management Journal, 52*(3), 473–488.

Hmieleski, K. M., Carr, J. C., & Baron, R. A. (2015). Integrating discovery and creation perspectives of entrepreneurial action: The relative roles of founding CEO human capital, social capital, and psychological capital in contexts of risk versus uncertainty. *Strategic Entrepreneurship Journal, 9*(4), 289–312.

Hmieleski, K. M., & Ensley, M. D. (2007). A contextual examination of new venture performance: entrepreneur leadership behavior, top management team heterogeneity, and environmental dynamism. *Journal of Organizational Behavior, 28*(7), 865–889.

Hoang, H., & Gimeno, F. J. (2010). Becoming a founder: How founder role identity affects entrepreneurial transitions and persistence in founding. *Journal of Business Venturing, 25*(1), 41–53.

Hoenig, D., & Henkel, J. (2015). Quality signals? The role of patents, alliances, and team experience in venture capital financing. *Research Policy, 44*(5), 1049–1064.

Hoerger, M. (2010). Participant dropout as a function of survey length in internet-mediated university studies: implications for study design and voluntary participation in psychological research. *Cyberpsychology, Behavior and Social Networking, 13*(6), 697–700.

Hoever, I. J., van Knippenberg, D., van Ginkel, W. P., & Barkema, H. G. (2012). Fostering team creativity: perspective taking as key to unlocking diversity's potential. *Journal of Applied Psychology, 97*(5), 982–996.

Hoever, I. J., Zhou, J., & van Knippenberg, D. (2018). Different strokes for different teams: The contingent effects of positive and negative feedback on the creativity of informationally homogeneous and diverse teams. *Academy of Management Journal, 61*(6), 2159–2181.

Höhmann, H.-H., & Welter, F. (2005). *Trust and entrepreneurship: A West-East perspective.* Cheltenham: Edward Elgar.

Holcomb, T. R., Ireland, R. D., Holmes Jr, R. M., & Hitt, M. A. (2009). Architecture of entrepreneurial learning: Exploring the link among heuristics, knowledge, and action. *Entrepreneurship Theory and Practice, 33*(1), 167–192.

Hollingshead, A. B. (1998). Communication, learning, and retrieval in transactive memory systems. *Journal of Experimental Social Psychology, 34*(5), 423–442.

Holtz-Eakin, D., Joulfaian, D., & Rosen, H. S. (1994). Sticking it out: Entrepreneurial survival and liquidity constraints. *Journal of Political Economy, 102*(1), 53–75.

Hox, J. J., Moerbeek, M., & van de Schoot, R. (2017). *Multilevel analysis: Techniques and applications.* New York, NY: Routledge.

Hsieh, C., Nickerson, J. A., & Zenger, T. R. (2007). Opportunity discovery, problem solving and a theory of the entrepreneurial firm. *Journal of Management Studies, 44*(7), 1255–1277.

Hsu, D. H. (2007). Experienced entrepreneurial founders, organizational capital, and venture capital funding. *Research Policy, 36*(5), 722–741.

Hsu, M.-H., & Chang, C.-M. (2014). Examining interpersonal trust as a facilitator and uncertainty as an inhibitor of intra-organisational knowledge sharing. *Information Systems Journal, 24*(2), 119–142.

Huckman, R. S., Staats, B. R., & Upton, D. M. (2009). Team familiarity, role experience, and performance: Evidence from Indian software services. *Management Science, 55*(1), 85–100.

Hüffmeier, J., Filusch, M., Mazei, J., Hertel, G., Mojzisch, A., & Krumm, S. (2017). On the boundary conditions of effort losses and effort gains in action teams. *Journal of Applied Psychology, 102*(12), 1673–1685.

Ireland, R. D., & Webb, J. W. (2009). Crossing the great divide of strategic entrepreneurship: Transitioning between exploration and exploitation. *Business Horizons, 52*(5), 469–479.

Jäckle, A., & Lynn, P. (2008). Respondent incentives in a multi-mode panel survey: Cumulative effects on nonresponse and bias. *Survey Methodology, 34*(1), 105–117.

Jäckle, A., Lynn, P., Sinibaldi, J., & Tipping, S. (2013). The effect of interviewer experience, attitudes, personality and skills on respondent co-operation with face-to-face surveys. *Survey Research Methods, 7*(1), 1–15.

Jenkins, A. S., Wiklund, J., & Brundin, E. (2014). Individual responses to firm failure: Appraisals, grief, and the influence of prior failure experience. *Journal of Business Venturing, 29*(1), 17–33.

Jennings, J. E., Edwards, T., Jennings, P. D., & Delbridge, R. (2015). Emotional arousal and entrepreneurial outcomes: Combining qualitative methods to elaborate theory. *Journal of Business Venturing, 30*(1), 113–130.

Jiang, Y., & Tornikoski, E. T. (2019). Perceived uncertainty and behavioral logic: Temporality and unanticipated consequences in the new venture creation process. *Journal of Business Venturing, 34*(1), 23–40.

Jin, L., Madison, K., Kraiczy, N. D., Kellermanns, F. W., Crook, T. R., & Xi, J. (2017). Entrepreneurial team composition characteristics and new venture performance: A meta-analysis. *Entrepreneurship Theory and Practice, 41*(5), 743–771.

Jung, H., Vissa, B., & Pich, M. (2017). How do entrepreneurial founding teams allocate task positions? *Academy of Management Journal, 60*(1), 264–294.

Kahn, L. M., & Sherer, P. D. (1990). Contingent pay and managerial performance. *ILR Review, 43*(3), 107-120.

Kamm, J. B., & Nurick, A. J. (1993). The stages of team venture formation: A decision-making model. *Entrepreneurship Theory and Practice, 17*(2), 17–27.

Kamm, J. B., Shuman, J. C., Seeger, J. A., & Nurick, A. J. (1990). Entrepreneurial teams in new venture creation: A research agenda. *Entrepreneurship Theory and Practice, 14*(4), 7–17.

Kanfer, R. (1990). Motivation theory and industrial and organizational psychology. *Handbook of Industrial and Organizational Psychology, 1*(2), 75–130.

Kanfer, R., Frese, M., & Johnson, R. E. (2017). Motivation related to work: A century of progress. *Journal of Applied Psychology, 102*(3), 338–355.

Kaplowitz, M. D., Hadlock, T. D., & Levine, R. (2004). A comparison of web and mail survey response rates. *Public Opinion Quarterly, 68*(1), 94–101.

Kappes, H. B., & Oettingen, G. (2011). Positive fantasies about idealized futures sap energy. *Journal of Experimental Social Psychology, 47*(4), 719–729.

Kautonen, T., Tornikoski, E. T., & Kibler, E. (2011). Entrepreneurial intentions in the third age: the impact of perceived age norms. *Small Business Economics, 37*(2), 219–234.

Keith, M., Demirkan, H., & Goul, M. (2017). The Role of Task Uncertainty in IT Project Team Advice Networks. *Decision Sciences, 48*(2), 207–247.

Kenny, D. A., & La Voie, L. (1985). Separating individual and group effects. *Journal of Personality and Social Psychology, 48*(2), 339–348.

Kier, A. S., & McMullen, J. S. (2018). Entrepreneurial Imaginativeness in New Venture Ideation. *Academy of Management Journal, 61*(6), 2265–2295.

Kirzner, I. M. (1997). Entrepreneurial discovery and the competitive market process: An Austrian approach. *Journal of Economic Literature, 35*(1), 60–85.

Kitaygorodskaya, N. (2006). Measurement of team knowledge: transactive memory system and team mental models. In *Proceedings of the Research Forum to understand Business in Knowledge Society* (Vol. 1, p. 6).

Klein, H. J. (1991). Further evidence on the relationship between goal setting and expectancy theories. *Organizational Behavior and Human Decision Processes, 49*(2), 230–257.

Klein, P. G. (2008). Opportunity discovery, entrepreneurial action, and economic organization. *Strategic Entrepreneurship Journal, 2*(3), 175–190.

Klimoski, R. J., & Mohammed, S. (1994). Team mental model: Construct or metaphor? *Journal of Management, 20*(2), 403–437.

Klotz, A. C., Hmieleski, K. M., Bradley, B. H., & Busenitz, L. W. (2014). New venture teams: A review of the literature and roadmap for future research. *Journal of Management, 40*(1), 226–255.

Knight, F. H. (1921). *Risk, uncertainty and profit.* Chicago, IL: University of Chicago Press.

Kollmann, T., Stöckmann, C., & Kensbock, J. M. (2019). I can't get no sleep—The differential impact of entrepreneurial stressors on work-home interference and insomnia among experienced versus novice entrepreneurs. *Journal of Business Venturing, 34*(4), 692–708.

Kolvereid, L., & Bullvag, E. (1996). Growth intentions and actual growth: The impact of entrepreneurial choice. *Journal of Enterprising Culture, 4*(1), 1–17.

Kominis, G., & Emmanuel, C. R. (2007). The expectancy–valence theory revisited: Developing an extended model of managerial motivation. *Management Accounting Research, 18*(1), 49–75.

Konon, A., Fritsch, M., & Kritikos, A. S. (2018). Business cycles and start-ups across industries: An empirical analysis of German regions. *Journal of Business Venturing, 33*(6), 742–761.

Kor, Y. Y. (2003). Experience-based top management team competence and sustained growth. *Organization Science, 14*(6), 707–719.

Kotha, R., & George, G. (2012). Friends, family, or fools: Entrepreneur experience and its implications for equity distribution and resource mobilization. *Journal of Business Venturing, 27*(5), 525–543.

Kownatzki, M., Walter, J., Floyd, S. W., & Lechner, C. (2013). Corporate control and the speed of strategic business unit decision making. *Academy of Management Journal, 56*(5), 1295–1324.

Kraiger, K., & Aguinis, H. (2013). Training effectiveness: Assessing training needs, motivation, and accomplishments. In *How people evaluate others in organizations* (pp. 229–246). Psychology Press.

Krueger, N. F. (2007). What lies beneath? The experiential essence of entrepreneurial thinking. *Entrepreneurship Theory and Practice, 31*(1), 123–138.

Krueger, N. F., Reilly, M. D., & Carsrud, A. L. (2000). Competing models of entrepreneurial intentions. *Journal of Business Venturing, 15*(5-6), 411–432.

Kühnel, J., Bledow, R., & Feuerhahn, N. (2016). When do you procrastinate? Sleep quality and social sleep lag jointly predict self-regulatory failure at work. *Journal of Organizational Behavior, 37*(7), 983–1002.

Laffineur, C., Dubard Barbosa, S., Fayolle, A., & Montmartin, B. (2019, forthcoming). The unshackled entrepreneur: Occupational determinants of entrepreneurial effort. *Journal of Business Venturing*.

Langfred, C. W. (2004). Too much of a good thing? Negative effects of high trust and individual autonomy in self-managing teams. *Academy of Management Journal, 47*(3), 385–399.

Latham, G. P., & Pinder, C. C. (2005). Work motivation theory and research at the dawn of the twenty-first century. *Annual Review of Psychology, 56*, 485–516.

Lawler, E. E., & Suttle, J. L. (1973). Expectancy theory and job behavior. *Organizational Behavior and Human Performance, 9*(3), 482–503.

Lee, C., Lee, K., & Pennings, J. M. (2001). Internal capabilities, external networks, and performance: a study on technology-based ventures. *Strategic Management Journal, 22*(6-7), 615–640.

Lee, T. W., Locke, E. A., & Phan, S. H. (1997). Explaining the assigned goal-incentive interaction: The role of self-efficacy and personal goals. *Journal of Management, 23*(4), 541–559.

Lewis, K. (2004). Knowledge and performance in knowledge-worker teams: A longitudinal study of transactive memory systems. *Management Science, 50*(11), 1519–1533.

Li, A. N., & Tan, H. H. (2013). What happens when you trust your supervisor? Mediators of individual performance in trust relationships. *Journal of Organizational Behavior, 34*(3), 407–425.

Li, D. (2013). Multilateral R&D alliances by new ventures. *Journal of Business Venturing, 28*(2), 241–260.

Li, Y., & Zahra, S. A. (2012). Formal institutions, culture, and venture capital activity: A cross-country analysis. *Journal of Business Venturing, 27*(1), 95–111.

Lichtenstein, B. B., Dooley, K. J., & Lumpkin, G. T. (2006). Measuring emergence in the dynamics of new venture creation. *Journal of Business Venturing, 21*(2), 153–175.

Lim, B.-C., & Klein, K. J. (2006). Team mental models and team performance: a field study of the effects of team mental model similarity and accuracy. *Journal of Organizational Behavior, 27*(4), 403–418.

Lindgreen, A., & Vanhamme, J. (2005). Viral marketing: The use of surprise. In *Advances in electronic marketing* (pp. 122–138). IGI Global.

Liu, C., Spector, P. E., & Shi, L. (2007). Cross-national job stress: a quantitative and qualitative study. *Journal of Organizational Behavior, 28*(2), 209–239.

Locke, E. A. (1968). Toward a theory of task motivation and incentives. *Organizational Behavior and Human Performance, 3*(2), 157–189.

Locke, E. A., Bryan, J. F., & Kendall, L. M. (1968). Goals and intentions as mediators of the effects of monetary incentives on behavior. *Journal of Applied Psychology, 52*(2), 104–121.

Locke, E. A., & Latham, G. P. (1990). *A theory of goal setting & task performance.* Englewood Cliffs, NJ: Prentice-Hall, Inc.

Locke, E. A., Motowidlo, S. J., & Bobko, P. (1986). Using Self-Efficacy Theory to Resolve the Conflict Between Goal-Setting Theory and Expectancy Theory in Organizational

Behavior and Industrial/Organizational Psychology. *Journal of Social and Clinical Psychology, 4*(3), 328–338.

Lofstrom, M., Bates, T., & Parker, S. C. (2014). Why are some people more likely to become small-businesses owners than others: Entrepreneurship entry and industry-specific barriers. *Journal of Business Venturing, 29*(2), 232–251.

Lowe, R. A., & Ziedonis, A. A. (2006). Overoptimism and the performance of entrepreneurial firms. *Management Science, 52*(2), 173–186.

Lynn, P. (2014). Longer interviews may not affect subsequent survey participation propensity. *Public Opinion Quarterly, 78*(2), 500–509.

MacCallum, R. C., Widaman, K. F., Zhang, S., & Hong, S. (1999). Sample size in factor analysis. *Psychological Methods, 4*(1), 84–99.

Mach, M., Dolan, S., & Tzafrir, S. (2010). The differential effect of team members' trust on team performance: The mediation role of team cohesion. *Journal of Occupational and Organizational Psychology, 83*(3), 771–794.

Madill, A., & Gough, B. (2008). Qualitative research and its place in psychological science. *Psychological Methods, 13*(3), 254–271.

Malik, M. A. R., Butt, A. N., & Choi, J. N. (2015). Rewards and employee creative performance: Moderating effects of creative self-efficacy, reward importance, and locus of control. *Journal of Organizational Behavior, 36*(1), 59–74.

Manigart, S. (1994). The founding rate of venture capital firms in three European countries (1970–1990). *Journal of Business Venturing, 9*(6), 525–541.

Mascarenhas, B. (1997). The order and size of entry into international markets. *Journal of Business Venturing, 12*(4), 287–299.

Mathieu, J. E., Heffner, T. S., Goodwin, G. F., Cannon-Bowers, J. A., & Salas, E. (2005). Scaling the quality of teammates' mental models: Equifinality and normative comparisons. *Journal of Organizational Behavior, 26*(1), 37–56.

Mathieu, J. E., Heffner, T. S., Goodwin, G. F., Salas, E., & Cannon-Bowers, J. A. (2000). The influence of shared mental models on team process and performance. *Journal of Applied Psychology, 85*(2), 273–283.

Mathieu, J. E., Kukenberger, M. R., D'Innocenzo, L., & Reilly, G. (2015). Modeling reciprocal team cohesion-performance relationships, as impacted by shared leadership and members' competence. *Journal of Applied Psychology, 100*(3), 713–734.

Matsui, T., Okada, A., & Mizuguchi, R. (1981). Expectancy theory prediction of the goal theory postulate, "The harder the goals, the higher the performance.". *Journal of Applied Psychology, 66*(1), 54–58.

Mayer, R. C., Davis, J. H., & Schoorman, F. D. (1995). An integrative model of organizational trust. *Academy of Management Review, 20*(3), 709–734.

McAdam, M., & Marlow, S. (2007). Building futures or stealing secrets? Entrepreneurial cooperation and conflict within business incubators. *International Small Business Journal: Researching Entrepreneurship, 25*(4), 361–382.

McAllister, D. J. (1995). Affect-and cognition-based trust as foundations for interpersonal cooperation in organizations. *Academy of Management Journal, 38*(1), 24–59.

McAllister, D. J., Kamdar, D., Morrison, E. W., & Turban, D. B. (2007). Disentangling role perceptions: how perceived role breadth, discretion, instrumentality, and efficacy relate to helping and taking charge. *Journal of Applied Psychology, 92*(5), 1200–1211.

McClelland, D. C. (1961). *Characteristics of the Entrepreneur In The Achieving Society:* D. Van Nostrand, Princeton, NJ.

McDonald, R., & Gao, C. (2019, forthcoming). Pivoting isn't enough? Managing strategic reorientation in new ventures. *Organization Science*.

McGrath, D. E. (2006). An incentives experiment in the US consumer expenditure quarterly survey. In *Proceedings of the survey research methods section of the American Statistical Association* .

McKelvie, A., Haynie, J. M., & Gustafsson, V. (2011). Unpacking the uncertainty construct: Implications for entrepreneurial action. *Journal of Business Venturing, 26*(3), 273–292.

McKelvie, A., Wiklund, J., & Brattström, A. (2018). Externally acquired or internally generated? Knowledge development and perceived environmental dynamism in new venture innovation. *Entrepreneurship Theory and Practice, 42*(1), 24–46.

McKnight, D. H., Cummings, L. L., & Chervany, N. L. (1998). Initial trust formation in new organizational relationships. *Academy of Management Review, 23*(3), 473–490.

McMullen, J. S., & Kier, A. S. (2016). Trapped by the entrepreneurial mindset: Opportunity seeking and escalation of commitment in the Mount Everest disaster. *Journal of Business Venturing, 31*(6), 663–686.

McMullen, J. S., & Shepherd, D. A. (2006). Entrepreneurial action and the role of uncertainty in the theory of the entrepreneur. *Academy of Management Review, 31*(1), 132–152.

Meijer, I. S. M., Hekkert, M. P., & Koppenjan, J. F. M. (2007). The influence of perceived uncertainty on entrepreneurial action in emerging renewable energy technology; biomass gasification projects in the Netherlands. *Energy Policy, 35*(11), 5836–5854.

Mento, A. J., Locke, E. A., & Klein, H. J. (1992). Relationship of goal level to valence and instrumentality. *Journal of Applied Psychology, 77*(4), 395–405.

Meoli, A., Fini, R., Sobrero, M., & Wiklund, J. (2020). How entrepreneurial intentions influence entrepreneurial career choices: The moderating influence of social context. *Journal of Business Venturing, 35*(3), 105982.

Metts, S., Sprecher, S., Cupach, W. R., Montgomery, B. M., & Duck, S. (1991). Retrospective self-reports. *Studying Interpersonal Interaction*, 162–178.

Meyer, B. D., Mok, W. K. C., & Sullivan, J. X. (2015). Household surveys in crisis. *Journal of Economic Perspectives, 29*(4), 199–226.

Miles, M. P., Covin, J. G., & Heeley, M. B. (2000). The relationship between environmental dynamism and small firm structure, strategy, and performance. *Journal of Marketing Theory and Practice, 8*(2), 63–78.

Milgram, N., Marshevsky, S., & Sadeh, C. (1995). Correlates of academic procrastination: Discomfort, task aversiveness, and task capability. *Journal of Psychology, 129*(2), 145–155.

Milliken, F. J. (1987). Three types of perceived uncertainty about the environment: State, effect, and response uncertainty. *Academy of Management Review, 12*(1), 133–143.

Minniti, M., & Bygrave, W. (2001). A dynamic model of entrepreneurial learning. *Entrepreneurship Theory and Practice, 25*(3), 5–16.

Mitchell, T. R., & Knudsen, B. W. (1973). Instrumentality theory predictions of students' attitudes towards business and their choice of business as an occupation. *Academy of Management Journal, 16*(1), 41–52.

Mitchell, T. R., & Nebeker, D. M. (1973). Expectancy theory predictions of academic effort and performance. *Journal of Applied Psychology, 57*(1), 61–67.

Moen, Ø., Heggeseth, A. G., & Lome, O. (2016). The positive effect of motivation and international orientation on SME growth. *Journal of Small Business Management, 54*(2), 659–678.

Moerbeek, M. (2004). The consequence of ignoring a level of nesting in multilevel analysis. *Multivariate Behavioral Research, 39*(1), 129–149.

Mohammed, S., & Dumville, B. C. (2001). Team mental models in a team knowledge framework: Expanding theory and measurement across disciplinary boundaries. *Journal of Organizational Behavior, 22*(2), 89–106.

Mohammed, S., Ferzandi, L., & Hamilton, K. (2010). Metaphor no more: A 15-year review of the team mental model construct. *Journal of Management, 36*(4), 876–910.

Mohammed, S., & Nadkarni, S. (2011). Temporal diversity and team performance: The moderating role of team temporal leadership. *Academy of Management Journal, 54*(3), 489–508.

Mol, E. de, Ho, V. T., & Pollack, J. M. (2018). Predicting entrepreneurial burnout in a moderated mediated model of job fit. *Journal of Small Business Management, 56*(3), 392–411.

Molina-Castillo, F.-J., Jimenez-Jimenez, D., & Munuera-Aleman, J.-L. (2011). Product competence exploitation and exploration strategies: The impact on new product performance through quality and innovativeness. *Industrial Marketing Management, 40*(7), 1172–1182.

Moore, D. A., & Healy, P. J. (2008). The trouble with overconfidence. *Psychological Review, 115*(2), 502–517.

Morris, M. H., Kuratko, D. F., Schindehutte, M., & Spivack, A. J. (2012). Framing the entrepreneurial experience. *Entrepreneurship Theory and Practice, 36*(1), 11–40.

Morris, M. H., Miyasaki, N. N., Watters, C. E., & Coombes, S. M. (2006). The dilemma of growth: Understanding venture size choices of women entrepreneurs. *Journal of Small Business Management, 44*(2), 221–244.

Morrison, E. W. (1994). Role definitions and organizational citizenship behavior: The importance of the employee's perspective. *Academy of Management Journal, 37*(6), 1543–1567.

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

Mueller, J. S., Melwani, S., & Goncalo, J. A. (2012). The bias against creativity: Why people desire but reject creative ideas. *Psychological Science, 23*(1), 13–17.

Mueller, S. L., & Thomas, A. S. (2001). Culture and entrepreneurial potential. *Journal of Business Venturing, 16*(1), 51–75.

Mungaray, A., & Ramirez-Urquidy, M. (2011). Full and part-time entrepreneurship and the supply of entrepreneurial effort: Evidence from Mexican microenterprises. *Journal of Developmental Entrepreneurship, 16*(04), 441–458.

Murnieks, C. Y., Cardon, M. S., & Haynie, J. M. (2020a). Fueling the fire: Examining identity centrality, affective interpersonal commitment and gender as drivers of entrepreneurial passion. *Journal of Business Venturing, 35*(1), 105909.

Murnieks, C. Y., Klotz, A. C., & Shepherd, D. A. (2020b). Entrepreneurial motivation: A review of the literature and an agenda for future research. *Journal of Organizational Behavior, 41*(2), 115–143.

Mwangi, R. M., & Rotich, A. (2019). The effect of threat of job loss on entrepreneurial intentions and gestation actions. *Journal of Small Business Management, 57*(sup2), 598–615.

Nebeker, D. M., & Mitchell, T. R. (1974). Leader behavior: An expectancy theory approach. *Organizational Behavior and Human Performance, 11*(3), 355–367.

Newman, T. B., Browner, W. S., Cummings, S. R., & Hulley, S. B. (2001). Designing studies of medical tests. *Designing Clinical Research*, 171–191.

Nooteboom, B. (2002). *Trust: Forms, foundations, functions, failures and figures.* Cheltenham: Edward Elgar.

Nunnally, J. C., & Bernstein, I. H. (1994). *Psychometric theory 3E.* New Delhi: Tata McGraw-Hill Education.

Nyberg, A. J., Pieper, J. R., & Trevor, C. O. (2016). Pay-for-performance's effect on future employee performance. *Journal of Management, 42*(7), 1753–1783.

Oedzes, J. J., van der Vegt, G. S., Rink, F. A., & Walter, F. (2019). On the origins of informal hierarchy: The interactive role of formal leadership and task complexity. *Journal of Organizational Behavior, 40*(3), 311–324.

Oliver, R. L. (1974). Expectancy theory predictions of salesmen's performance. *Journal of Marketing Research, 11*(3), 243–253.

Packard, M. D., Clark, B. B., & Klein, P. G. (2017). Uncertainty types and transitions in the entrepreneurial process. *Organization Science, 28*(5), 840–856.

Parker, S. C. (2006). Learning about the unknown: How fast do entrepreneurs adjust their beliefs? *Journal of Business Venturing, 21*(1), 1–26.

Patzelt, H., & Shepherd, D. A. (2011). Negative emotions of an entrepreneurial career: Self-employment and regulatory coping behaviors. *Journal of Business Venturing, 26*(2), 226–238.

Perry, J. T., Chandler, G. N., & Markova, G. (2012). Entrepreneurial effectuation: a review and suggestions for future research. *Entrepreneurship Theory and Practice, 36*(4), 837–861.

Peters, A., McEwen, B. S., & Friston, K. (2017). Uncertainty and stress: Why it causes diseases and how it is mastered by the brain. *Progress in Neurobiology, 156*, 164–188.

Peterson, R. S., & Behfar, K. J. (2003). The dynamic relationship between performance feedback, trust, and conflict in groups: A longitudinal study. *Organizational Behavior and Human Decision Processes, 92*(1-2), 102–112.

Pieper, J. R., Greenwald, J. M., & Schlachter, S. D. (2018). Motivating employee referrals: The interactive effects of the referral bonus, perceived risk in referring, and affective commitment. *Human Resource Management, 57*(5), 1159–1174.

Pinder, C. C. (1998). *Work motivation in organizational behavior.* Upper Saddle River, NJ: Prentice Hall.

Podsakoff, P. M., MacKenzie, S. B., Lee, J.-Y., & Podsakoff, N. P. (2003). Common method biases in behavioral research: a critical review of the literature and recommended remedies. *Journal of Applied Psychology, 88*(5), 879–903.

Politis, D. (2005). The process of entrepreneurial learning: A conceptual framework. *Entrepreneurship Theory and Practice, 29*(4), 399–424.

Porter, L. W., & Lawler, E. E. (1968). *Managerial attitudes and performance.* Homewood, IL: Dorsey Press.

Porter, S. R., & Whitcomb, M. E. (2003). The impact of contact type on web survey response rates. *The Public Opinion Quarterly, 67*(4), 579–588.

Porter, S. R., & Whitcomb, M. E. (2005). E-mail subject lines and their effect on web survey viewing and response. *Social Science Computer Review, 23*(3), 380–387.

Powell, A., Galvin, J., & Piccoli, G. (2006). Antecedents to team member commitment from near and far: A comparison between collocated and virtual teams. *Information Technology & People, 19*(4), 299–322.

Preller, R., Patzelt, H., & Breugst, N. (2020). Entrepreneurial visions in founding teams: Conceptualization, emergence, and effects on opportunity development. *Journal of Business Venturing, 35*(2), 105914.

Pritchard, R. D., & Sanders, M. S. (1973). The influence of valence, instrumentality, and expectancy on effort and performance. *Journal of Applied Psychology, 57*(1), 55–60.

Puleston, J. (2011). Online Research: Now & Next 2011 (Warc), Kings Fund, London, 1 March 2011. *International Journal of Market Research, 53*(4), 557–562.

Qin, X., Shepherd, D. A., Lin, D., Xie, S., Liang, X., & Lin, S. (2020, forthcoming). The dark side of entrepreneurs' creativity: Investigating how and when entrepreneurs' creativity increases the favorability of potential opportunities that harm nature. *Entrepreneurship Theory and Practice*.

Raff, D. M. G., & Scranton, P. (Eds.) (2017). *The emergence of routines: Entrepreneurship, organization, and business history* (First edition). Oxford, New York: Oxford University Press.

Rafferty, A. E., & Griffin, M. A. (2006). Perceptions of organizational change: a stress and coping perspective. *Journal of Applied Psychology, 91*(5), 1154–1162.

Raffiee, J., & Feng, J. (2014). Should I quit my day job?: A hybrid path to entrepreneurship. *Academy of Management Journal, 57*(4), 936–963.

Rau, D. (2005). The influence of relationship conflict and trust on the transactive memory: Performance relation in top management teams. *Small Group Research, 36*(6), 746–771.

Rauch, A., Fink, M., & Hatak, I. (2018). Stress processes: An essential ingredient in the entrepreneurial process. *Academy of Management Perspectives, 32*(3), 340–357.

Rea, L. M., & Parker, R. A. (2014). *Designing and conducting survey research: A comprehensive guide* (Fourth edition). San Francisco, CA: Jossey-Bass.

Rego, A., Owens, B., Yam, K. C., Bluhm, D., Cunha, M. P. e., Silard, A., et al. (2019). Leader humility and team performance: Exploring the mediating mechanisms of team PsyCap and task allocation effectiveness. *Journal of Management, 45*(3), 1009–1033.

Ren, Y., Carley, K. M., & Argote, L. (2006). The contingent effects of transactive memory: When is it more beneficial to know what others know? *Management Science, 52*(5), 671–682.

Renko, M., Kroeck, K. G., & Bullough, A. (2012). Expectancy theory and nascent entrepreneurship. *Small Business Economics, 39*(3), 667–684.

Rentsch, J. R., Heffner, T. S., & Duffy, L. T. (1994). What you know is what you get from experience. *Group & Organization Management, 19*(4), 450–474.

Rentsch, J. R., & Klimoski, R. J. (2001). Why do 'great minds' think alike?: Antecedents of team member schema agreement. *Journal of Organizational Behavior, 22*(2), 107–120.

Revilla, M., & Ochoa, C. (2017). Ideal and maximum length for a web survey. *International Journal of Market Research, 59*(5), 557–565.

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

Rico, R., Sánchez-Manzanares, M., Gil, F., & Gibson, C. (2008). Team implicit coordination processes: A team knowledge–based approach. *Academy of Management Review, 33*(1), 163–184.

Robinson, C. D., Tomek, S., & Schumacker, R. E. (2013). Tests of moderation effects: Difference in simple slopes versus the interaction term. *Multiple Linear Regression Viewpoints, 39*(1), 16–24.

Robinson, M. D., & Clore, G. L. (2002). Belief and feeling: evidence for an accessibility model of emotional self-report. *Psychological Bulletin, 128*(6), 934–960.

Roese, N. J., & Sherman, J. W. (2007). Expectancy. In A. W. Kruglanski & E. T. Higgins (Eds.), *Social Psychology: A Handbook of Basic Principles* (pp. 91–115). Guilford Press.

Rogelberg, S. G., & Stanton, J. M. (2007). Introduction. *Organizational Research Methods, 10*(2), 195–209.

Rosen, C. C., Dimotakis, N., Cole, M. S., Taylor, S. G., Simon, L. S., Smith, T. A., & Reina, C. S. (2020, forthcoming). When challenges hinder: An investigation of when and how challenge stressors impact employee outcomes. *Journal of Applied Psychology*.

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

Roure, J. B., & Keeley, R. H. (1990). Predictors of success in new technology based ventures. *Journal of Business Venturing, 5*(4), 201–220.

Roure, J. B., & Maidique, M. A. (1986). Linking prefunding factors and high-technology venture success: An exploratory study. *Journal of Business Venturing, 1*(3), 295–306.

Ruef, M., Aldrich, H. E., & Carter, N. M. (2003). The structure of founding teams: Homophily, strong ties, and isolation among US entrepreneurs. *American Sociological Review, 68*(2), 195–222.

Russell, R. D., & Russell, C. J. (1992). An examination of the effects of organizational norms, organizational structure, and environmental uncertainty on entrepreneurial strategy. *Journal of Management, 18*(4), 639–656.

Sampson, H. (2004). Navigating the waves: the usefulness of a pilot in qualitative research. *Qualitative Research, 4*(3), 383–402.

Sapienza, H. J., Manigart, S., & Vermeir, W. (1996). Venture capitalist governance and value added in four countries. *Journal of Business Venturing, 11*(6), 439–469.

Sarasvathy, S. D. (2001). Causation and effectuation: Toward a theoretical shift from economic inevitability to entrepreneurial contingency. *Academy of Management Review, 26*(2), 243–263.

Saud Khan, M., J. Breitenecker, R., & J. Schwarz, E. (2014). Entrepreneurial team locus of control: diversity and trust. *Management Decision, 52*(6), 1057–1081.

Sauermann, H., & Roach, M. (2013). Increasing web survey response rates in innovation research: An experimental study of static and dynamic contact design features. *Research Policy, 42*(1), 273–286.

Sawyer, J. E. (1990). Effects of risk and ambiguity on judgments of contingency relations and behavioral resource allocation decisions. *Organizational Behavior and Human Decision Processes, 45*(1), 85–110.

Schade, M., Piehler, R., Warwitz, C., & Burmann, C. (2018). Increasing consumers' intention to use location-based advertising. *Journal of Product & Brand Management, 27*(6), 661–669.

Schere, J. L. (1982). Tolerance of ambiguity as a discriminating variable between entrepreneurs and managers. *Academy of Management Proceedings*, 404–408.

Schibany, A., Hämäläinen, T. J., & Schienstock, G. (2000). *Interfirm co-operation and networking: concepts, evidence and policy. Paper for OECD project on National Systems of Innovation*.

Schilling, M. A., & Phelps, C. C. (2007). Interfirm collaboration networks: The impact of large-scale network structure on firm innovation. *Management Science, 53*(7), 1113–1126.

Schjoedt, L., & Kraus, S. (2009). Entrepreneurial teams: definition and performance factors. *Management Research News, 32*(6), 513–524.

Schjoedt, L., Kraus, S., Schenkel, M. T., & Garrison, G. (2009). Exploring the roles of social capital and team-efficacy in virtual entrepreneurial team performance. *Management Research News, 32*(6), 525–538.

Schjoedt, L., Monsen, E., Pearson, A. W., Barnett, T., & Chrisman, J. J. (2013). New venture and family business teams: Understanding team formation, composition, behaviors, and performance. *Entrepreneurship Theory and Practice, 37*(1), 1–15.

Schoonhoven, C. B., Eisenhardt, K. M., & Lyman, K. (1990). Speeding products to market: Waiting time to first product introduction in new firms. *Administrative Science Quarterly, 35*(1), 177.

Schoorman, F. D., & Mayer, R. C. (2008). The Value of Common Perspectives in Self-Reported Appraisals. *Organizational Research Methods, 11*(1), 148–159.

Scott, K. D., & Townsend, A. M. (1992). A test of Eden's expectancy/ goal difficulty model among sales representatives. *Academy of Management Proceedings*, 242–246.

Shan, W., Walker, G., & Kogut, B. (1994). Interfirm cooperation and startup innovation in the biotechnology industry. *Strategic Management Journal, 15*(5), 387–394.

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

Shane, S. A., & Venkataraman, S. (2000). The promise of entrepreneurship as a field of research. *Academy of Management Review, 25*(1), 217–226.

Shapero, A., & Sokol, L. (1982). The social dimensions of entrepreneurship. *Encyclopedia of Entrepreneurship*, 72–90.

Shaver, K. G., & Scott, L. R. (1992). Person, process, choice: The psychology of new venture creation. *Entrepreneurship Theory and Practice, 16*(2), 23–46.

Sheehan, K. B. (2001). E-mail Survey Response Rates: A Review. *Journal of Computer-Mediated Communication, 6*(2).

Shepherd, D. A. (2015). Party On! A call for entrepreneurship research that is more interactive, activity based, cognitively hot, compassionate, and prosocial. *Journal of Business Venturing, 30*(4), 489–507.

Shepherd, D. A., & Krueger, N. F. (2002). An intentions-based model of entrepreneurial teams' social cognition. *Entrepreneurship Theory and Practice, 27*(2), 167–185.

Shieh, G. (2009). Detecting interaction effects in moderated multiple regression with continuous variables power and sample size considerations. *Organizational Research Methods, 12*(3), 510–528.

Siemsen, E., Roth, A., & Oliveira, P. (2010). Common method bias in regression models with linear, quadratic, and interaction effects. *Organizational Research Methods, 13*(3), 456–476.

Sieweke, J., & Zhao, B. (2015). The impact of team familiarity and team leader experience on team coordination errors: A panel analysis of professional basketball teams. *Journal of Organizational Behavior, 36*(3), 382–402.

Sijtsma, K. (2009). On the use, the misuse, and the very limited usefulness of Cronbach's alpha. *Psychometrika, 74*(1), 107–120.

Simon, M., Houghton, S. M., & Savelli, S. (2003). Out of the frying pan…?: Why small business managers introduce high-risk products. *Journal of Business Venturing, 18*(3), 419–440.

Simons, T. L., & Peterson, R. S. (2000). Task conflict and relationship conflict in top management teams: the pivotal role of intragroup trust. *Journal of Applied Psychology, 85*(1), 102–111.

Sims, H. P., Szilagyi, A. D., & McKemey, D. R. (1976). Antecedents of Work Related Expectancies. *Academy of Management Journal, 19*(4), 547–559.

Singer, E., & Kulka, R. A. (2002). Paying respondents for survey participation. In M. ver Ploeg, Moffit, Robert, A., & C. F. Citro (Eds.), *Studies of Welfare Populations. Data Collection and Research Issues* (pp. 105–128). Washington, D.C.: National Academy Press.

Singh, B., Shaffer, M. A., & Selvarajan, T. T. (2018). Antecedents of organizational and community embeddedness: The roles of support, psychological safety, and need to belong. *Journal of Organizational Behavior, 39*(3), 339–354.

Sitkin, S. B. (1992). Learning through failure: The strategy of small losses. *Research in Organizational Behavior, 14*, 231–266.

Snijders, T. A. B., & Bosker, R. J. (1999). *Multilevel analysis: an introduction to basic and advanced multilevel modeling.* Los Angeles, CA: Sage.

Song, M., Podoynitsyna, K., van der Bij, H., & Halman, J. I. M. (2008). Success factors in new ventures: A meta-analysis. *Journal of Product Innovation Management, 25*(1), 7–27.

Spector, P. E., & Brannick, M. T. (2011). Methodological urban legends: The misuse of statistical control variables. *Organizational Research Methods, 14*(2), 287–305.

Steel, P., & König, C. J. (2006). Integrating theories of motivation. *Academy of Management Review, 31*(4), 889–913.

Steffens, P., Terjesen, S., & Davidsson, P. (2012). Birds of a feather get lost together: new venture team composition and performance. *Small Business Economics, 39*(3), 727–743.

Stenholm, P., Acs, Z. J., & Wuebker, R. (2013). Exploring country-level institutional arrangements on the rate and type of entrepreneurial activity. *Journal of Business Venturing, 28*(1), 176–193.

Stenholm, P., & Renko, M. (2016). Passionate bricoleurs and new venture survival. *Journal of Business Venturing, 31*(5), 595–611.

Stephan, U., & Pathak, S. (2016). Beyond cultural values? Cultural leadership ideals and entrepreneurship. *Journal of Business Venturing, 31*(5), 505–523.

Stewart Jr, W. H., Watson, W. E., Carland, J. C., & Carland, J. W. (1999). A proclivity for entrepreneurship: A comparison of entrepreneurs, small business owners, and corporate managers. *Journal of Business Venturing, 14*(2), 189–214.

Talaulicar, T., Grundei, J., & Werder, A. v. (2005). Strategic decision making in start-ups: the effect of top management team organization and processes on speed and comprehensiveness. *Journal of Business Venturing, 20*(4), 519–541.

Täuscher, K. (2019). Reputation and new venture performance in online markets: The moderating role of market crowding. *Journal of Business Venturing, 34*(6), 105944.

Ter Wal, A. L. J., Alexy, O., Block, J., & Sandner, P. G. (2016). The best of both worlds: The benefits of open-specialized and closed-diverse syndication networks for new ventures' success. *Administrative Science Quarterly, 61*(3), 393–432.

Thagard, P. (2005). *Mind: Introduction to cognitive science* (Vol. 17). Cambridge, MA: MIT press.

Thorsteinson, T. J. (2018). A meta-analysis of interview length on reliability and validity. *Journal of Occupational and Organizational Psychology, 91*(1), 1–32.

Toft-Kehler, R., Wennberg, K., & Kim, P. H. (2014). Practice makes perfect: Entrepreneurial-experience curves and venture performance. *Journal of Business Venturing, 29*(4), 453–470.

Tomassetti, A. J., Dalal, R. S., & Kaplan, S. A. (2016). Is policy capturing really more resistant than traditional self-report techniques to socially desirable responding? *Organizational Research Methods, 19*(2), 255–285.

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

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

Townsend, D. M., Hunt, R. A., McMullen, J. S., & Sarasvathy, S. D. (2018). Uncertainty, knowledge problems, and entrepreneurial action. *Academy of Management Annals, 12*(2), 659–687.

Trizano-Hermosilla, I., & Alvarado, J. M. (2016). Best alternatives to Cronbach's alpha reliability in realistic conditions: congeneric and asymmetrical measurements. *Frontiers in Psychology, 7*, 769.

Tumasjan, A., & Braun, R. (2012). In the eye of the beholder: How regulatory focus and self-efficacy interact in influencing opportunity recognition. *Journal of Business Venturing, 27*(6), 622–636.

Ucbasaran, D., Lockett, A., Wright, M., & Westhead, P. (2003). Entrepreneurial founder teams: Factors associated with member entry and exit. *Entrepreneurship Theory and Practice, 28*(2), 107–128.

Ucbasaran, D., Westhead, P., & Wright, M. (2009). The extent and nature of opportunity identification by experienced entrepreneurs. *Journal of Business Venturing, 24*(2), 99–115.

Uy, M. A., Foo, M.-D., & Aguinis, H. (2010). Using experience sampling methodology to advance entrepreneurship theory and research. *Organizational Research Methods, 13*(1), 31–54.

Uy, M. A., Foo, M.-D., & Ilies, R. (2015). Perceived progress variability and entrepreneurial effort intensity: The moderating role of venture goal commitment. *Journal of Business Venturing, 30*(3), 375–389.

Uy, M. A., Foo, M.-D., & Song, Z. (2013). Joint effects of prior start-up experience and coping strategies on entrepreneurs' psychological well-being. *Journal of Business Venturing, 28*(5), 583–597.

Uy, M. A., Sun, S., & Foo, M.-D. (2017). Affect spin, entrepreneurs' well-being, and venture goal progress: The moderating role of goal orientation. *Journal of Business Venturing, 32*(4), 443–460.

van Dyck, C., Frese, M., Baer, M., & Sonnentag, S. (2005). Organizational error management culture and its impact on performance: a two-study replication. *Journal of Applied Psychology, 90*(6), 1228–1240.

van Eerde, W., & Thierry, H. (1996). Vroom's expectancy models and work-related criteria: A meta-analysis. *Journal of Applied Psychology, 81*(5), 575–586.

Vedovello, C., & Godinho, M. (2003). Business incubators as a technological infrastructure for supporting small innovative firms' activities. *International Journal of Entrepreneurship and Innovation Management, 3*(1-2), 4–21.

Vergauwe, J., Wille, B., Hofmans, J., Kaiser, R. B., & Fruyt, F. D. (2017). The too little/too much scale: A new rating format for detecting curvilinear effects. *Organizational Research Methods, 20*(3), 518–544.

Vilanova, L., & Vitanova, I. (2020). Unwrapping opportunity confidence: how do different types of feasibility beliefs affect venture emergence? *Small Business Economics, 55*(1), 215–236.

vom Holtz, I. (2017). *Drivers and obstacles on the way to the one million dollar business opportunity: The Interplay of human capital and intra-team trust in entrepreneurial team opportunity recognition and selection.* Dissertation, München.

Vroom, V. H. (1964). *Work and motivation.* New York, NY: Wiley.

Vroom, V. H. (1985). Citation classic: Work and motivation. *Current Contents - Social and Behavioral Sciences, 27*, 20.

Wampold, B. E., & Serlin, R. C. (2000). The consequence of ignoring a nested factor on measures of effect size in analysis of variance. *Psychological Methods, 5*(4), 425–433.

Wanberg, C. R., Zhu, J., & van Hooft, E. A. J. (2010). The job search grind: Perceived progress, self-reactions, and self-regulation of search effort. *Academy of Management Journal, 53*(4), 788–807.

Wanous, J. P., Keon, T. L., & Latack, J. C. (1983). Expectancy theory and occupational/organizational choices: A review and test. *Organizational Behavior and Human Performance, 32*(1), 66–86.

Weigold, A., Weigold, I. K., & Russell, E. J. (2013). Examination of the equivalence of self-report survey-based paper-and-pencil and internet data collection methods. *Psychological Methods, 18*(1), 53–70.

Weinberger, E., Wach, D., Stephan, U., & Wegge, J. (2018). Having a creative day: Understanding entrepreneurs' daily idea generation through a recovery lens. *Journal of Business Venturing, 33*(1), 1–19.

Weinzimmer, L. G., & Esken, C. A. (2017). Learning from mistakes: How mistake tolerance positively affects organizational learning and performance. *Journal of Applied Behavioral Science, 53*(3), 322–348.

Welch, C., & Piekkari, R. (2006). Crossing language boundaries: Qualitative interviewing in international business. *Management International Review, 46*(4), 417–437.

Wennberg, K., Delmar, F., & McKelvie, A. (2016). Variable risk preferences in new firm growth and survival. *Journal of Business Venturing, 31*(4), 408–427.

Westhead, P., Ucbasaran, D., & Wright, M. (2005). Experience and Cognition. *International Small Business Journal: Researching Entrepreneurship, 23*(1), 72–98.

Wiklund, J., Nikolaev, B., Shir, N., Foo, M.-D., & Bradley, S. (2019). Entrepreneurship and well-being: Past, present, and future. *Journal of Business Venturing, 34*(4), 579–588.

Williams, D. M. (2010). Outcome expectancy and self-efficacy: theoretical implications of an unresolved contradiction. *Personality and Social Psychology Review, 14*(4), 417–425.

Williamson, A. J., Battisti, M., Leatherbee, M., & Gish, J. J. (2019). Rest, zest, and my innovative best: Sleep and mood as drivers of entrepreneurs' innovative behavior. *Entrepreneurship Theory and Practice, 43*(3), 582–610.

Wilson, F., Kickul, J., & Marlino, D. (2007). Gender, entrepreneurial self-efficacy, and entrepreneurial career intentions: Implications for entrepreneurship education. *Entrepreneurship Theory and Practice, 31*(3), 387–406.

Wiltbank, R., Dew, N., Read, S., & Sarasvathy, S. D. (2006). What to do next? The case for non-predictive strategy. *Strategic Management Journal, 27*(10), 981–998.

Winborg, J., & Landström, H. (2001). Financial bootstrapping in small businesses. *Journal of Business Venturing, 16*(3), 235–254.

Wincent, J., & Örtqvist, D. (2009). A comprehensive model of entrepreneur role stress antecedents and consequences. *Journal of Business and Psychology, 24*(2), 225–243.

Withey, M., Daft, R. L., & Cooper, W. H. (1983). Measures of Perrow's work unit technology: An empirical assessment and a new scale. *Academy of Management Journal, 26*(1), 45–63.

Wood, M. S., McKelvie, A., & Haynie, J. M. (2014). Making it personal: Opportunity individuation and the shaping of opportunity beliefs. *Journal of Business Venturing, 29*(2), 252–272.

Wood, M. S., & Pearson, J. M. (2009). Taken on faith? The impact of uncertainty, knowledge relatedness, and richness of information on entrepreneurial opportunity exploitation. *Journal of Leadership & Organizational Studies, 16*(2), 117–130.

Wood, M. S., Williams, D. W., & Drover, W. (2017). Past as prologue: Entrepreneurial inaction decisions and subsequent action judgments. *Journal of Business Venturing, 32*(1), 107–127.

Woods, K. M., & McNamara, J. R. (1980). Confidentiality: Its effect on interviewee behavior. *Professional Psychology, 11*(5), 714–721.

Wooldridge, J. M. (2013). *Introductory econometrics: A modern approach* (5th ed.). Mason, OH: South-Western Cengage Learning.

Wright, K. B. (2005). Researching Internet-based populations: Advantages and disadvantages of online survey research, online questionnaire authoring software packages, and web survey services. *Journal of Computer-Mediated Communication, 10*(3).

Wright, M., Hoskisson, R. E., Busenitz, L. W., & Dial, J. (2000). Entrepreneurial growth through privatization: The upside of management buyouts. *Academy of Management Review, 25*(3), 591–601.

Wright, M., Robbie, K., & Ennew, C. (1997). Venture capitalists and serial entrepreneurs. *Journal of Business Venturing, 12*(3), 227–249.

Yan, T., Conrad, F. G., Tourangeau, R., & Couper, M. P. (2011). Should I stay or should I go: The effects of progress feedback, promised task duration, and length of questionnaire on completing web surveys. *International Journal of Public Opinion Research, 23*(2), 131–147.

Yang, J., Liu, Y., Zhang, Y., Chen, H., & Niu, F. (2015). Escalation bias among technology entrepreneurs: the moderating effects of motivation and mental budgeting. *Technology Analysis & Strategic Management, 27*(6), 693–708.

Yeniyurt, S., & Townsend, J. D. (2003). Does culture explain acceptance of new products in a country? *International Marketing Review, 20*(4), 377–396.

Yli-Renko, H., Autio, E., & Sapienza, H. J. (2001). Social capital, knowledge acquisition, and knowledge exploitation in young technology-based firms. *Strategic Management Journal, 22*(6-7), 587–613.

CNN (2020). *Should CEOs run two companies at once? A Silicon Valley practice comes under scrutiny.* Retrieved May 27, 2020, from CNN: https://edition.cnn.com/2020/03/04/tech/jack-dorsey-elon-musk/index.html.

Zacharakis, A. L., & Meyer, G.D. (2000). The potential of actuarial decision models. *Journal of Business Venturing, 15*(4), 323–346.

Zahra, S. A., Yavuz, R. I., & Ucbasaran, D. (2006). How much do you trust me? The dark side of relational trust in new business creation in established companies. *Entrepreneurship Theory and Practice, 30*(4), 541–559.

Zand, D. E. (1972). Trust and managerial problem solving. *Administrative Science Quarterly*, 229–239.

Zerbe, W. J., & Paulhus, D. L. (1987). Socially desirable responding in organizational behavior: A reconception. *Academy of Management Review, 12*(2), 250–264.

Zhang, Y., Zhang, Y., Ng, T. W. H., & Lam, S. S. K. (2019). Promotion- and prevention-focused coping: A meta-analytic examination of regulatory strategies in the work stress process. *Journal of Applied Psychology, 104*(10), 1296–1323.

Zhang, Y., Fang, Y., Wei, K.-K., & Chen, H. (2010). Exploring the role of psychological safety in promoting the intention to continue sharing knowledge in virtual communities. *International Journal of Information Management, 30*(5), 425–436.

Zhang, Z.-X., Hempel, P. S., Han, Y.-L., & Tjosvold, D. (2007). Transactive memory system links work team characteristics and performance. *Journal of Applied Psychology, 92*(6), 1722.

Zhao, H., Seibert, S. E., & Hills, G. E. (2005). The mediating role of self-efficacy in the development of entrepreneurial intentions. *Journal of Applied Psychology, 90*(6), 1265–1272.

Zhao, H., Seibert, S. E., & Lumpkin, G. T. (2010). The relationship of personality to entrepreneurial intentions and performance: A meta-analytic review. *Journal of Management, 36*(2), 381–404.

Zhao, Y. L., Libaers, D., & Song, M. (2015). First product success: a mediated moderating model of resources, founding team startup experience, and product-positioning strategy. *Journal of Product Innovation Management, 32*(3), 441–458.

Zheng, Y. (2012). Unlocking founding team prior shared experience: A transactive memory system perspective. *Journal of Business Venturing, 27*(5), 577–591.

Zheng, Y., Devaughn, M. L., & Zellmer-Bruhn, M. E. (2016). Shared and shared alike? Founders' prior shared experience and performance of newly founded banks. *Strategic Management Journal, 37*(12), 2503–2520.

Zhu, Y.-Q., Gardner, D. G., & Chen, H.-G. (2018). Relationships between work team climate, individual motivation, and creativity. *Journal of Management, 44*(5), 2094–2115.

Zimmerman, B. J., Bandura, A., & Martinez-Pons, M. (1992). Self-motivation for academic attainment: The role of self-efficacy beliefs and personal goal setting. *American Educational Research Journal, 29*(3), 663–676.

Zott, C., & Huy, Q. N. (2007). How entrepreneurs use symbolic management to acquire resources. *Administrative Science Quarterly, 52*(1), 70–105.