



TECHNISCHE UNIVERSITÄT MÜNCHEN

Lehrstuhl für Entrepreneurship

## **Entrepreneurial Greed**

A longitudinal examination of the impact of entrepreneurial greed on explorative behavior and on unethical pro-organizational behavior

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Vollständiger Abdruck der von der Fakultät für Wirtschaftswissenschaften der Technischen Universität München zur Erlangung des akademischen Grades eines Doktors der Wirtschaftswissenschaften (Dr. rer. pol.) genehmigten Dissertation.

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Die Dissertation wurde am 16.04.2021 bei der Technischen Universität München eingereicht und durch die Fakultät für Wirtschaftswissenschaften am 15.06.2021 angenommen.

## Acknowledgements

The successful completion of this dissertation was only possible thanks to the support and contributions of others. Therefore, I would like to express my gratitude to those who accompanied me on this way.

First and foremost, I would like to express my deepest gratitude to my supervisors Prof. Dr. Dr. Holger Patzelt and Prof. Dr. Nicola Breugst. From the very first day of my PhD, you made me feel welcome at the Entrepreneurship Research Institute. From day one, you were always approachable and showed continuous commitment. Through the pleasant cooperation with you, I have not only learned a lot but also had a great, enjoyable time. Also, I would like to express my gratitude to Prof. Dr. Mirjam Knockaert. You were always very supportive and our numerous meetings were always very convenient. Writing a paper with all three of you was exciting, pleasant and, in total, a great experience and an honor to me.

I would also like to thank my colleagues from the BEST team, Max Haase, Carolin Feldmeier, and Aishwarya Kakatkar. Beyond all scientific work and discussions, this was a unique experience, very insightful, and great fun. Only due to our great effort and team work it was possible to conduct such a large-scale, multi-faceted research project. My deepest gratitude goes also to our participants who sacrificed a lot of time for our study and provided us with their great insights. Your effort represents the cornerstone of our work. Thank you very much!

This extends to my colleagues from the Entrepreneurship Research Institute, Xian Xu, Stefanie Federl, Alexandra Mittermaier, David Reetz, Eva Weissenböck, Lina Reypens, David Huber, Petteri Leppänen, Kristina Koch, Harald Leibinger, Benedikt Seigner, Rose Sattari, Rebecca Preller, Johannes Rosenberger, Lora Koycheva, Anne Tryba, Carmen Baur, Anna Wagenschwanz, Madeleine Kutschbach, Wiebke Gerdelmann-Schwer, and Dorit Funk. Thank you very much for the great time including numerous joint lunches, coffee chats, skiing trips, and Christmas market visits!

Moreover, I want to thank all the great people that I met at UnternehmerTUM, particularly Stefan Drüssler, Prof. Dr. Helmut Schönenberger, Yvonne Briese, Carina Hüttner, Nina Käser, Julia Greßler, Andrea Koch, Bettina Scheibe, as well as all the Knowledge Champions and Guild Coordinators that I regularly approached. You introduced me to the unique entrepreneurial ecosystem and provided a great counterbalance to my academic work.

Furthermore, I like to thank all the outstanding scholars that I met. In particular I like to thank Prof. Dr. Oliver Alexy and Prof. Dr. Hana Milanov for their precise feedback and enjoyable

chats on the corridors of our institute, Prof. Dr. Hanna Hottenrott for equipping me with the statistical know-how to analyze my data and for chairing my dissertation committee, Prof. Dr. Miriam Bird for being part of my dissertation committee, Prof. Denis Grégoire, PhD for introducing me to entrepreneurial cognition, Prof. Dr. Christoph Fuchs for preparing me for scholarly publications, Prof. Chuck Eesley, PhD for providing me with new insights on entrepreneurship research, and Prof. Dr. Frank-Martin Belz for introducing me to qualitative research.

Finally, my deepest gratitude goes to my family, friends, and my partner. Thank you for your great support during my PhD. Last but not least, I like to express my gratitude to Knorr-Bremse AG and, in particular, Heinz Hermann Thiele for their generous support enabling Max Haase's and my research positions and to the Cusanuswerk for supporting me on my academic journey.

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## List of abbreviations

CES	Coefficient of equivalence and stability
CFA	Confirmatory Factor Analysis
CFI	Comparative Fit Index
CI	Confidence Interval
df	Degrees of freedom
DV	Dependent variable
EEG	Electroencephalogram
Exp.	Experience
HLM	Hierarchical linear model
LR	Likelihood Ratio test
Max.	Maximal value
Min.	Minimal value
Obs.	Observations
PR	Participation rate
PSED	Panel Study of Entrepreneurial Dynamics
RMSEA	Root Mean Square Error of Approximation
RR	Registration rate
SD	Standard deviation
TLI	Tucker-Lewis Index
TUM	Technical University of Munich
UPB	Unethical pro-organizational behavior
USD	United States dollar

## **Abstract**

After the financial crisis of the late 2000s, scholars from various fields intensified research on greed. Although academic research indicates that greed may play a particularly important role in new ventures and although recent entrepreneurial scandals point to the need for better understanding greed in entrepreneurial contexts, entrepreneurship scholars surprisingly have largely disregarded to analyze greed. In order to enhance our understanding of greed's role in entrepreneurial ventures, this dissertation examines how greed influences entrepreneurs' behavior and to what extent these effects depend on the specific characteristics of the entrepreneurs' situation. In particular, this dissertation analyzes the relationship between entrepreneurs' greed and their explorative behavior contingent on situational strength and the relationship between entrepreneurs' greed and unethical pro-organizational behavior contingent on factors influencing the entrepreneurs' self-control.

Based on quantitative data from 233 entrepreneurs nested 111 entrepreneurial teams in Germany, this dissertation finds that entrepreneurs high in greed tend to engage in greed-specific behavior only in certain situations. Specifically, greedy entrepreneurs engage in explorative behavior in weak situations, i.e., when they have comparably low cognitive trust towards team members, and, although sensitive to model specification and only marginally significant, when they have comparably low industry experience and work in a comparably small venture. Moreover, greedy entrepreneurs engage in unethical pro-organizational behavior, reprehensible behavior aimed to support the organization, when their self-control is low, which is particularly the case when cognitive trust towards their teammates is comparably low and affective trust towards their teammates is comparably high.

These findings provide important insights to entrepreneurial research, research on greed in organizations, and psychological theory. Particularly, they point to the need for examining dark personality traits in entrepreneurial contexts, reveal the potentially dark role of trust in entrepreneurial teams, and shed light on the distinct role of unethical pro-organizational behavior in entrepreneurial ventures. Moreover, the findings show that greed in organizational context is not necessarily short-term oriented, that team members take an important role in promoting or preventing greedy behavior, and that greed works differently in entrepreneurial ventures than in established organizations. Finally, this dissertation reveals important findings for psychological theory on greed.

*Keywords:* Entrepreneurial greed, explorative behavior, unethical pro-organizational behavior, situational strength theory, self-control theory, cognitive trust, affective trust, industry experience, venture size, new ventures, startups.

## **Zusammenfassung**

Nach der Finanzkrise in den späten 2000er Jahren intensivierten Wissenschaftlerinnen und Wissenschaftler aus verschiedenen Bereichen die Forschung zu Gier. Obwohl es verschiedene Hinweise aus der akademischen Forschung gibt, dass Gier eine besonders wichtige Rolle bei Start-ups spielen könnte und obwohl jüngere Skandale bei Start-ups auf die Notwendigkeit eines besseren Verständnisses von Gier in jungen Unternehmen hinweisen, haben Entrepreneurship-Wissenschaftler überraschenderweise die Forschung zu Gier weitgehend vernachlässigt. Um unser Verständnis der Rolle von Gier in Start-ups zu verbessern, untersucht diese Dissertation, wie Gier das Verhalten von Gründenden beeinflusst und inwieweit diese Effekte von situativen Begebenheiten der Gründenden abhängen. Insbesondere analysiert diese Dissertation die Beziehung zwischen der Gier von Gründenden und ihrem explorativen Verhalten in Abhängigkeit von der Situationsstärke und die Beziehung zwischen der Gier von Gründenden und unethischem pro-organisatorischem Verhalten (verwerfliches Verhalten, das darauf abzielt, die Organisation zu unterstützen) in Abhängigkeit von Faktoren, die die Selbstkontrolle der Gründenden beeinflussen.

Basierend auf quantitativen Daten von 233 Gründenden aus 111 Gründungsteams in Deutschland zeigt diese Dissertation, dass Gründende mit hoher Gier nur in bestimmten Situationen gieriges Verhalten zeigen. Insbesondere zeigen gierige Gründende exploratives Verhalten in schwachen Situationen, d.h. wenn sie vergleichsweise geringes kognitives Vertrauen gegenüber Teammitgliedern haben, und, obwohl sensitiv bezüglich der Modellspezifikationen und nur marginal signifikant, wenn sie vergleichsweise geringe Branchenerfahrung haben und in einem eher kleinen Unternehmen arbeiten. Darüber hinaus zeigen gierige Gründende unethisches pro-organisatorisches Verhalten, wenn ihre Selbstkontrolle niedrig ist. Dies ist insbesondere dann der Fall, wenn das kognitive Vertrauen gegenüber Teamkollegen vergleichsweise niedrig und das affektive Vertrauen gegenüber Teamkollegen vergleichsweise hoch ist.

Diese Ergebnisse liefern wichtige Erkenntnisse für die Entrepreneurship-Forschung, die Forschung zu Gier in Organisationen und die psychologische Theorie. Insbesondere weisen sie auf die Notwendigkeit hin, dunkle Persönlichkeitsmerkmale in unternehmerischen Kontexten zu untersuchen, zeigen die potentiell dunkle Rolle von Vertrauen in Gründungsteams auf und beleuchten die besondere Rolle von unethischem pro-organisatorischem Verhalten in Start-ups. Darüber hinaus zeigen die Ergebnisse, dass Gier im organisatorischen Kontext nicht unbedingt

kurzfristig orientiert ist, dass Teammitglieder eine wichtige Rolle bei der Förderung oder Verhinderung von gierigem Verhalten einnehmen und dass Gier in jungen Start-ups anders funktioniert als in etablierten Organisationen. Außerdem ergeben sich daraus wichtige Erkenntnisse für die psychologische Theorie zu Gier.

*Schlagwörter:* Gier von Gründenden, exploratives Verhalten, unethisches pro-organisatorisches Verhalten, Situationsstärke-Theorie, Selbstkontrolltheorie, kognitives Vertrauen, affektives Vertrauen, Branchenerfahrung, Unternehmensgröße, junge Unternehmen, Start-ups.

## 1. Introduction

At the age of 19, Elizabeth Holmes dropped out of Stanford to start her own new venture called Theranos. Theranos developed a blood-testing device that was meant to run hundreds of tests only from a tiny drop of blood. The company grew and was able to raise more than USD 400 million from external investors. Ten years after foundation, in 2013 and 2014, Theranos reached a valuation of USD 9 billion and founder Elizabeth Holmes became the world's youngest female self-made billionaire (Gibney, 2019; Ramsey, 2018).

In 2015, however, the company and its founder experienced a tremendous turning point in their incredible success story. As the Wall Street Journal published a story questioning Theranos's technology (Carreyrou, 2015) and federal as well as state authorities initiated investigations on Theranos, it turned out that the device was not capable of what the founders had promised. It became obvious that Elizabeth Holmes and her team published wrong information and lied several times to different stakeholders. One remarkable example stems from events in Theranos's offices where Theranos presented their device. In these occasions, they took blood of test participants from the audience. Pretending that their device currently conducts the blood tests, they invited their visitors to a tour of Theranos's office. During this tour, instead of the device conducting the analysis, Theranos employees had to conduct the analysis in a laboratory, or, in case the tiny drop of blood was not enough to perform a test, had to fake the results. After the tour, they presented the "results" to their participants. While this is only one example of Theranos and its managers tricking external stakeholders, there were several indications that prompted the media as well as public authorities to engage in investigations on Theranos (Gibney, 2019; Ramsey, 2018). As a result to the investigations, Theranos ceased operations in September 2018 and founder Elizabeth Holmes faces trial in early 2021.

Whereas the media prominently describes Theranos's story as a story of greed (e.g., Caplan, 2016; Cohen, 2015; Lyons, 2019), from an academic perspective we know very little about greed and its consequences in entrepreneurial ventures. Indeed, while scholars from various disciplines intensified their research on greed after the financial crisis of the late 2000s, it is time that entrepreneurship scholars, too, engage in research on greed. The Theranos story spectacularly demonstrates the need for research on greed in entrepreneurial settings.

## **1.1 Motivation for research on greed**

As greed has been prominently attributed an important role in the financial crisis of the late 2000s, scholars from multiple fields including psychology, economics, and management have intensified their research on greed (Haynes, Hitt, & Campbell, 2015; Seuntjens, Zeelenberg, van de Ven, & Breugelmans, 2015; Wang & Murnighan, 2011). Specifically, they reached a conclusion in defining greed as an excessive and insatiable striving for material and immaterial desires (Krekels & Pandelaere, 2015; Lambie & Haugen, 2019; Seuntjens, Zeelenberg, van de Ven, et al., 2015) and conceptualized it as a state that translates into behavior contingent on situational factors (Lambie & Haugen, 2019; Mussel, Reiter, Osinsky, & Hewig, 2015). Since greed represents a source of motivation, some research states that the behavioral outcome of greed may be positive to organizations and the society alike (Bruhn & Lowrey, 2012; Seuntjens, Zeelenberg, Breugelmans, & Ven, 2015). The vast majority, however, highlights the mostly negative consequences of greed (Haynes, Hitt, et al., 2015; Lambie & Haugen, 2019; Mussel & Hewig, 2016; Seuntjens, Zeelenberg, van de Ven, & Breugelmans, 2019). Indeed, scholars point out that greed may have severe negative consequences including a major role in corporate scandals like Enron's audit scandal (Levine, 2005), Volkswagen's emissions scandal (Haynes, Josefy, & Hitt, 2015a), as well as in the late 2000s global financial crisis (Seuntjens, Zeelenberg, van de Ven, et al., 2015; Wang & Murnighan, 2011).

However, irrespective of the potentially negative consequences of greed, entrepreneurship scholars have disregarded to investigate greed in entrepreneurial contexts. This is surprising because entrepreneurs actually tend to be greedier than non-entrepreneurs (Djankov, Yingyi, Roland, & Zhuravskaya, 2006). It is even more surprising against the background that greed may have particularly far-reaching consequences in entrepreneurial ventures because entrepreneurs' personality characteristics do not only impact their own behavior (Epstein & O'Brien, 1985; Mischel, 1977; Rauch & Frese, 2007) and venture performance (Gupta & Mui, 2013; Zhao, Seibert, & Lumpkin, 2010), but also the entire organization's culture (Kets de Vries & Miller, 1984; Schein, 1983) and, consequently, the behavior of potentially many more individuals like the entrepreneurial team members, employees, customers, or investors.

Furthermore, it seems particularly important to conduct research on greed in entrepreneurial settings because findings from other contexts like established organizations, may not be transferable to the entrepreneurship context. First, the outcomes of entrepreneurs' greed are likely to differ from the outcomes of the greed of managers in established organizations. Whereas greedy managers tend to prioritize their own goals at the costs of the organizational goals

and exploit their organizations (Haynes, Campbell, & Hitt, 2017; Haynes, Josefy, & Hitt, 2015b), greedy entrepreneurs' interests are closely linked to their ventures' interests (Bird & Jelinek, 1989; Ruvio, Rosenblatt, & Hertz-Lazarowitz, 2010; Townsend, DeTienne, Yitshaki, & Arthurs, 2009) and therefore, their actions should rather serve the purpose of their organizations. Second, the situational factors that prevent or facilitate the translation of entrepreneurs' greed into greedy behavior are likely to be different from those of managerial greed. Research on established organizations points to the important role of the work environment for determining whether greed translates into greed-specific behavior or not. Specifically, managers are more likely to act greedily when managerial discretion is high, when the power of the board is low (Haynes et al., 2017), and when the organizational culture is rather individualistic (Bruhn & Lowrey, 2012). In entrepreneurial ventures, formal control mechanisms (like a supervisory board) are usually not yet in place and the organizational culture is just emerging. Therefore, other factors may facilitate or prevent the emergence of entrepreneurs' greedy behavior, such as the entrepreneurs' experiences, the entrepreneurial team members, and the characteristics of the venture.

## **1.2 Focus of this dissertation**

The purpose of this dissertation is to study *to what extent greed influences entrepreneurs' behavior and to what extent these effects depend on the specific characteristics of the entrepreneurs' situation*. As such, this dissertation analyzes two behavioral outcomes of greed, explorative behavior and unethical pro-organizational behavior, contingent on situational conditions. The analysis bases on a sample of 233 entrepreneurs in Germany, nested in 111 entrepreneurial teams. I gathered the data at two points in time with a time lag of 3 months.

### **1.2.1 Overview of findings**

My analysis concludes that greed positively relates to explorative behavior, "captured by terms such as search, variation, risk taking, experimentation, play, flexibility, discovery, innovation" (March, 1991, p. 71) contingent on situational strength. Situational strength refers to "implicit or explicit cues provided by external entities regarding the desirability of potential behaviors" (Meyer, Dalal, & Hermida, 2010, p. 122). In strong situations, these implicit and explicit cues provide clear guidelines on how to behave and thus, individuals tend to behave rather similarly following these external guidelines and less their personality traits. Weak situations, in contrast,

are ambiguously structured and individuals act differently contingent on their personality characteristics (Judge & Zapata, 2015; Meyer et al., 2010). Compared to settings in established organizations (Davis-Blake & Pfeffer, 1989), I argue that entrepreneurial settings generally represent rather weak situations because work is less structured (Stewart Jr., Watson, Carland, & Carland, 1999), more multifaceted and less consistent (Schjoedt, 2009), conducted more autonomously (Schjoedt, 2009), and one single wrong decision among multiple decisions (Busenitz & Barney, 1997) has less severe consequences. Moreover, I specify situations to be particularly weak when an entrepreneur has rather low industry experience, low cognitive trust towards team members, and works in a comparably small venture. While my results show that there is no statistically significant positive relationship between greed and explorative behavior across situations, all three facets of situational strength do affect the emergence of greedy entrepreneurs' explorative behavior, although the impact of industry experience and venture size on the relation between greed and explorative behavior is sensitive to model specification and only marginally significant.

Further, I find that greed positively relates to unethical pro-organizational behavior, "actions that are intended to promote the effective functioning of the organization or its members (e.g., leaders) and violate core societal values, mores, laws, or standards of proper conduct" (Umphress & Bingham, 2011, p. 622) contingent on greedy entrepreneurs' self-control. The hot/cool systems approach of self-control indicates that individuals engage in self-control contingent on the balance of their hot and cool systems of decision making (Metcalf & Mischel, 1999). While the cool system of decision making is defined as reflective and cognitive, the hot system is rather reflexive and emotional (Metcalf & Mischel, 1999) and associated with desires (Hoch & Loewenstein, 1991). Because greedy entrepreneurs have particularly strong desires (Seuntjens et al., 2019), I argue that their hot system is more likely to outperform the cool system. Moreover, I reason that cognitive trust towards team members adds to the cool, cognitive system of decision making and, thus, prevents the emergence of greedy entrepreneurs' unethical pro-organizational behavior. Affective trust, in contrast, adds to the hot system of decision making and, accordingly, promotes the emergence of unethical pro-organizational behavior. My results show that there is no statistically significant positive relationship between greed and unethical pro-organizational behavior across situations. However, when having comparably low cognitive trust or high affective trust towards team members, greedy entrepreneurs are more likely to engage in unethical pro-organizational behavior.

### 1.2.2 Overview of contributions and implications

Analyzing two different behavioral outcomes of greed contingent on two different theoretical approaches and sets of moderating variables in an entrepreneurial setting provides some important insights for entrepreneurship research, and research on greed in organizations. Additionally, my dissertation contributes to psychological theory. In the following, I outline this dissertation's contributions. In the discussion part (Chapter 5), I present the contributions of this dissertation in more detail.

First and foremost, this dissertation adds to the *entrepreneurship literature*. My dissertation challenges entrepreneurship scholars' prevailing tendency to predominantly analyze bright side personality characteristics (Baum & Locke, 2004; Utsch & Rauch, 2000; Yan, 2010). Specifically, I show that traits from the dark side of personality, like greed, affect entrepreneurs' behavior and, importantly, may work differently in entrepreneurial ventures than in established organizations. Moreover, I identify important insights for research on trust in entrepreneurial settings. As such, I add to studies on the potentially dark role of trust in entrepreneurial settings (Goel & Karri, 2006; Kautonen, Zolin, Kuckertz, & Viljamaa, 2010; Welter, 2012). While those extant studies find that trust may play a dark role in relationships between entrepreneurs and external stakeholders, my dissertation shows that trust may also play a negative role in entrepreneurial teams. Notably, the roles of the two dimensions of trust, cognitive and affective trust (Holste & Fields, 2010; McAllister, 1995), are considerably different. This dissertation also adds to literature on explorative behavior in entrepreneurial contexts. I find that greed is an important antecedent of explorative behavior and that situational strength impacts whether entrepreneurs high in greed engage in explorative behavior or not. Since entrepreneurs should not always engage in explorative behavior (e.g., Choi, Lévesque, & Shepherd, 2008; Ireland & Webb, 2009; Parida, Lahti, & Wincent, 2016), these findings have important implications for scholars and practitioners alike. In addition, this dissertation adds to emerging research on unethical pro-organizational behavior in entrepreneurial ventures. It highlights that beyond research on unethical pro-organizational behavior in established organizations, the entrepreneurial context with its specific allocation of entrepreneurs' and ventures' interests provides an intriguing ground for future research on unethical pro-organizational behavior. Specifically, my results indicate that promoting factors of unethical pro-organizational behavior and results of unethical pro-organizational behavior are specific to the analyzed context, and transfers of insights from one context to the other should be taken with caution.

Second, I add to *literature on greed in organizations*. My findings challenge the prevailing view on greed as being short-term oriented (Haynes, Josefy, et al., 2015b; Seuntjens, van de Ven, Zeelenberg, & van der Schors, 2016). I propose a more nuanced view on greed's short-term orientation as my findings indicate that entrepreneurs primarily try to fulfill their greedy desires – whether they have to wait longer or shorter for the fulfillment of their desires plays a subordinate role. Furthermore, I point to the important role team members may play in the facilitation or prevention of greedy behavior. As I show, the team environment impacts the translation of greed into explorative behavior and unethical pro-organizational behavior. Finally, my findings reveal that greed works differently in entrepreneurial ventures compared to established organizations. That is, due to well-aligned interests of the entrepreneur and the venture (Bird & Jelinek, 1989; Ruvio et al., 2010; Townsend et al., 2009), greedy entrepreneurs act rather pro-organizational and not against the organizations' interests as managers in established organizations tend to do (Haynes et al., 2017; Haynes, Josefy, et al., 2015b).

Third, and in addition to the contributions to entrepreneurship literature and literature on greed in organizations, I contribute to the *psychological theory* on greed. As such, I add to discussions regarding the conceptualization of greed. My findings back the most recent opinion that greed is a trait with a situational component (Lambie & Haugen, 2019). Furthermore, my findings contribute to the discussion on whether greed is per se immoral (Lambie & Haugen, 2019; Mussel & Hewig, 2016) or whether immoral behavior is just one potential outcome of greed (Bruhn & Lowrey, 2012; Hill & Cassill, 2004; Seuntjens, Zeelenberg, van de Ven, et al., 2015).

### **1.3 Structure of this dissertation**

Having introduced my motivation for research on greed and the focus of this dissertation, I now present the structure of this dissertation. Moreover, as this dissertation builds on scientific work that I have conducted during my time as PhD student at the Chair for Entrepreneurship at the Technical University of Munich, I like to comment on the scientific work this dissertation builds upon.

In Chapter 2, I present the theoretical foundations of my research. At the beginning of this chapter, I introduce the construct greed (section 2.1). Thereafter, I provide the theoretical foundations on which the relationship between greed and explorative behavior builds on, hereby addressing situational strength theory and factors that affect entrepreneurs' perceived situational strength (section 2.2). Finally, I concentrate on the theoretical foundations

explaining the relationship between greed and unethical pro-organizational behavior, presenting self-control theory and factors that impact entrepreneurs' self-control (section 2.3).

Chapter 3 deals with the methodological approach of my dissertation. As such, I demonstrate the setup of the BEST study, a quantitative and qualitative data collection that I conducted together with three PhD-candidates at the Entrepreneurship Research Institute of the Technical University of Munich (section 3.1). Then, I provide a description of our sample (section 3.2) and highlight the measures that I use to capture data on my constructs (section 3.3). And finally, I present the approach of my statistical analyses (section 3.4).

Chapter 4 includes the results of my analyses. At first, I provide the descriptive statistics (section 4.1). Second, I present the results for the model that analyzes the relationship between greed and explorative behavior (section 4.2). Third, I present the results of the model on the relationship between greed and unethical pro-organizational behavior (section 4.3).

Chapter 5 contains the discussion of my research. As such, it includes a part on the theoretical contributions (section 5.1). Next to theoretical contributions, I also present practical implications of my research (section 5.2). Afterwards, I point out some limitations of this dissertation (section 5.3). And finally, I conclude on my research and provide some avenues for future research (section 5.4).

This dissertation builds on research that I have conducted during my time as PhD student at the Chair for Entrepreneurship at the Technical University of Munich. The research includes an unpublished review on greed that I wrote between February 2019 and May 2019 in order to meet the requirements of enrollment. While writing the review helped me to better grasp research on greed and identify important sources, I did not transfer parts of the review into the dissertation. Moreover, I worked on an unpublished paper on the relationship between greed and explorative behavior and received feedback on this paper by Professor Holger Patzelt (Technical University of Munich) and Professor Mirjam Knockaert (Ghent University). Parts of this study can be found in this dissertation, specifically in sections 2.2, and 4.2, as well as in Chapter 5. Finally, I worked on a paper on the relationship between greed and unethical pro-organizational behavior. This study under the title "Greed and entrepreneurs' unethical pro-organizational behavior in founding teams" has been submitted to the Journal of Management on 24<sup>th</sup> September 2020. In this paper, I take the role as first author and am co-authoring with Professor Mirjam Knockaert (Ghent University), Professor Holger Patzelt (Technical University of Munich), and Professor Nicola Breugst (Technical University of Munich). The data this paper builds upon stems from the data collection that I conducted together with three

other PhD students at the Cahir for Entrepreneurship (see 3.1). Moreover, I conducted the statistical analysis, proposed theoretical argumentations, and prepared each part of the paper. I engaged in productive discussions with my co-authors and reviewed and implemented their valuable feedback. Parts of this study can be found in this dissertation, particularly in section 2.3, but also in section 4.3, and in Chapter 5.

Besides, I presented work at two conferences. First, I presented on “Entrepreneurial greed and trust in new venture teams” at the G-Forum 2019, an annual interdisciplinary conference on entrepreneurship, innovation and SMEs, in September 2019 in Vienna, Austria. Second, I presented on “When does entrepreneurial greed lead to unethical pro-organizational behavior?” at the G-Forum 2020, which took place in October 2020 in a remote setting due to the Corona pandemic.

## **2. Theoretical foundations**

This chapter contains the theoretical foundations of my dissertation. In my dissertation, I focus on the construct greed. Accordingly, I first introduce the construct in section 2.1. Thereafter, I provide the theoretical foundations for two models that I analyze in order to get a better understanding of greed in an entrepreneurial context. The first model describes the relationship between entrepreneurs' greed and explorative behavior (section 2.2). The second model analyzes the relationship between entrepreneurs' greed and unethical pro-organizational behavior (section 2.3).

### **2.1 Greed**

Greed is an ancient construct that is deep-rooted in mankind. For instance, it is a central element in various religions: Greed is one (if not the most central) of the seven sins in Christianity (Tickle, 2004) and one of three causes for suffering in Buddhism (Olendzki, 2003). Moreover, greed has always been a central element in economics (Lambie & Haugen, 2019; Wang, Malhotra, & Murnighan, 2011). But at the same time, research on greed had been underdeveloped for a long time.

Yet, the financial crisis of the late 2000s represents a turning point in research on greed. After this financial crisis, research on greed gained importance in various disciplines. This crisis started as a crisis in the US subprime mortgage market in 2007. It quickly spread over large parts of the world and developed into an international banking crisis. It affected huge parts of the world population as it did not only lead to major losses for investors but also to tremendous public expenditures and high unemployment in many countries. For many scholars from diverse disciplines, the major cause for the outbreak and spread of the crisis was greed of various players in the market like real estate agents, bankers, or investors (e.g. Kirchgässner, 2014; Lambie & Haugen, 2019). Hence, scholars intensified their research on greed.

In the context of this dissertation, research on greed in psychology and organizational settings is predominantly important. After the financial crisis, particularly psychology scholars have invested great effort and significantly contributed to the multidisciplinary debate on greed by analyzing and defining the construct (e.g., Krekels & Pandelaere, 2015; Seuntjens, Zeelenberg, Breugelmans, et al., 2015). Moreover, psychology scholars developed measures to reliably assess greed (e.g., Krekels, 2015; Mussel et al., 2015; Seuntjens, Zeelenberg, van de Ven, et

al., 2015) and started to analyze the relation of greed towards other constructs (e.g., Belle & Cantarelli, 2017; Mussel & Hewig, 2016; Seuntjens et al., 2019).

Already before the financial crisis, a few organizational researchers linked organizational scandals like at Enron, a major audit scandal in the United States (Levine, 2005), to greed and analyzed greed in organizational contexts (Djankov et al., 2006; Lu, Leung, & Koch, 2006). However, only with the experience of the financial crisis and with the availability of a more solid definition of greed, organizational research on greed has gained importance. As such, organizational scholars have contributed organization-specific aspects to the definition of greed (Haynes et al., 2017) and have started to investigate outcomes of greed (e.g., Haynes, Josefy, et al., 2015b; Zhu, Sun, Liu, & Xue, 2019).

In 2.1.1, I present definitions and conceptualizations of greed. In this approach I also go into similarities and differences in the definitions and conceptualizations of greed to finally disclose the definition of greed that I use in this dissertation. In 2.1.2, I present the antecedents of greed that psychology and organizational scholars have identified. And in 2.1.3, I outline outcomes of greed.<sup>1</sup>

### **2.1.1 Definition and conceptualization of greed**

After the financial crisis of the late 2000's, the construct greed moved more into the focus of the public and gained the interest of scholars from various fields. At that time, however, there was no shared definition of greed (Wang & Murnighan, 2011). In order to fill that gap, particularly psychology scholars engaged subsequently in defining the construct. Nevertheless, also scholars from organizational sciences participated in the discussion adding organization-specific aspects.

For instance, Krekels and Pandelaere (2015, p. 225) define greed as “an insatiable desire for more resources, monetary or other”. For Seuntjens, Zeelenberg, van de Ven, et al. (2015, p. 928), greed is “the dissatisfaction of not having enough, combined with the desire to acquire more”. And Lambie and Haugen (2019, p. 34) propose that greed is a “desire to acquire more than one has or retain what one has at all costs, and the discontentment of never having enough, including a desire for things that one values consisting of material things (e.g., money, wealth, clothes, technology) or non-material things (e.g., time, acceptance, sex, power)”.

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<sup>1</sup> As mentioned in the introduction (see 1.3), parts of the content on greed (2.1) are informed by an unpublished review on greed that I wrote between February and May 2019 in order to meet the requirements for enrollment.

From these definitions it is apparent, that scholars agree on central elements that define greed. In the following I will go into detail on similarities in greed definitions. After having provided the similarities in greed definitions, I present aspects where researchers do not yet agree and on which they are currently debating. Based on this information, I provide the definition of greed that I use in this dissertation and explain my decision.

### *Similarities in greed definitions*

Above-mentioned definitions indicate that scholars agree on three defining elements of greed. First, greed is a *striving for material desires and immaterial desires* (Krekels & Pandelaere, 2015; Lambie & Haugen, 2019; Seuntjens, Zeelenberg, van de Ven, et al., 2015). Thus, greedy individuals do not only strive for money or luxury goods but also for status, fame, and recognition. Nevertheless, asking participants to name features of greed and to evaluate the importance of these features for the construct, Seuntjens, Zeelenberg, Breugelmans, et al. (2015) find that materialistic desires are more central to the construct than non-materialistic desires. This is in line with findings of management scholars who state that in managerial contexts material desires are most relevant (Haynes et al., 2017).

Second, this striving for material and immaterial desires is *insatiable*. Scholars either refer directly to this insatiability calling greed an “insatiable desire” (Krekels & Pandelaere, 2015, p. 225) or indirectly by defining greed as a “dissatisfaction of not having enough” (Seuntjens, Zeelenberg, van de Ven, et al., 2015, p. 928) or a “discontentment of never having enough” (Lambie & Haugen, 2019, p. 34). This indicates that individuals high in greed who have acquired or gained what they desired, immediately start to look for the next desire.

And third, scholars agree that greed is *excessive* (e.g., Lambie & Haugen, 2019; Mussel et al., 2015; Seuntjens, 2016; Seuntjens et al., 2019). While Sievers (2012) sees greed even like a mental illness, scholars in general agree that greed refers not to simply desiring something but to an excessive desiring. However, it remains unclear where excessiveness begins. Note that Krekels and Pandelaere (2015, p. 225) eliminate the element of excessiveness from their definition due to “potential concerns for scale development”. This is problematic as a scale should measure a defined construct and should not impact a construct’s definition. In sum, there is agreement on greed being a striving for material and immaterial desires that is insatiable and excessive.

### *Differences in greed definitions and ongoing debates*

Despite these similarities, scholars have different opinions on other aspects of greed. Whereas most scholars agree that greed does not only encompass an *acquisition* component but also a *retention* component (Krekels, 2015; Levine, 2005; Seuntjens, 2016), there is an ongoing discussion on the relative importance of the two components (Lambie & Haugen, 2019). For Krekels (2015), the retention motive is equally important as the acquisition component. She finds that greed positively relates to loss aversion, indicating that greedy individuals try to retain what they have. Similarly, she finds that individuals high in greed are more willing to buy insurances. Nevertheless, she states that the relative importance of the acquisition and the retention component is contingent on the environment's competition. In a highly competitive environment, acquisition is more central to greed. In a decently competitive environment, retention seems to play a more central role (Krekels, 2015). Seuntjens (2016) agrees that greed may encompass a retention component. But in contrast to Krekels (2015), she argues that the retention component is not as important as the acquisition component. This is in line with findings that greedy individuals tend to spend their money and have more debt rather than to save it (Seuntjens et al., 2016). Thus, scholars agree that greed encompasses a retention component, but they do not agree on the relative importance of this component compared to the acquisition component.

Scholars further debate about the *morality* of greed. Specifically, scholars discuss whether a negative impact on others is part of the construct (Lambie & Haugen, 2019; Mussel & Hewig, 2016) or whether it is the consequences of greed that may have a negative impact on others (Bruhn & Lowrey, 2012; Hill & Cassill, 2004; Seuntjens, Zeelenberg, van de Ven, et al., 2015). For Mussel and Hewig (2016, p. 58), greed implies a "callousness or ruthlessness" and, therefore, is morally reprehensible. Other scholars agree that greed may lead to unethical behavior which may be both illegal or legal from a juridical perspective (Seuntjens, Zeelenberg, Breugelmans, et al., 2015; Wang & Murnighan, 2011). Though, they argue that this unethical behavior is not an integral part of the definition of greed but more a potential consequence of greed. For instance, Hill and Cassill (2004) analyze the impact of greed from an evolutionary perspective and find that individuals high in greed engage more in stockpiling behavior than individuals low in greed. The impact on others, however, is contingent on resource availability. In times of sufficient resources, greed of individuals is benign as the storing happens not at the cost of others. In times of resource scarcity, greed of individuals is malignant as the storing harms others (Hill & Cassill, 2004). Similarly, Seuntjens, Zeelenberg, van de Ven, et al. (2015,

p. 929) argue that the negative consequences for others depend on the situation: in situations where greedy individuals' behavior affects the outcomes of others, greed may harm others; in situations without interdependencies, "greed can actually be beneficial". In line with that, Bruhn and Lowrey (2012) state that in organizational contexts, too, it depends on situational factors whether the consequences of greed are good or bad for the organization. Note that the impact of greed on the greedy individual itself is also ambiguous. On the one hand, greed motivates the individual to be productive (Seuntjens, Zeelenberg, Breugelmans, et al., 2015). This has a rather positive impact on the individual. On the other hand, a greedy individual's unbreakable feeling of dissatisfaction has certainly a negative impact on the individual itself (Seuntjens, Zeelenberg, Breugelmans, et al., 2015).

Scholars currently discuss whether greed is a *trait or a state*. State and trait describe human personality and both have influence on human behavior. A trait is rather stable over time and over situations whereas states are rather fluctuating. Prior to the financial crisis of the late 2000's, scholars see greed rather as a state that fluctuates between situations (Wang & Murnighan, 2011). As scholars see greed as a state, they conduct social games for investigating situational greed and find within-person differences depending on the situation (e.g., Yamagishi & Sato, 1986). After the financial crisis, scholars increasingly see greed as rather stable and thus, as a trait (Krekels & Pandelaere, 2015; Seuntjens, Zeelenberg, van de Ven, et al., 2015). Mussel et al. (2015) believe that there is both state greed and trait greed. When investigating on neural responses using an electroencephalogram (EEG) during a monetary game, participants high in *trait* greed show more risk-taking behavior. State greed moderates the impact of trait greed on risk taking (Mussel et al., 2015). This is in line with Lambie and Haugen (2019) who see that specific situations trigger greed *and* that individuals differ in the degree to which greed motivates them.

### ***Greed definition and conceptualization used in this dissertation***

As outlined above, scholars agree that greed is a striving for material and immaterial desires that is insatiable and excessive. Since these elements are irrevocable, they are included in the definition that I use in this dissertation.

Though, there are also differences in the conceptualizations of greed. The first aspect where scholars' opinions are not fully in line is on the *relative importance of acquisition and retention* components (Krekels, 2015; Levine, 2005; Seuntjens, 2016). My research bases on a conceptualization of greed that sees the acquisition component as more important than the

retention component. I do so because even scholars who argue that the retention component is usually equally important as the acquisition component, state that this is not the case in competitive environments (Krekels, 2015). New ventures are particularly disposed to competition as they have to compete for various resources including funding, customers, and personnel. Moreover, in comparison to established organizations, entrepreneurial ventures first need to be built. For building a venture, resource acquisition is a central element and, thus, particularly important in entrepreneurial ventures (Villanueva, Van de Ven, & Sapienza, 2012). Hence, it seems reasonable to base research in entrepreneurial settings on a conceptualization of greed that sees acquisition to be more central to the construct than retention.

The second point of discussion is on whether a *negative impact* on others is inherent to greed or whether it is the consequences of greed that may have a negative impact on others. As I investigate the impact of greed on unethical behavior in my second model, I do not want to commit myself to a definition that upfront states that greed is unethical. This way I am in line with extant studies that state that greed does not necessarily have a negative impact (Bruhn & Lowrey, 2012; Seuntjens, Zeelenberg, van de Ven, et al., 2015; Wang & Murnighan, 2011) or particularly state that we need more research on whether negative consequences are part of the greed construct or not (Lambie & Haugen, 2019; Mussel, Krumm, Rodrigues, & Hewig, 2018). Actually, with my dissertation I contribute to the discussion about the negative impact of greed on others. Particularly, I investigate whether individuals high in greed show unethical behavior that is meant to benefit a certain group of individuals who form the entrepreneurial venture at the expense of other individuals outside the venture.

The third discussion point is on whether greed is a *state or a trait*. The conceptualization of greed as a pure state is obsolete as various researchers have found that individuals differ in trait greed (Krekels & Pandelaere, 2015; Seuntjens, 2016). Most recent work hints to greed being a trait with a situational component (Lambie & Haugen, 2019). In general, I think it is plausible to assume that greed is a trait and is likely elicited by situational triggers. With my dissertation that includes two moderated relationships between greed and a behavioral outcome, I shed light on whether greed is situationally triggered.

Based on this reasoning, this dissertation builds on a comparably open definition of greed. Following Seuntjens, Zeelenberg, van de Ven, et al. (2015, p. 917), I define greed as “the tendency to always want more and never being satisfied with what one currently has”.

## 2.1.2 Individuals high in greed and situational triggers of greedy behavior

In this subsection, I present studies on groups of individuals who are more likely to be greedy than others. Thereafter, I explore situational triggers of greedy behavior.

### *Individuals high in greed*

Even though every individual may be greedy to some extent (Seuntjens, Zeelenberg, Breugelmans, et al., 2015; Wang & Murnighan, 2011), scholars find that some groups of individuals are more likely to be greedy than others. For instance, studies show that males are on average greedier than females (Krekels & Pandelaere, 2015; Liu, Sun, Ding, et al., 2019), disbelievers tend to be greedier than the faithful, and people working in finance or management tend to be greedier than people working in other fields (Krekels & Pandelaere, 2015). Moreover, younger individuals tend to be greedier than older individuals (Liu, Sun, Ding, et al., 2019). Interestingly, Liu, Sun, and Tsydypov (2019) find that the socioeconomic status at childhood of only children positively impacts greed when the children have grown older. Though, this does not hold for children with siblings (Liu, Sun, & Tsydypov, 2019). Chen (2018) also investigates the influence of an individual's childhood on greed. He finds that environmental unpredictability during childhood predicts greed. He argues that greed is a strategy that individuals apply due to the unpredictability of their environment (Chen, 2018). This supports the proposition that greed leads to stockpiling (Hill & Cassill, 2004).

There are also entrepreneurship-specific findings. Djankov et al. (2006) find that Chinese and Russian entrepreneurs are more likely to be greedy than non-entrepreneurs. Moreover, Chinese entrepreneurs tend to be greedier than Russian entrepreneurs (Djankov et al., 2006).

Wang et al. (2011) analyze the association between economics education and greed. Conducting a dictator game, they find that economics students keep more money than non-economics students. This leads the authors to the conclusion that economics students are greedier than students from other disciplines. Also, students show diverging *attitudes* towards greed with economics students perceiving greed as more positive than other students. Though, just “a short statement on the societal benefits of self-interest led to more positive ratings of greed's moral acceptability, even for noneconomic students” (Wang et al., 2011, p. 643). Loroz and Helgeson (2013) find that the Generation Y, the group of individuals born between 1980 and 1995, has a more positive attitude towards greed than the baby boomers, a generation born after World War II.

### *Situational triggers of greedy behavior*

In the following, I present some situational triggers of greedy behavior. While nowadays most scholars see greed as a dispositional or stable trait (e.g. Krekels & Pandelaere, 2015; Seuntjens, Zeelenberg, van de Ven, et al., 2015), some of the below-mentioned studies consider greed as a state. Accordingly, these studies consider antecedents of state greed what scholars nowadays would rather consider situational triggers of greedy behavior. Moreover, the measurements for greed in those studies – be it a scale or an observed behavior – does not measure greed as it is now defined. Nevertheless, despite these differences in the conceptualization of greed, the mentioned studies provide interesting insights into situational triggers of greed.

Most of the studies that were intended to investigate state greed use experiments or social games for analyzing triggers of greedy behavior. On an individual level, scholars find that mortality salience, an individual's awareness that the death is inevitable, affects greedy behavior (Cozzolino, Staples, & Meyers, 2004; Jonas, Sullivan, & Greenberg, 2013). Jonas et al. (2013) find that mortality salience may either lead to generosity or to greedy behavior depending on the norms salient in the current situation. Cozzolino et al. (2004) find that mortality salience leads to greedy behavior particularly for extrinsically motivated individuals. Yang et al. (2013) investigate whether the cleanliness of money has an impact on behavior. In several experiments they find that participants handling clean money (i.e., money without dirt on it) tend to act more fairly whereas participants handling dirty money act comparably greedy (Yang et al., 2013).

On a group level, common fate of a group positively impacts competition with other groups and subsequently greedy behavior (Insko, Wildschut, & Cohen, 2013). Within a group, a structured compared to an unstructured discussion reduces complexity, increases cooperation among the participants, and ultimately decreases the tendency to engage in greedy behavior (Park & DeShon, 2018). Furthermore, Yamagishi and Sato (1986) find a disjunctively produced good to activate greedy behavior whereas a conjunctively produced good activates fear.

### **2.1.3 Outcomes of greed**

In the following, I first present outcomes of greed identified by psychology scholars. Subsequently, I illustrate outcomes of greed in organizational contexts.

### *Outcomes of greed from a psychological perspective*

Belle and Cantarelli (2017) find that greed leads to *unethical behavior* and argue that greedy individuals engage in unethical behavior in order to counterbalance wealth inequalities. Seuntjens et al. (2019), too, investigate the impact of individuals' greed on unethical behavior. Conducting three studies, they discover that for greedy individuals it is more acceptable to transgress. In their study, self-control mediates the impact of greed on unethical behavior (Seuntjens et al., 2019).

Moreover, greed relates to *financial behavior*. Not only do greedy individuals aim at higher incomes (Mussel & Hewig, 2016), they actually achieve higher incomes than individuals low in greed (Seuntjens et al., 2016). This can be regarded as a positive consequence of greed. On the darker side, greed leads individuals to spend more, save less and have more debt (Seuntjens et al., 2016). Further, greedy individuals tend to accept higher risks in order to maximize their individual outcome (Mussel et al., 2015) and they invest more money in stocks (Mussel & Hewig, 2016).

Several experimental studies focus on the impact of greed in a *group context*. Findings from experimental studies include that greedy individuals contribute less to a common pool, act selfish (Mussel & Hewig, 2016; Poppe & Utens, 1986), and are reluctant to cooperate (Bruins, Liebrand, & Wilke; Hwang & Burgers, 1997). Steinel and De Dreu (2004) find that greedy individuals tend to hold back information. And Mussel and Hewig (2016) discover that individuals high in greed retain more money in a dictator game, act riskier in a risk game, and report stronger negative affect after losing money and more positive affect after winning money than individuals low in greed. Bornstein and Gilula (2003) compare the outcomes of group conflicts that are driven either by fear or by greed. They find that communication between groups has a positive impact in the case of fear-driven conflicts but not in the case of greed-driven conflicts (Bornstein & Gilula, 2003).

Other studies indicate that people *perceive other individuals' greed*. A study by Crossley (2009) on victims' reactions to social undermining shows that by the victim perceived greed of the offender in comparison to perceived malice of the offender is seen as more severe. In turn, "perceptions of offender greed was related to revenge, avoidance, and reconciliation through perceived severity and subsequent anger" (Crossley, 2009, p. 21). Samuelson (1991) discovers an impact of perceived greed in a resource management task: if participants relate poor group performance to task difficulty, the group chooses the option to take a group leader; if participants relate poor group performance to greed, they do not take a leader.

To sum up, psychology scholars find that individuals high in greed tend to act unethically. Moreover, greedy individuals attach particular importance to financial means as they aim at and achieve higher incomes and as they spend more money and accept higher risks in comparison to individuals lower on greed. Furthermore, greed seems to be problematic in group contexts as individuals high in greed tend to focus more on the self and are uncooperative. And, importantly, greed is perceived by other individuals.

### ***Outcomes of greed from an organizational perspective***

Also, organizational scholars identify outcomes of greed conducting both theoretical and empirical studies. First, I illustrate outcomes of executive and managerial greed. Second, I present outcomes of employees' greed. Third, I present outcomes specific to entrepreneurial greed. And fourth, I present outcomes of greed at the organizational level.

The general public accuses in particular *executives* of being greedy (Wang & Murnighan, 2011). Findings from theoretical studies hint at executives' greed having a particularly negative impact on organizations. For instance, Haynes et al. (2017) theorize that an executive's greed reduces shareholder return. Power of the board, executive tenure and freedom in decision making moderate this greed-return-relationship such that the relation between greed and shareholder return becomes more negative for a comparably weak board, for comparably short executive tenure, and for comparably high freedom in decision making (Haynes et al., 2017). Similarly, Haynes, Josefy, et al. (2015b) theorize that greed and altruism of a manager impacts the leader's behavior and firm performance. Managers high in greed more likely focus on short-term decisions and short-term performance. Moreover, managerial greed may not only lead to wrongdoing but also undermines organizational performance. Besides, the scholars theorize that greedier CEOs are more likely to leave the company as they either want to earn more at another company or are dismissed for immoral behaviors than less greedy CEOs (Haynes, Josefy, et al., 2015b). In order to investigate managerial greed in a team context, Lu et al. (2006) conduct a questionnaire-based investigation on managerial knowledge-sharing among 350 part-time MBA students and 80 mid-level employees from China. They discover that greed plays a crucial role in the knowledge-sharing behavior of managers. Particularly they find that greed reduces knowledge-sharing (Lu et al., 2006).

Organizational scholars analyze the impact of *employees' greed*. Interestingly, based on a sample of 315 employees, Zhu et al. (2019) find that greed may have a positive or a negative impact on an employee's performance. Greed has a positive impact on performance when

mediated by the need for social status. On the other side, greed has a negative impact on performance, when the employee perceives an unfair distribution of rewards (Zhu et al., 2019). Similarly, Bruhn and Lowrey (2012) argue that employees' greed elicits different types of behavior that have a positive or a negative impact on the organization they are working in. The behavioral outcomes of greed range from great dedication, over minor shenanigans, to behavior that may be highly detrimental for the company like manipulation or deception. The authors add that employees are more likely to show greedy behavior when they rather work on their own instead of working in a team (Bruhn & Lowrey, 2012).

Haynes, Hitt, et al. (2015) theorize on the impact of *entrepreneurs' greed*. They propose that an entrepreneurial leader's greed negatively affects a venture's social capital and human capital and, finally, venture success. Time horizon and firm size moderate the relationship of greed on social and human capital, such that the shorter the time span of the venture, the stronger the effect and the bigger the firm, the smaller the effect (Haynes, Hitt, et al., 2015).

Scholars also investigate greed at an *organizational level*, thus, an entire organization's greed. For instance, in an alliance of several companies, greed of one partner company leads to opportunistic behavior of this partner and finally endangers the entire alliance (Hwang, 2017). Grégoire, Laufer, and Tripp (2010, p. 738) investigate customers' reactions to their perceptions of a firm's greed characterized as an "inferred negative motive about a firm's opportunistic intent" finding that customers react with anger and a desire for revenge on the greed of a company. Caruana, Vella, Konietzny, and Chircop (2018) focus on perceived greed by customers in the banking industry. Perceived greed has a direct negative effect on corporate reputation, a negative impact on customer satisfaction and undermines perceptions of the bank's corporate social responsibility activities (Caruana et al., 2018). Vergne, Wernicke, and Brenner (2018) investigate media evaluations about CEO overcompensation and argue that these are associated with greed. They find that philanthropic organizations that overcompensate their CEO tend to be seen more negatively by customers and tend to get more media disapproval than non-philanthropic organizations (Vergne et al., 2018).

In a nutshell, whereas executives' and managers' greed tend to have a negative impact on their organization, the results for employees are mixed. Theoretical findings on entrepreneurs' greed hint at a negative impact on venture performance. Besides, other companies, customers and the general public perceive greed of organizations and discredit it.

## **2.2 Greed and explorative behavior**

This dissertation discusses the relationship between an entrepreneur's greed and his or her behavior. Specifically, I analyze the moderated relationship between greed and two different behaviors, namely explorative behavior and unethical pro-organizational behavior.

In this section 2.2, I present the theoretical foundations for the relationship between greed and explorative behavior. As such, I present the theoretical framework called situational strength theory in 2.2.1. In 2.2.2, I theoretically derive the main effect of greed on explorative behavior. Thereafter, I present the theoretical foundations for three different moderators of this relationship, industry experience (2.2.3), cognitive trust (2.2.4), and venture size (2.2.5). And finally, I summarize the hypotheses that I postulate in terms of the explorative behavior model (2.2.6).<sup>2</sup>

### **2.2.1 Situational strength theory**

In the following, I first introduce situational strength theory. Subsequently, I provide some background information on the theory and give some information on the application of situational strength theory in organizational settings.

#### ***Introduction to situational strength theory***

For instance, greedy people show greedy behavior when they are trying to be the first at the buffet, trying to get most out of the salary negotiations, or trying to get credit for the work of their colleagues. However, greedy people do not always show greedy behavior. Consider an assembly-line worker. When working at the assembly-line, a comparably greedy assembly-line worker is likely to show similar behavior as a comparably less greedy assembly line worker because both have to follow very precise work instructions including, for instance, exact instructions on hand movements and strict time constraints. In salary negotiations or at the buffet, in contrast, the comparably greedy assembly-line worker more likely shows greed-specific behavior than his or her less greedy colleague. This example illustrates that an individual shows trait-specific behavior (e.g., Judge & Zapata, 2015; Meyer, Dalal, & Bonaccio, 2009), and greed-specific behavior in particular (Lambie & Haugen, 2019),

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<sup>2</sup> As mentioned in the introduction (see 1.3), parts of the content on the relationship between greed and explorative behavior (2.2) have similar content as an unpublished paper that I wrote as first author during my PhD together with Professor Mirjam Knockaert (Ghent University), and Professor Holger Patzelt (Technical University of Munich).

contingent on the current situation. Situational strength theory provides an explanation on when individuals act consistently to their traits and when they do not.

Situational strength refers to “implicit or explicit cues provided by external entities regarding the desirability of potential behaviors” (Meyer et al., 2010, p. 122). Situational strength theory states that strong situations are characterized by clear guidelines regarding the expected behavior that put psychological pressure on individuals (Judge & Zapata, 2015; Meyer et al., 2010). This pressure constraints the expression of personality traits and trait-based behavior (Judge & Zapata, 2015; Meyer et al., 2010). In strong situations, most individuals “agree on what constitutes an appropriate behavioral response” and therefore behave similarly (Judge & Zapata, 2015, p. 1151). In weak situations, in contrast, the implicit or explicit cues are absent or limited in strength. In these situations, there are no clear guidelines on how to behave. Due to the absence of clear guidelines in weak situations, different people tend to behave according to their personal characteristics and thus, differently.

It is important to note that it is the *perceived* strength of a situation that influences an individual’s behavior. Usually, individuals agree on their perceptions of strong situations more than on the perceptions of weak situations (Meyer et al., 2014). Besides, there is a self-reinforcing mechanism in situations in which multiple individuals are involved. The more individuals are acting in an expected way, the stronger becomes the situation for other individuals (Meyer, Kelly, & Bowling, 2018).

### ***Background of situational strength theory***

Although scholars have developed and formalized situational strength theory just recently (e.g., Judge & Zapata, 2015; Meyer et al., 2010), already in the mid of the 20<sup>th</sup> century scholars stated that the emergence of trait-dependent behavior depends on the situation. For instance, Rogers (1954, p. 257) states that conditions of “psychological safety and freedom” maximize “the likelihood of an emergence of constructive creativity”. In an organizational context, Forehand and Von Haller (1964, p. 361) see that environmental conditions have an impact on organizational behavior by “determining stimuli, by restraining freedom of response and by rewarding or punishing behavior”.

In the last quarter of the 20<sup>th</sup> century, scholars intensified research on situational aspects that shape the translation of personal characteristics into behavior. One stream of research can be regarded as the foundation for today’s situational strength theory. Specifically, Mischel (1977)

and Weiss and Adler (1984) specify that strong situations impose cues that guide behavior. Also, Snyder and Ickes (1985) see a tremendous impact of situational strength as a moderating variable. And for Caspi and Moffitt (1993, p. 248), “individual differences are most likely to be accentuated during transitions into new situations that are characterized by unpredictability, when there is a press to behave but no information about how to behave adaptively”.

A second theory that emerged is trait activation theory (Tett & Burnett, 2003; Tett & Guterman, 2000). Central to this theory is not the strength of the situation but rather the information provided in the situation. Trait activation theory postulates that “the behavioral expression of a trait requires arousal of that trait by *trait-relevant* situational cues” (Tett & Guterman, 2000, p. 398). Comparing situational strength and trait activation theory, the former argues based on the degree or the quantity of available information, whereas the latter argues based on content or the type of information (Meyer et al., 2018; Tett & Guterman, 2000).

Meyer et al. (2018) agree that three elements determine the behavior of an individual: the individual’s trait profile, the perceived strength of the situation, and, consistent with trait activation theory, the situational information the individual receives. Thus, a combination of situational strength theory and trait activation theory would provide the most sophisticated framework for analyzing the behavioral expression of personality traits contingent on situational triggers. Our knowledge on greed, though, is still limited, particularly in entrepreneurial contexts. Taking into account that we so far do not know greed’s trait-relevant situational cues, I apply situational strength theory for investigating the impact of greed on explorative behavior.

### ***Situational strength theory in organizational contexts***

Scholars operationalize situational strength in various ways (Meyer et al., 2009). Most of these operationalizations focus on certainty as strong situation and uncertainty as weak situation. The rationale behind this is that individuals have clear expectations regarding the most appropriate behavior in certain situations and unclear expectations about the most appropriate behavior in uncertain situations (Mischel, 1973). In order to shed some light on the character of situational strength in organizational contexts, Meyer et al. (2010) propose four facets of situational strength:

1. Clarity: “the extent to which cues regarding work-related responsibilities or requirements are available and easy to understand”;

2. Consistency: “the extent to which cues regarding work-related responsibilities or requirements are compatible with each other”;
3. Constraints: “the extent to which an individual’s freedom of decision and action is limited by forces outside his or her control”;
4. Consequences: “the extent to which decisions or actions have important positive or negative implications for any relevant person or entity” (Meyer et al., 2010, pp. 125-127).

Based on these four facets, Judge and Zapata (2015) state that situations are strong at work if they first, are well-structured (high clarity), second, are similar every day (high consistency), third, provide little freedom for decision-making (high constraints), and fourth, are severely punished in case of undesired results (high consequences).

### **2.2.2 Greed and explorative behavior**

In this subsection, I first provide some information on explorative behavior. Based on this information, I then address the relationship between greed and explorative behavior.

#### ***Explorative behavior***

Explorative behavior is about searching for new opportunities, innovating, and creating variation (March, 1991; Mom, Van Den Bosch, & Volberda, 2007). In organizational settings, exploration activities may not only relate to new products, markets, or technologies, but also to an organization’s structure, routines and norms (McGrath, 2001; Mom et al., 2007). Scholars often compare explorative behavior with exploitative behavior. In contrast to explorative behavior, exploitative behavior is about improving and refining rather than innovating (Mom et al., 2007). While exploration activities broaden the manager’s existing knowledge base, exploitation activities deepen the manager’s knowledge base (Mom et al., 2007). Explorative behavior contains the opportunity of a great change and thus, major improvement (He & Wong, 2004), whereas exploitative behavior relates to minor adjustments and thus, decent improvement (March, 1991).

A central element of explorative behavior is *risk-taking* (March, 1991). For instance, in organizational settings, exploration relates to a transformational rather than a transactional management style (Jansen, Vera, & Crossan, 2009) and to experimentation with new methods (McGrath, 2001; Mom et al., 2007). Exploitative behavior, in turn, is more connected to

reliability than to risk (Mom et al., 2007). Moreover, explorative behavior is *long-term oriented* (Mom et al., 2007) as company investments in research and development indicate a focus on long-term performance (Le Breton-Miller, Miller, & Lester, 2011).

The actual impact of explorative behavior on *performance* is ambiguous. When combined and balanced, explorative behavior and exploitative behavior tend to yield positive performance (e.g. Junni, Sarala, Taras, & Tarba, 2013; Lubatkin, Simsek, Ling, & Veiga, 2006). However, too much focusing on exploration rather than exploitation leads to a constant search for new opportunities instead of pursuing and developing an opportunity. New opportunities replace existing opportunities before the latter have paid-off (Junni et al., 2013). This is what Levinthal and March (1993, p. 105) refer to as “failure trap”. While management scholars find that for established organizations the simultaneous exploration and exploitation of opportunities, which is called ambidexterity, has a positive impact on performance (e.g. Gibson & Birkinshaw, 2004; O'Reilly III & Tushman, 2013), entrepreneurship scholars find that this is not the case for new ventures (Parida et al., 2016). This is because new ventures first need to explore an opportunity before they can start to exploit on it (Choi et al., 2008) and new ventures tend to have insufficient resources and know-how to successfully explore and exploit at the same time (Parida et al., 2016). While the overarching impact of explorative behavior on performance is ambiguous, mentioned studies suggest that it is important to understand the antecedents of explorative behavior in entrepreneurial ventures because there are times when exploration activities are vital for the venture and there are times when they may exhaust ulteriorly needed resources.

### ***The relationship between greed and explorative behavior***

Davis-Blake and Pfeffer (1989, p. 387) state that “most organizational settings are strong situations”. Based on situational strength theory, this indicates that in organizational settings the expression of trait-based behavior is constrained and most individuals show similar behavior. I argue that this does not hold for entrepreneurial settings. Compared to organizational settings in established organizations, the situations for entrepreneurs who work in new ventures are comparably weak (Markman & Baron, 2002). I base my argumentation on the four facets of strong situations defined by Meyer et al. (2010) consisting of high clarity, high consistency, high constraints, and severe consequences (see 2.2.1).

1. Clarity: Compared to managers in established organizations, entrepreneurs' work is less structured and lacks clear rules (Stewart Jr. et al., 1999). Therefore, entrepreneurial work in a new venture is *less clear* than work in an established organization.
2. Consistency: Entrepreneurs tend to engage in a broad variety of tasks and take roles not only as managers but also as visionaries (Schjoedt, 2009). Accordingly, their work tends to be comparably *little consistent*.
3. Constraints: Entrepreneurs tend to work with greater autonomy than managers in established organizations (Schjoedt, 2009). Thus, their decisions are *less constrained* than those of managers in established organizations.
4. Consequences: Compared to managers in established organizations, entrepreneurs work under comparably high environmental uncertainty and face multiple problems and decisions (Busenitz & Barney, 1997). Due to the uncertainty and time pressure, they need to apply heuristics to make decisions, whereas managers in established organizations have more time per decision and better information to make a decision (Busenitz & Barney, 1997). Therefore, the consequences of one single wrong decision among multiple decisions of an entrepreneur tends to have relatively *lower consequences* than one wrong decision among a few decisions of a manager in an established organization.

Thus, in general, the situational strength in an entrepreneurial context should be lower than in established organizations.

Having argued that the entrepreneurial context seems to be fertile ground for greedy entrepreneurs to show greed-driven behavior, I now argue why I postulate a positive relationship between greed and explorative behavior. First, individuals high in greed pursue goals that may be reached by engaging in explorative behavior. Specifically, individuals high in greed try to maximize their personal outcomes (Lu et al., 2006; Mussel et al., 2015). Explorative behavior, in turn, offers the opportunity of maximization (He & Wong, 2004). Thus, a reasonable way for an entrepreneur to seek maximization is engaging in exploration activities.

Second, individuals high in greed tend to accept higher risks when seeking maximization than individuals low in greed (Mussel et al., 2015). Risk taking, in turn, is a central element of explorative behavior (March, 1991). Thus, individuals high in greed meet the personal requirements needed to engage in explorative behavior.

As entrepreneurs are working in a comparably weak situation (Markman & Baron, 2002) and as individuals high in greed tend to pursue goals that can be reached by explorative behavior and tend to show an attitude needed to engage in explorative behavior, I propose the following hypothesis:

Hypothesis 1: There is a positive relationship between entrepreneurs' level of greed and their tendency to engage in explorative behavior.

### **2.2.3 Industry experience, greed, and explorative behavior**

Industry experience relates to the knowledge entrepreneurs have acquired by working in the market of their current venture (Delmar & Shane, 2006; Dimov, 2010). Specifically, industry experience yields relevant information, skills, and significant personal contacts (Dimov, 2010; Patzelt, 2010). Regarding information, industry experience provides important knowledge about an industry with respect to norms, rules, and the value chain (Delmar & Shane, 2006; Dimov, 2010). Regarding skills, industry experience can be illustrated on a learning curve. The more industry experience entrepreneurs acquire, “the better they become at organizing firms, acquiring resources, attracting customers and suppliers, and hiring employees” (Delmar & Shane, 2006, p. 220). Regarding personal contacts, an entrepreneur with industry experience may already have access to crucial stakeholders, as suppliers or customers (Dimov, 2010). In general, industry experience relates to more precise expectations about the entrepreneur's future business (Cassar, 2014), helps to overcome liabilities of newness, referring to the observation that younger firms are more likely to fail than older firms (Stinchcombe, 1965), and has a positive impact on performance (Delmar & Shane, 2006).

Industry experience most likely affects predominantly two of the four facets of situational strength (Meyer et al., 2010), namely clarity and consistency (see 2.2.1). First, industry experience provides *clarity* as it yields an awareness about relevant norms, rules and demands (Delmar & Shane, 2006). In particular, crucial knowledge that an entrepreneur needs in order to successfully operate in an industry can only be obtained by working in the specific industry because this knowledge is “uncodified” and only available by participating in the industry (Delmar & Shane, 2006, p. 223). This knowledge may relate for instance to production processes, customer demands, and changes in technology. Moreover, industry experience enhances clarity regarding important personal relationships. Personal relationships with important stakeholders are established over time and entrepreneurs may transfer personal contacts from an original engagement in the industry to their new entrepreneurial venture. These

personal contacts may be important for getting access to needed resources (Delmar & Shane, 2006).

Second, industry experience enhances *consistency*, as it improves an entrepreneur's skills in shaping a ventures organization (Delmar & Shane, 2006). By participating in a market, an entrepreneur acquires knowledge so that he or she is better able to shape the venture's organizational structure than an entrepreneur without industry experience. For instance, an entrepreneur who has already gained some industry experience at another organization in the same industry tends to have gathered knowledge on how an organizational structure should be shaped in order to best meet market requirements. Compared to an entrepreneur with low industry experience, an entrepreneur with high industry experience tends to shape the organization, such that roles and responsibilities have to be adapted rather seldomly, work is rather similar on a day-to-day basis, and, accordingly, consistency is high (Judge & Zapata, 2015).

Whereas industry experience relates to clarity, consistency and thus, a strong situation, a lack of industry experience can be associated with low clarity, low consistency and thus, a weak situation. In case an entrepreneur has low industry experience, he or she lacks *clarity-providing* market-specific knowledge, for instance on production processes, and customer segments, as well as important social ties to relevant stakeholders. Additionally, the lack of industry experience relates to limited knowledge and skills in shaping an organization in order to meet market requirements. As the entrepreneur will constantly acquire new important insights, the organizational structure and its roles and responsibilities have to be adapted comparably frequently. This, in turn, relates to low work *consistency*. As illustrated, an entrepreneur with low industry experience lacks clear guidelines on how to behave. Hence, I conclude that the lower industry experience, the weaker is the entrepreneur's situation and, specifically, propose the following hypothesis:

Hypothesis 2: The relationship between entrepreneurs' level of greed and their tendency to engage in explorative behavior is moderated by industry experience, such that this relationship is more positive at lower levels of industry experience compared to higher levels of industry experience.

#### 2.2.4 Cognitive trust, greed, and explorative behavior

Trust is a key construct for describing the interaction and collaboration in entrepreneurial teams (Khan, Breitenecker, Gustafsson, & Schwarz, 2015) and is an important ingredient of venture success (e.g. Chen & Wang, 2008; Chowdhury, 2005). In general, trust is closely related to uncertainty as scholars consider trust to be “the antithesis of doubt” (Sorrentino, Holmes, Hanna, & Sharp, 1995, p. 314) and state that “to trust is to act as if the uncertain future actions of others were indeed certain” (Lewis & Weigert, 1985, p. 971). These actions, in turn, are expected to be conducive or “at least not detrimental to one’s interests” (Robinson, 1996, p. 576).

Trust consists of two dimensions: cognitive trust and affective trust. Cognitive trust relies on competences and knowledge of the other person. It is therefore considered as being the rational form of trust (McAllister, 1995; Smith & Lohrke, 2008) and individuals consciously decide on trusting another person (Smith & Lohrke, 2008). Affective trust, on the other hand, represents an emotional form of trust as it bases on emotions towards the other person (McAllister, 1995; Smith & Lohrke, 2008). In entrepreneurial teams, particularly cognitive trust is crucial as it is more important for performance than affective trust (Khan et al., 2015).

As Khan et al. (2015, p. 560) argue in their study on entrepreneurial teams, cognitive trust builds an entrepreneur’s expectations that their team members “fulfill their roles appropriately”. Based on this argumentation, cognitive trust is clearly related to three dimensions of situational strength in organizational contexts (Meyer et al., 2010). An entrepreneur who works in an entrepreneurial team that has defined roles and where team members stick to their roles, tends to face rather high *clarity*, *consistency*, and *constraints* compared to an entrepreneur working in a team with less clearly defined and fulfilled roles (see 2.2.1).

Since cognitive trust builds on the expectation that team members fill their roles properly (Khan et al., 2015), it also builds on the assumption that defined roles are present in the entrepreneurial team. The presence of a defined role provides the entrepreneur him- or herself with *clarity* regarding his or her own tasks and responsibilities. An entrepreneur who has a defined role including defined tasks and responsibilities, should know clearly what his or her own tasks are and what others, including the entrepreneurial team members, expect of him or her.

The clearly defined and fulfilled roles of the teammates should affect *consistency* as the focal entrepreneur can better focus on his or her task instead of investing extra resources for the team members’ tasks (Khan et al., 2015). While the entrepreneur knows his or her own tasks and responsibilities and tries to comply with them, this entrepreneur also knows the tasks and

responsibilities of the team members and expects them to comply with them, too. Consequently, as all team members have their own defined roles, their work is more consistent as it would be in a situation where roles are less defined and where team members have to work here and there.

And at the same time, clearly defined roles should provide some *constraints* as an entrepreneur has his or her individual responsibilities and should not engage in the responsibilities of the other team members. Indeed, entrepreneurs should not without permission engage in tasks or responsibilities of team members as this may lead to conflicts within the team.

Overall, while trust in general relates to certainty, cognitive trust in particular positively relates to clarity, consistency, and constraints. Thus, high cognitive trust shapes rather strong situations, situations that provide clear guidelines on how to behave. Low cognitive trust, in contrast, refers to weak situations where individuals tend to act more consistent to their personal trait profile. Specifically, low cognitive trust provides low clarity on the entrepreneurs' own tasks, little consistency, as team members' tasks are also unclear and therefore cross-role work may be needed, and few constraints as every team member has to work here and there. Based on this argumentation, I propose the following hypothesis:

Hypothesis 3: The relationship between entrepreneurs' level of greed and their tendency to engage in explorative behavior is moderated by cognitive trust, such that this relationship is more positive at lower levels of cognitive trust compared to higher levels of cognitive trust.

### **2.2.5 Venture size, greed, and explorative behavior**

Small ventures face more difficulties (Kale & Ardit, 1998) and higher risk of failure (Freeman, Carroll, & Hannan, 1983) than bigger ventures. Specifically, small ventures are more likely to have financial difficulties including inadequate cash-flow, limited financial savings (Kale & Ardit, 1998) and limited access to external financing (Aldrich & Auster, 1986). The acquisition of new employees is rather difficult and skill enhancement of existing personnel tends to be too expensive for small ventures (Aldrich & Auster, 1986). Moreover, small companies compared to big companies tend to have more problems regarding pricing, acquisition of customers, or accounting (Kale & Ardit, 1998), and have relatively higher expenses for administration (Hyytinen, Pajarinen, & Rouvinen, 2015). This phenomenon of difficulties due to low venture sizes is called 'liabilities of smallness' (e.g., Brüderl & Schüssler, 1990; Kale & Ardit, 1998).

Specifically, venture size should affect all four facets of situational strength in organizations by Meyer et al. (2010) (see 2.2.1). As bigger ventures tend to have clearer and more formalized

roles and responsibilities (Cardon & Stevens, 2004; Schjoedt, 2009), work in bigger ventures should be *clearer, more consistent, and more constrained* compared to work in smaller ventures. For instance, small ventures tend to lack human resource management systems (Cardon & Stevens, 2004). Human resource management systems, in turn, affect behavior as they shape the organization's cultural norms, values, routines, roles as well as the organizational structure, and the organization's climate and therefore provide a strong situation (Bowen & Ostroff, 2004). Consistently, the situation in entrepreneurial ventures without a human resource management system should be weaker. More specifically, such a system provides explicit information to every individual working in an organization on individual responsibilities and tasks. Accordingly, formal established roles should provide *clarity* to each individual working in the organization. The process of establishing and recording an organizational structure including tasks and responsibilities will enhance *consistency*. Moreover, not only the established organizational structure but also the cultural norms and values brought by a human resource management system limit the range of acceptable (work) behavior and *constrain* the freedom of individuals' actions.

Additionally, in bigger ventures one decision likely affects, on average, more individuals than in smaller ventures. Therefore, the *consequences* of decisions and actions are more severe in bigger ventures.

In sum, and in line with extant research (Markman & Baron, 2002), the situation in a bigger venture should be stronger than in a smaller venture. In contrast, the situation is weaker in smaller ventures because tasks and responsibilities tend to be less clear and less consistent and consequences are less severe as they affect fewer other individuals. Consistently, the expression of entrepreneurs' traits is more likely in small ventures. Hence, I postulate the following hypothesis:

Hypothesis 4: The relationship between entrepreneurs' level of greed and their tendency to engage in explorative behavior is moderated by venture size, such that this relationship is more positive for smaller ventures compared to bigger ventures.

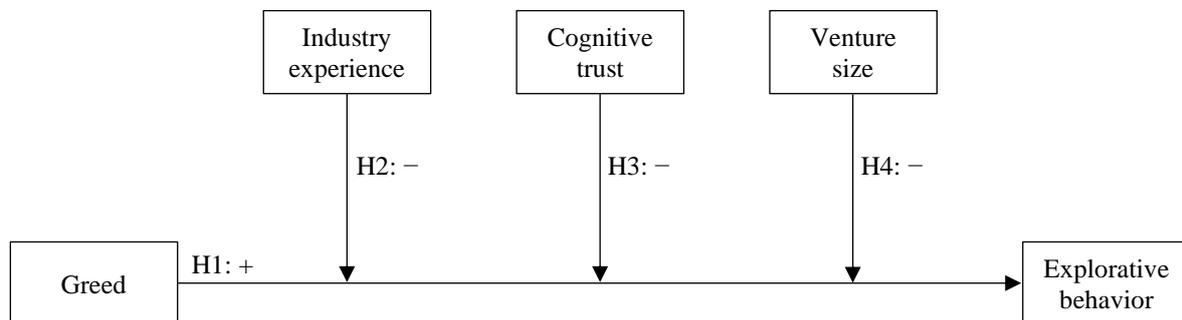
## **2.2.6 Summary of explorative behavior model's hypotheses**

As described, I postulate a positive direct relationship between greed and explorative behavior (Hypothesis 1). Moreover, based on situational strength theory (Meyer et al., 2018), I hypothesize that this effect is more positive when the entrepreneur has comparably low industry

experience (Hypothesis 2), comparably low cognitive trust in his or her teammates (Hypothesis 3), and when the entrepreneur’s venture is comparably small (Hypothesis 4). Table 1 provides a summary of these hypotheses and Figure 1 graphically illustrates the model and its hypotheses.

Hypothesis 1	There is a positive relationship between entrepreneurs’ level of greed and their tendency to engage in explorative behavior.
Hypothesis 2	The relationship between entrepreneurs’ level of greed and their tendency to engage in explorative behavior is moderated by industry experience, such that this relationship is more positive at lower levels of industry experience compared to higher levels of industry experience.
Hypothesis 3	The relationship between entrepreneurs’ level of greed and their tendency to engage in explorative behavior is moderated by cognitive trust, such that this relationship is more positive at lower levels of cognitive trust compared to higher levels of cognitive trust.
Hypothesis 4	The relationship between entrepreneurs’ level of greed and their tendency to engage in explorative behavior is moderated by venture size, such that this relationship is more positive for smaller ventures compared to bigger ventures.

**Table 1: Summary of hypotheses in explorative behavior model**



**Figure 1: Graphical illustration of conceptual explorative behavior model (own illustration); H stands for Hypothesis; + refers to a hypothesized positive relationship; – refers to a hypothesized negative relationship.**

### 2.3 Greed and unethical pro-organizational behavior

In this dissertation, I analyze the impact of greed on two different types of behavior, i.e., explorative behavior and unethical pro-organizational behavior. Whereas the theoretical foundations of the model on explorative behavior are illustrated in 2.2, this section 2.3 contains the theoretical foundations of the model investigating the relationship between entrepreneur’s greed and unethical pro-organizational behavior.

In the following, I present self-control theory which represents the theoretical framework for investigating the relationship between greed and unethical pro-organizational behavior (2.3.1). Thereafter, I provide a theoretical argumentation on the relationship between greed and unethical pro-organizational behavior (2.3.2). Subsequently, I introduce the variable trust that plays an important role in entrepreneurial teams (2.3.3). In this part, I further argue that the two dimensions of trust, i.e., cognitive trust and affective trust, differently moderate the relationship between entrepreneur's greed and unethical pro-organizational behavior. Finally, I provide a summary on the model's hypotheses (2.3.4).<sup>3</sup>

### **2.3.1 Self-control theory**

As greed builds on low levels of self-control (Seuntjens, Zeelenberg, van de Ven, et al., 2015; Seuntjens et al., 2019), self-control theory (Gottfredson & Hirschi, 1990) elucidates how and why greed influences individuals' behavior. In this subsection, I first introduce self-control theory. Second, I provide background information on the theory.

#### ***Introduction to self-control theory***

Self-control is “the capacity to alter or override dominant response tendencies and to regulate behavior, thoughts, and emotions” (De Ridder, Lensvelt-Mulders, Finkenauer, Stok, & Baumeister, 2012, p. 77). Metcalfe and Mischel (1999) develop the hot/cool systems approach to self-control theory which suggests that an individual's behavior is the result of a battle of the individual's “hot” and “cool” systems of decision making. The hot system is defined as emotional, reflexive and rather simple (Metcalfe & Mischel, 1999). It is related to impulsive actions (De Ridder et al., 2012) and desires (Hoch & Loewenstein, 1991). The cool system, on the other side, is cognitive, reflective and rather complex (Metcalfe & Mischel, 1999). It therefore associates with an individual's self-control (De Ridder et al., 2012; Metcalfe & Mischel, 1999). When individuals' cool system dominates the hot system, they have the capacity of deliberate control or regulation of their own actions and behavior, i.e., exert self-control (De Ridder et al., 2012).

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<sup>3</sup> As mentioned in the introduction (see 1.3), parts of the content on the relationship between greed and unethical pro-organizational behavior (2.3) have similar content as a paper that has been submitted to the Journal of Management on 24th September 2020 under the title “Greed and entrepreneurs' unethical pro-organizational behavior in founding teams”. In this paper, I take the role as first author and am co-authoring with Professor Mirjam Knockaert (Ghent University), Professor Holger Patzelt (Technical University of Munich), and Professor Nicola Breugst (Technical University of Munich).

Self-control theory bases on the assumption that individuals strive for rewards that are organized hierarchically (Duckworth, Taxer, Eskreis-Winkler, Galla, & Gross, 2019): On the one side, the hot system triggers actions leading to closer and immediately satisfying rewards, such as the realization of personal desires. On the other side, some actions and behaviors help to achieve rewards that are more attractive in the cool system because they are more distant and more abstract to an individual, such as the satisfaction to comply to general values or social norms (De Ridder et al., 2012; Kotabe & Hofmann, 2015). For individuals it is exhausting to act more on the cool system and, thus, to act based on more distant and abstract rewards (Duckworth et al., 2019; Lian, Yam, Ferris, & Brown, 2017) because they have to control their hot system and abstain from immediate satisfaction and temptations (Van Gelder, 2013). Accordingly, individuals often have difficulties to exert self-control and therefore their hot system predominates their cool system.

Scholars link a broad range of behaviors to low self-control and the associated dominance of the hot system. For instance, students spend too much time on social media instead of studying (Duckworth et al., 2019), consumers engage in impulsive purchasing (Baumeister, 2002), and others become obsessed with gambling (McQuade & Gill, 2012). Further, low levels of self-control have also been linked to unethical (Gino, Schweitzer, Mead, & Ariely, 2011) and criminal behavior (Gottfredson & Hirschi, 1990). Thus, if the hot system dominates the cool system, individuals tend to engage in activities against social norms and values in order to satisfy their current desires (Gino et al., 2011).

### ***Background of self-control theory***

Next to the above-introduced hot/cool systems approach, there are other self-control theories that base on the same definition of self-control. Accordingly, these approaches are not completely different from each other but do show some similarities. For instance, the *discounting model of impulsiveness* by Ainslie (1975) focuses on the temporary order and the desirability of outcomes. Self-control represents the ability to choose a more distant but also more valuable outcome over a closer but in the end less valuable outcome. Thus, self-control is about resisting immediate temptations or impulses in order to serve delayed outcomes (Ainslie, 1975; De Ridder et al., 2012). Baumeister and Heatherton (1996) see *self-control as a strength* needed to resist temptations. In contrast to a stable skill, a strength can be depleted (De Ridder et al., 2012). So, in this conceptualization self-control is a 'limited resource' needed in order to resist impulses or temptations. At some point, when the individual already has resisted to a

number of temptations, self-control is so far depleted that the individual surrenders to a temptation or impulse. The limited resource, though, is renewable (Baumeister & Heatherton, 1996).

Kotabe and Hofmann (2015) take an approach to *integrate* the different elements of self-control theory. They develop a rather complex model consisting of seven components. The interplay of these seven components determine whether an individual is capable of exerting self-control or not (Kotabe & Hofmann, 2015).

For investigating and understanding the relationship of greed and unethical pro-organizational behavior, however, the hot/cool systems approach seems most promising. First, the hot/cool systems approach is broader than the discounting model of impulsiveness as desires are ordered hierarchically not only based on a temporal dimension but also on abstractness. This is important because greed may not necessarily be short-term oriented. Second, scholars conceptualize greed as a trait with a situational component (Lambie & Haugen, 2019; Mussel et al., 2015) rather than a depletable strength. Thus, the hot/cool systems approach is more suitable than the conceptualization of self-control as a depletable strength. Still, one could argue that an integrated framework like the one by Kotabe and Hofmann (2015) would provide the most holistic lens for investigating the relationship between greed and unethical pro-organizational behavior. Yet, the hot/cool systems approach seems not only more practicable than the complex integrated framework but also more suitable as particularly for greed there are still multiple unknowns among the model's seven components.

### **2.3.2 Greed and unethical pro-organizational behavior**

In this subsection, I first introduce the construct of unethical pro-organizational behavior. Thereafter, I point out why I postulate a positive relation between greed and unethical pro-organizational behavior.

#### ***Unethical pro-organizational behavior***

According to Umphress, Bingham, and Mitchell (2010) and as the construct's name indicates, unethical pro-organizational behavior consists of two behavioral components: Unethical behavior and pro-organizational behavior. Unethical behavior refers to behavior that is illegal or at least morally reprehensible. Pro-organizational behavior is aimed to promote the

organization and is “neither specified in formal job descriptions nor ordered by superiors” (Umphress et al., 2010, p. 770).

Overall, unethical pro-organizational behavior refers to “actions that are intended to promote the effective functioning of the organization or its members (e.g., leaders) and violate core societal values, mores, laws, or standards of proper conduct” (Umphress & Bingham, 2011, p. 622). For instance, unethical pro-organizational behaviors include exaggeration of the truth in order to create or maintain a favorable organizational image (Castille, Buckner, & Thoroughgood, 2018), disguising unfavorable information about the organization or lying to stakeholders in order to support or defend the organization (Umphress & Bingham, 2011).

Umphress and Bingham (2011) define three key facets of unethical pro-organizational behavior. First, unethical pro-organizational behavior is conducted to *purposely* support the organization. Accidental errors that may benefit the organization are not considered to be unethical pro-organizational behavior. Second, while individuals that show unethical pro-organizational behavior intent to support the organization, the *final consequences do not have to be positive* for the organization. And third, whereas some individuals act unethically in order to only serve themselves, the primary intention of unethical pro-organizational behavior is to *benefit the organization* (Umphress & Bingham, 2011).

### ***The relationship between greed and unethical pro-organizational behavior***

As illustrated in 2.1.3, psychology scholars (Belle & Cantarelli, 2017; Seuntjens et al., 2019) and organizational scholars alike find that greed may lead to unethical behavior (Bruhn & Lowrey, 2012; Haynes, Josefy, et al., 2015b). Psychology scholars explain the mechanism that makes individuals high in greed to engage in unethical behavior with self-control theory. Specifically, Seuntjens et al. (2019) state that individuals engage in self-control contingent on the result of the individuals’ battle between willpower and desire. Whereas willpower relates to the cool system, desire relates rather to the hot system. They argue that in case of greedy individuals, desires are particularly strong making the battle for willpower tougher to win, and find that greedy individuals are more likely to engage in unethical behavior (Seuntjens et al., 2019).

Organizational scholars find that greedy individuals working in established organizations act unethically by trying to get most out of the company for their own sake. For instance, Haynes et al. (2017) find that executives high in greed tend to direct more of the firm’s resources

towards themselves than towards other stakeholders. This has a negative impact on shareholder returns (Haynes et al., 2017). Specifically, based on the dominance of the hot decision making system, greed can lead executives to make decisions emphasizing immediately gratifying short-term rewards while neglecting the firm's long-term performance (Haynes, Josefy, et al., 2015b). As a consequence, even corporate scandals may evolve (Soltani, 2014). Interestingly, not only executives or managers high in greed try to exploit their organization, but this may also be the case for employees. As Bruhn and Lowrey (2012) find, greedy employees tend to be involved in manipulation and deception in order to achieve outcomes that they desire (Bruhn & Lowrey, 2012).

While salaried executives, managers, and employees high in greed tend to sacrifice organizational goals for their own desires (Bruhn & Lowrey, 2012; Haynes et al., 2017; Haynes, Josefy, et al., 2015b), the entrepreneur's personal gains are more directly related to the venture's performance and, therefore, the venture represents a means to attain these desires. For example, advancing the venture can contribute to satisfying the entrepreneur's material desires as the entrepreneur (at least partially) owns the venture and will directly benefit from high equity stake valuations (Hamilton, 2000). Further, advancing the venture might also contribute to reaching immaterial desires such as independence and fame (Hamilton, 2000). High venture performance not only allows the entrepreneur to develop a successful professional career within his or her own venture (Singh, Corner, & Pavlovich, 2007), but also entails more influence, e.g., in terms of leading more employees (Ensley, Hmieleski, & Pearce, 2006) or building a positive reputation as a successful entrepreneur (Schwienbacher, 2007). Therefore, it appears that entrepreneurs high in greed will strive to fulfill their desires by acting "pro-organizational" and successfully developing (rather than harming) their ventures.

The higher an entrepreneur's greed, the more desirable these positive outcomes of advancing the venture will appear. Strong desires and the connected limited self-control are likely to result in intense attempts to "tweak the chances" of the venture. Indeed, individuals higher in greed and with lower levels of self-control often tend to act unethically as a reaction to their strong desires (Bruhn & Lowrey, 2012; Schweitzer, Ordóñez, & Douma, 2004; Seuntjens et al., 2019). Driven by the hot system they focus on activities that can satisfy their desires more directly and tend to neglect more abstract values connected to the cool system that have a less direct effect on them. In particular, these individuals may break social norms, values, or laws in order to support their organization (Umphress & Bingham, 2011)..

As entrepreneurs have high levels of autonomy and discretion in decision making (Cassar, 2007; Hamilton, 2000) they indeed have the opportunity to act unethically in favor of the venture. This is because entrepreneurs often bundle a variety of different roles and are active in many different tasks (Baron & Tang, 2009), during which they are confronted with multiple hurdles and have to take multiple decisions (Busenitz & Barney, 1997). At the same time, the high uncertainty and a lack of information entrepreneurs have available (Busenitz & Barney, 1997) provide them with a greater variety in decision options.

Based on these arguments, I expect that entrepreneurs higher in greed are more likely to show unethical pro-organizational behavior. In an entrepreneurial context, unethical pro-organizational behavior could take many forms. For instance, as famously happened at Theranos, entrepreneurs may trick potential investors by presenting dummy products that imitate the actual, not yet sufficiently developed product (Kuratko, Holt, & Neubert, 2020). Alternatively, entrepreneurs may engage in bribery in order to get access to resources from governmental programs (Baron, Tang, Tang, & Zhang, 2018). Accordingly, I offer the following hypothesis:

Hypothesis 5: There is a positive relationship between entrepreneurs' level of greed and their tendency to engage in unethical pro-organizational behavior.

### **2.3.3 Trust, greed, and unethical pro-organizational behavior**

In this subsection I first introduce the construct of trust and connect it to the relationship between greed and unethical pro-organizational behavior. This part illustrates that trust consists of two components: Cognitive trust and affective trust. In the second part of this subsection, I provide the theoretical foundations for Hypothesis 6 that relates *cognitive trust* to greed and unethical pro-organizational behavior. In the third part, I theoretically derive Hypothesis 7 that connects *affective trust*, greed, and unethical pro-organizational behavior.

#### ***Trust, greed and unethical pro-organizational behavior***

Self-control theory postulates that an individual's ability to exert self-control and to abstain from fulfilling his or her immediate desires is contingent on enactment constraints, that is "environmental factors that limit one's behavioral options" (Kotabe & Hofmann, 2015, p. 620). Consistently, recent work on greed which has typically been conceptualized as a trait (Krekels & Pandelaere, 2015; Mussel & Hewig, 2016; Seuntjens, Zeelenberg, van de Ven, et al., 2015)

suggests that greed also has a situational component and can temporarily be elicited by specific situations (Lambie & Haugen, 2019; Seuntjens, 2016). In particular, the extent to which individuals high in greed are not able to exert self-control and act in a way that addresses their insatiable material and immaterial desires based on the dominance of their hot decision-making system is critically dependent on the social environment they are in (Bruhn & Lowrey, 2012; Haynes et al., 2017; Haynes, Josefy, et al., 2015b). For example, studies argue that in teams with high social cohesion, members are more likely to follow clear rules and face constraints within their environment (consistent with a predominant use of the cool system), which limits the range of acceptable behaviors (Bruhn & Lowrey, 2012).

As I describe in 2.2.4, trust is an important construct that provides insights on entrepreneurial teamwork (Khan et al., 2015; Zheng, 2012). For instance, trust promotes knowledge sharing in entrepreneurial teams (De Clercq, Dimov, & Thongpapanl, 2013) and mitigates the negative consequences of conflicts within the team (Blatt, 2009; Ensley, Pearson, & Amason, 2002). Various studies further indicate that higher levels of trust enhance the performance of the founding team (De Jong, Dirks, & Gillespie, 2016) and their ventures (De Jong & Elfring, 2010). Conceptually, a team member's trust in his or her team refers to "a belief in the dependability and trustworthiness of team members" (Tsai, Chi, Grandey, & Fung, 2012, p. 639) and is based on the willingness of this team member to be vulnerable to the actions of other team members (Mayer, Davis, & Schoorman, 1995).

Importantly, although many founding team studies treat trust as a unidimensional construct, the trust literature has established a two-dimensional model of trust and distinguishes between cognitive and affective trust (De Jong et al., 2016; McAllister, 1995). While cognitive trust refers to perceptions of "the reliability, integrity, and competence of others" and is therefore based on cognitive evaluations as triggered by individuals' cool system of decision making, affective trust includes "individuals' feelings of emotional involvement and others' genuine care and concern for their welfare" (De Jong et al., 2016, p. 15), consistent with the activation of the hot decision making system.

Indeed, cognitive and affective trust shape team members' behaviors in different ways (e.g., Schaubroeck, Lam, & Peng, 2011; Zhu & Akhtar, 2014). For example, whereas affective trust influences one's willingness to *share*, cognitive trust impacts the willingness to *use* tacit knowledge (Holste & Fields, 2010). Further, whereas cognitive trust in a leader positively impacts the perceptions on team capabilities, affective trust in a leader impacts common beliefs of the team being a safe environment (Schaubroeck et al., 2011). Given that one's level of self-

control influences the balance of the hot and the cool decision making systems (Metcalf & Mischel, 1999) and thus, how individuals act on greedy desires, distinguishing between cognitive and affective trust appears key to understand how entrepreneurs' greed influences their behavior in a team setting. Indeed, researchers call for a separate analysis of cognitive and affective trust (Fink, Harms, & Möllering, 2010; Khan et al., 2015). Thus, in the following, I build on the two-dimensional model of trust and elaborate on how cognitive trust acts as an inhibitor, and affective trust as a facilitator, in the greed—unethical pro-organizational behavior relationship.

### ***Cognitive trust, greed, and unethical pro-organizational behavior***

Cognitive trust refers to perceptions of “the reliability, integrity, and competence of others” (De Jong et al., 2016, p. 15). It is “grounded in individual beliefs about peer reliability and dependability” (McAllister, 1995, p. 25).

Consistent with the hot/cool systems approach of self-control theory (Metcalf & Mischel, 1999), entrepreneurs high in greed are more likely to act unethically as their hot, emotional system tends to dominate their cool, cognitive system. High cognitive trust among team members, however, might diminish the dominance of the hot over the cool system. Specifically, despite the material and immaterial desires of greedy entrepreneurs that could be fulfilled by pursuing unethical pro-organizational behavior, cognitive trust will prompt these entrepreneurs to exert more self-control. This is because cognitive trust is likely to trigger entrepreneurs' rational behavior (Zhu & Akhtar, 2014) based on the cool system, such that entrepreneurs high in greed may be prevented from breaking norms, values, or laws to advance their venture.

Specifically, high levels of cognitive trust are connected to team members' rather rational evaluation that the team is able to show high levels of performance and achieve its goals (Schaubroeck et al., 2011). Thus, the entrepreneurs will take a more reflective and goal-oriented perspective on their teams which is likely to resonate with the cool system of decision making (De Ridder et al., 2012). When the cool system dominates, entrepreneurs' actions tend to be rather self-controlled (Metcalf & Mischel, 1999) and they are likely more capable to control their greedy desires. As a consequence, more abstract values, such as honesty and integrity, tend to become salient for the entrepreneur, which diminishes their tendency to engage in unethical pro-organizational behavior.

Moreover, entrepreneurs with high cognitive trust in the team are convinced about their teammates' capabilities and skills (McAllister, 1995). The more competent they perceive these teammates to be, the more entrepreneurs believe in the teammates' abilities to understand how each team member (including the focal entrepreneur) performs his or her tasks. While entrepreneurs high in greed may be tempted by their personal desires to engage in unethical pro-organizational behavior, they are likely aware of their teammates being able to monitor their activities. This perception or anticipation of effective monitoring by the teammates is also likely to activate the entrepreneurs' cool system because entrepreneurs are more likely to engage in rational judgment. Thus, teammates' potential monitoring activities are likely to trigger entrepreneurs' self-control to comply with rules and norms. In making important decisions to advance the venture, the entrepreneurs in teams with high levels of cognitive trust are thus, more likely to engage the cool system to a larger extent, and at the expense of the hot system, thus, diminishing the tendency to act unethically to fulfill greedy desires by advancing the venture.

In sum, my theorizing suggests that higher levels of cognitive trust in their teammates can activate entrepreneurs' cool system and enhance their perceptions of being monitored. These perspectives on the team are likely to trigger self-control, thus, tipping the balance of greedy entrepreneurs' use of the cool vs. the hot system toward the cool system. As a consequence, the relationship between greed and unethical pro-organizational behavior diminishes. In contrast, greedy entrepreneurs with *low* cognitive trust in their teammates are less likely to experience a reinforcement of their cool system and also feel less monitored by their teammates, such that their evaluation of decision alternatives is dominated by the hot system making their greedy desires salient. Based on my arguments, I offer the following hypothesis:

Hypothesis 6: The relationship between entrepreneurs' level of greed and their tendency to engage in unethical pro-organizational behavior is moderated by cognitive trust, such that this relationship is less positive at higher levels of cognitive trust compared to lower levels of cognitive trust.

### ***Affective trust, greed, and unethical pro-organizational behavior***

Affective trust refers to "individuals' feelings of emotional involvement and others' genuine care and concern for their welfare" (De Jong et al., 2016, p. 15). This form of trust is "grounded in reciprocated interpersonal care and concern" (McAllister, 1995, p. 25).

Whereas cognitive trust activates the cool, cognitive system of decision making, affective trust bases on emotions (McAllister, 1995) and therefore is more likely to add to the hot decision making system (Metcalf & Mischel, 1999). Consequently, I expect that high affective trust further enhances the greedy entrepreneurs' use of the hot system in taking venture-related decisions, thus, making more likely an engagement in unethical pro-organizational behavior.

First, higher levels of affective trust are likely to shape entrepreneurs' feelings of being accepted by their teammates, such that they perceive the freedom and safety to try out different behaviors (Schaubroeck et al., 2011). These feelings of freedom and safety are likely to reinforce the dominance of the hot system in entrepreneurs' decision making because they give rise to impulsive behavior connected to the immediate gratification of personal desires (De Ridder et al., 2012). As a consequence, greedy entrepreneurs are less likely to feel the need to exert self-control. For example, entrepreneurs high in greed are more likely to break rules and norms to achieve desired outcomes because with more affective trust, they perceive their teammates to judge them and their activities in a favorable way (De Jong et al., 2016; Schaubroeck et al., 2011). Thus, affective trust provides a reinforcing condition for the dominance of greedy entrepreneurs' hot system in making venture-related decisions. Under these conditions, entrepreneurs high in greed may strive to fulfill their desires by experimenting with additional approaches to advance the venture, including those approaches that involve unethical pro-organizational behavior.

Second, high levels of affective trust involve feelings of care and concern for the team (Schaubroeck et al., 2011; Zhu & Akhtar, 2014), such that affective trust increases entrepreneurs' interest in their team's welfare (McAllister, 1995). For entrepreneurs high in greed, high levels of affective trust might thus, trigger the feeling that doing "whatever it takes" to advance the venture is well-justified because it benefits not only themselves but also the other team members. In making important decisions, entrepreneurs high in greed will therefore perceive few restrictions, which likely reduces their perceived need for self-control; instead, they are more likely to decide based on the hot system to fulfill their desires by advancing the venture, even if this includes engaging in unethical behavior.

Taken together, these arguments suggest that the perception of affective trust in their teammates strengthens the dominance of the hot system of decision making and provides a favorable condition for entrepreneurs to pursue their greed-related desires. Therefore, I propose the following hypothesis:

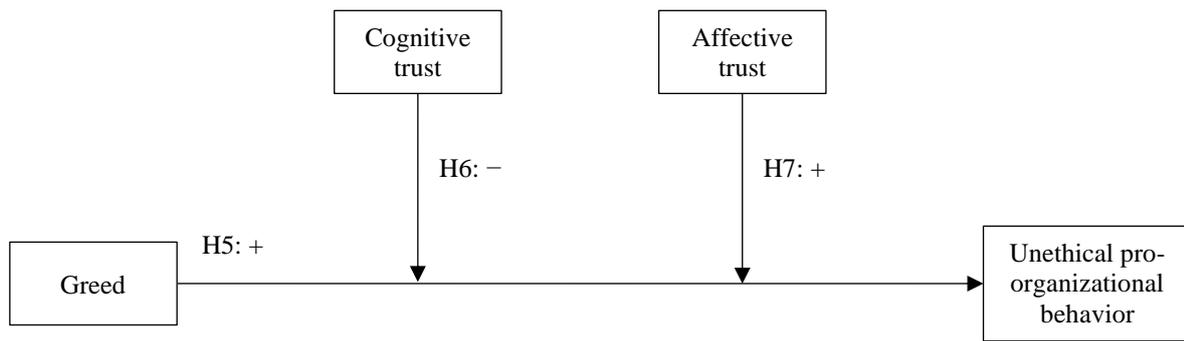
Hypothesis 7: The relationship between entrepreneurs' level of greed and their tendency to engage in unethical pro-organizational behavior is moderated by affective trust, such that this relationship is more positive at higher levels of affective trust compared to lower levels of affective trust.

### 2.3.4 Summary of unethical pro-organizational behavior model's hypotheses

Consistent with the hot/cool systems approach to self-control theory (Metcalf & Mischel, 1999), I hypothesize a positive relationship between entrepreneurs' greed and their tendency to engage in unethical pro-organizational behavior (Hypothesis 5). I further hypothesize that this relationship between entrepreneurs' greed and unethical pro-organizational behavior is moderated by the two dimensions of trust, namely cognitive and affective trust. Specifically, I postulate that the relationship between entrepreneurs' greed and unethical pro-organizational behavior is moderated by cognitive trust such that the relationship is more positive for comparably *low cognitive trust* (Hypothesis 6) and comparably *high affective trust* (Hypothesis 7). Table 2 contains an overview of these hypotheses. Figure 2 represents a graphical illustration of the model and the corresponding hypotheses.

Hypothesis 5	There is a positive relationship between entrepreneurs' level of greed and their tendency to engage in unethical pro-organizational behavior.
Hypothesis 6	The relationship between entrepreneurs' level of greed and their tendency to engage in unethical pro-organizational behavior is moderated by cognitive trust, such that this relationship is less positive at higher levels of cognitive trust compared to lower levels of cognitive trust.
Hypothesis 7	The relationship between entrepreneurs' level of greed and their tendency to engage in unethical pro-organizational behavior is moderated by affective trust, such that this relationship is more positive at higher levels of affective trust compared to lower levels of affective trust.

**Table 2: Summary of hypotheses in unethical pro-organizational behavior model (own illustration)**



**Figure 2: Graphical illustration of conceptual unethical pro-organizational behavior model (own illustration); H stands for Hypothesis; + refers to a hypothesized positive relationship; - refers to a hypothesized negative relationship**

### **3. Methodology**

In this chapter I describe the methodological approach of this dissertation in detail. Specifically, I first explain how I collected the data this dissertation builds upon (section 3.1). Thereafter, I present the sample that emerged from the data collection (section 3.2). Subsequently, I describe the measures and constructs I captured data on (section 3.3). And finally, I point out how I conducted the statistical analysis of the data (section 3.4).

#### **3.1 The BEST study**

The data of this thesis originates from a joint data collection together with other PhD-candidates at the Entrepreneurship Research Institute of the Technical University of Munich, Aishwarya Kakatkar, Carolin Feldmeier, and Max Haase. Two professors from the Entrepreneurship Research Institute, namely Professor Nicola Breugst and Professor Holger Patzelt, supervised this data collection. As most ventures are founded and led by teams (Klotz, Hmieleski, Bradley, & Busenitz, 2014) and as the team plays an important role for startup development and startup performance (e.g., Carland & Carland, 2012; Klotz et al., 2014; Lechler, 2001), the data collection focused only on ventures founded by more than one entrepreneur. Accordingly, we conducted the data collection under the name of BEST study, an acronym for Building Entrepreneurial Success Teams.

We – in the following referred to as BEST team – collected the data in a joint effort as the effort for the overall project was so great that it required the cooperation of several partners. The cooperation further seemed reasonable as the four of us needed to collect data for our research at about the same point in time. By cooperating we avoided to cannibalize our efforts in looking for participants for individual studies. Moreover, we expected great synergies from a joint data collection. These synergies lay not only in the acquisition of participants, but also in the technical preparation prior to the study, the administration of our participants during the study, and the management of rewards we offered to our participants in the aftermath of the study.

We took the decision to conduct the BEST study in July 2018. This also marks the beginning of our study as we started with the preparation phase still in July 2018. The actual data collection began in October 2018 and ended in September 2019. In the following, I present the activities of the BEST study following the study's schedule (Figure 3). These activities can be grouped into four work packages, the preparation package (3.1.1), the recruitment package (3.1.2), the data collection package (3.1.3) and the follow-up package (3.1.4).

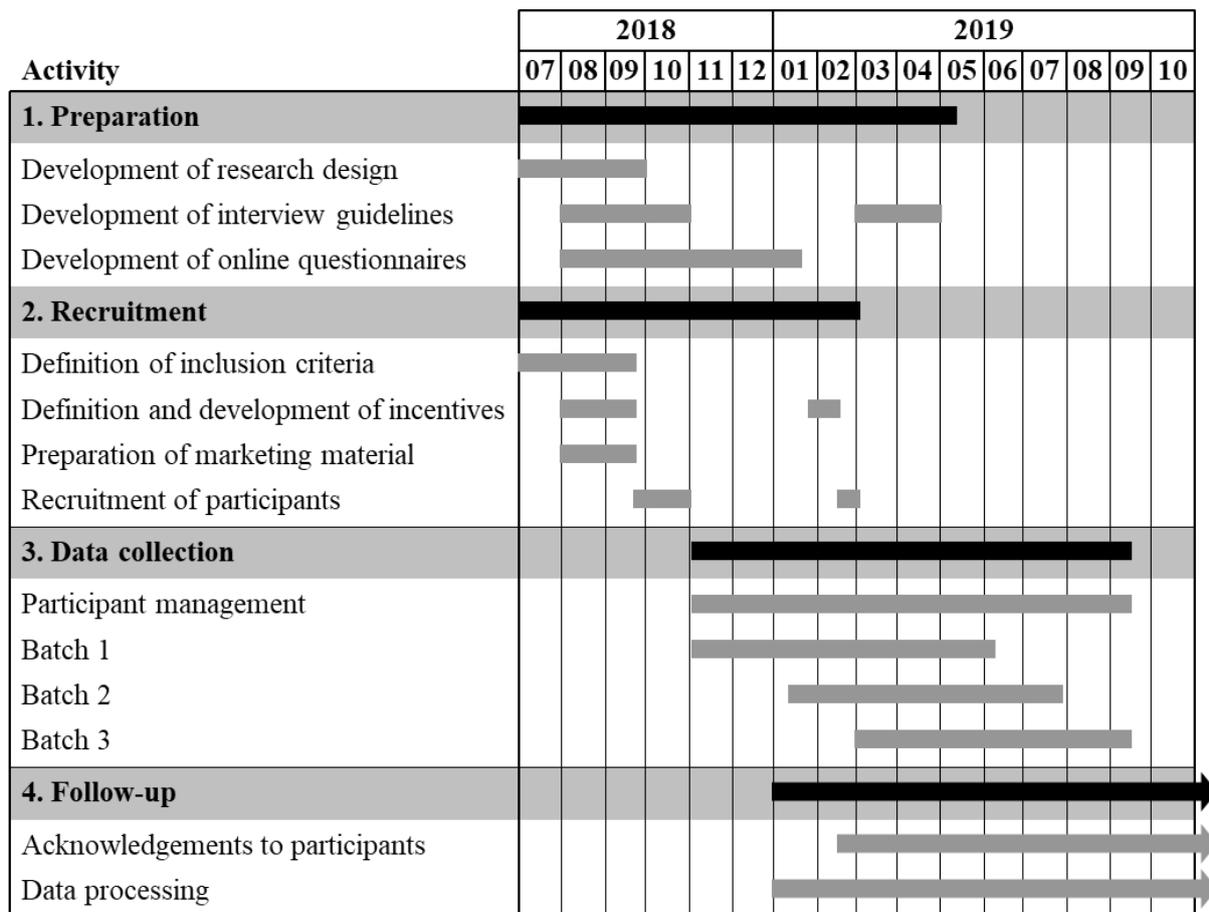


Figure 3: BEST study schedule (own illustration)

### 3.1.1 Preparation

The preparation of the study was separated into three work packages. First, we developed the research design. Second, we developed the interview guidelines and, third, the online questionnaires.

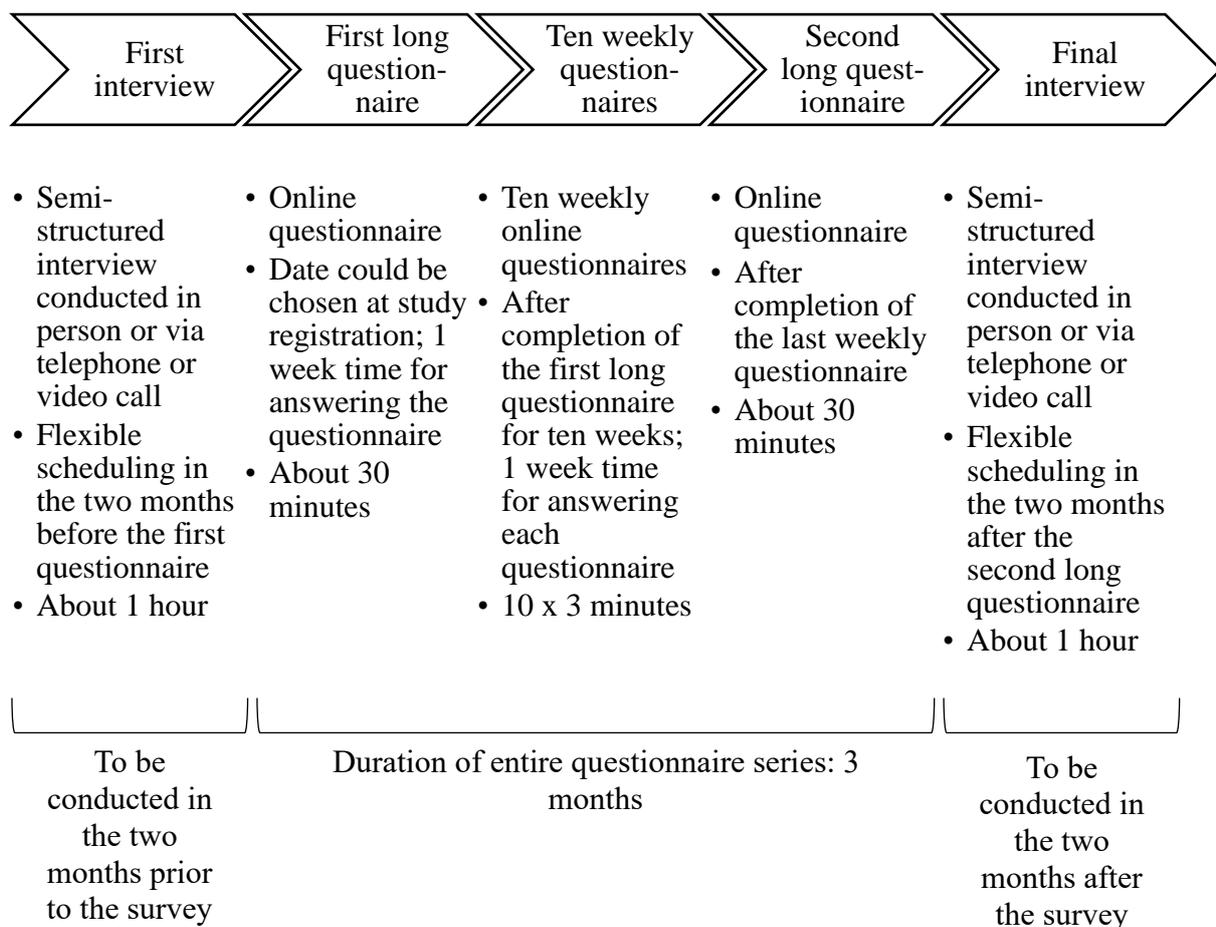
#### *Development of research design*

In order to combine and account for the different research interests of the BEST Team, the study included qualitative and quantitative elements. A comprehensive data collection including qualitative and quantitative elements was important due to the diverse research interests of us and the need to gain deep knowledge about the research topics. Aishwarya Kakatkar's research interests were on entrepreneurial identity and the development of values. Carolin Feldmeier's

research focus lay on psychological detachment from work. Max Haase investigated entrepreneurial motivation. And my research interest lay on the entrepreneurial personality.

Besides data on the individual and on the team, we captured data on the venture and the environment. In close collaboration with our supervisors, Professor Nicola Breugst and Professor Holger Patzelt, we created a research design that included two semi-structured interviews, two long questionnaires and 10 short, weekly questionnaires.

As illustrated in Figure 4, our study design provided that after study registration, our participants started with a semi-structured interview that was expected to take about one hour. This interview could be conducted in person if the venture was based in the Munich area or via telephone or online video call. Each participant had to schedule his or her interview within a time frame of two months. We wanted to start our study with an interview because it provided the opportunity to get to know each other, to create emotional bonds and to thus, increase the likelihood that the participants complete the entire study.



**Figure 4: BEST study design from a participant's perspective (own illustration)**

After the first interview, the questionnaire series started. For the online questionnaires, we used the tool Unipark that provides the opportunity to optimize the surveys to both desktop and mobile devices. The questionnaires series consisted of 12 questionnaires: The series began and ended with a long questionnaire to capture demographic data, venture-level data as well as mainly constructs that are rather stable over time. Both of these questionnaires took our participants about 30 minutes to answer. In between, there were 10 short weekly questionnaires with an estimated response time of about three minutes each. The constructs captured in the short weekly questionnaires are rather unstable and the score for each individual may change from week to week (e.g., weekly working time, current affect). As we asked our participants to answer the questionnaires week by week, the series was scheduled for 12 weeks in total.

At the end of the data collection, we conducted another semi-structured interview of about one hour. During this interview, our participants mainly reflected upon the time of our study. Besides that, they provided us with a glimpse into the future. This last interview was also important for us as it gave us the opportunity to thank our participants personally.

Adding up one hour for the first interview, 30 minutes for the first long questionnaire, in total 30 minutes for the 10 weekly questionnaires, 30 minutes for the second long questionnaire, and one hour for the final interview, we asked our participants to spend about 3.5 hours for our study. These 3.5 hours incurred in a time frame of 3 to 7 months, contingent on the interview scheduling of the participant.

### ***Development of interview guidelines***

As first element of our data collection, we planned on doing interviews with founders individually. The purpose of the first interview was not only to capture data on the venture, team and individual, but also to get to know each other, to establish a personal relationship and a level of trust. The ideal tool to serve these purposes was the semi-structured interview, a common method for collecting data (Kallio, Pietilä, Johnson, & Kangasniemi, 2016).

The semi-structured interview is conceptually placed between the structured interview, an interview following a strict set of questions in a strict order, sometimes involving time limits for the answer, and the unstructured interview, an interview with a few to no pre-defined questions (Myers, 2013). The semi-structured interview tries to combine the advantages of both “extreme” forms of the interview – on one side the comparability between interviews because

of the structured approach and on the other side the possibility for the interviewee to talk freely due to the unstructured conversation of an unstructured interview (Myers, 2013). Edwards and Holland (2013) state that in comparison to a structured interview, a semi-structured interview provides more flexibility to the interviewer. The latter, too, bases on a list of topics and questions the interviewer wants to cover in the interview. But he or she has more flexibility in doing so. A semi-structured interview promotes a real conversation as it lets the interviewee answer the question in his or her own terms and it allows the interviewer to adapt the wording depending on the interviewee and to dig deeper whenever it seems promising (Edwards & Holland, 2013). This open conversation helps to enable an environment of reciprocity between the interviewer and the interviewee (Kallio et al., 2016). At the same time, the structuring elements of a semi-structured interview prevents interviewees to become too talkative and to lose focus (Myers, 2013). And still, due to the rough structuring there is the possibility to compare several semi-structured interviews (Edwards & Holland, 2013).

We developed the interview guidelines taking into account that an interview should last about one hour in order to not take up too much time of the interviewees. The development of the interview guides for both the first interview at the beginning of our data collection and the final interview at the end of our data collection, followed the same approach inspired by that of Kallio et al. (2016):

1. The BEST team agreed on general topics we wanted to cover in the interview and on the expected amount of time we wanted to spend on each topic.
2. We formulated exemplary questions for the topics and created an interview guide. Following Kallio et al. (2016), we formulated questions for the main topics as well as potential follow-up questions that we could ask contingent on the previous answer.
3. We did internal testing among the BEST team and applied some changes.
4. We started interviewing first participants.
5. After each of the interviewers had conducted two to three interviews, we revised the interview guide and we adapted the guide accordingly.

Most of our participants were native German speakers. Though, we also had some non-German-speaking participants in our sample. Therefore, we developed both questionnaires in German and English.

Before actually starting with the *first interview*, we presented ourselves to the interviewee. This is an important element of the semi-structured interview because it helps “to establish rapport, to create an adequate environment, and to elicit reflection and truthful comments from the

interviewee” (Rabionet, 2011, p. 564). We further addressed some organizational topics: For instance, we asked our participants to fill out the data protection clause and to register for a starting date of the questionnaire series if this had not been done prior to the interview. Lastly, we asked whether the list of registered founding team members was complete. Then, we started the recording and began with the actual interview. The first interview was structured regarding the category of information we wanted to capture. As such, we started with the venture as first category, went on with the team as second category and finally got to the individual as third category. This way we wanted to make our interviewees feel more comfortable and to take away some of their inhibitions before we came to the personal questions. We further included a “bonus question” that we asked in case we had time for it. For an overview of interview categories, topics and exemplary questions please see Table 3. After the interview, we stopped recording and gave an outlook on what the interviewee has to expect regarding the questionnaire series.

As with the first interview, we started the *final interview* addressing some organizational questions if needed. Due to the fact that the final interview took place after the questionnaire series, we had the opportunity to clear some doubts or inconsistencies regarding their answers in the online questionnaires. Subsequently, we started the recording and began interviewing. This interview was subdivided into four parts: a review on what had happened since the first interview, questions regarding the company, questions regarding the founding team, and finally an outlook into the future (Table 3). After the interview, we thanked for the participation in the study and informed the participant about the incentives the team could now make use of (see page 57).

Category	Topic	Exemplary questions
<i>First interview</i>		
Venture	Product/ service	I'm interested in what your company does exactly. Please tell me a bit about it.
	Emergence	How did you come up with your business idea?
	Equity distribution	How are the company shares split up amongst yourselves? How did this distribution come about?
	Image	What is the picture or image of your company that you want to create for important stakeholders [customers, investors]?
	Goals	What are your short- [5 months] and long-term [3-5 years] goals for the company?
Team	Special characteristics	What makes your team special? What are special characteristics?
	Roles	What are the roles of the founders (within the founding team)?

Category	Topic	Exemplary questions
	Personal role	What task is most meaningful to you?
	Compromises	In which situations did you have to be flexible because of your team or making compromises?
	Stress	Please think about a situation in which you and your team were very stressed: take me through the situation. What kind of situation was it?
	Coping	How do you deal with it, as a team, when one of your team members is feeling especially stressed?
Individual	Procrastination	In a startup, a lot of unexpected things can come up. How do you, personally, deal with this?
	Psychological detachment	What does "non-work time" mean to you?
	Stress	Have you ever been on the verge of quitting and throwing everything away? If so, why?
	Behavior	Let's try a thought experiment: I will give you three different situations in which you should introduce yourself. Feel free to think back to a similar situation you experienced in the past. First, please imagine you are at a party. How would you introduce yourself here [to a guest you don't know]?  What would you answer if someone were to ask you, what it is you do (in terms of your job)?  In the second situation, please imagine that you are giving a talk as a guest speaker at a university. How would you introduce yourself here? -  And the third and last situation is when you meet a potential investor for the first time. How would you introduce yourself?
	Greed	Steve Jobs once said that it is important to always be hungry (for more). What do you think about this? Would you say this applies to you? [June 2005: Steve Jobs' speech at graduation ceremony at Stanford University.]  What is it that you are hungry for in your company?
Bonus	Best moment	Please describe the best, most memorable moment for you since (operationally) founding.
<i>Second interview</i>		
Review	Venture	What has happened in the months since our interview at your company?
	Team	Have there been any changes in the founding team since then?
	Goal progress and development	Did these changes influence your company goals?
	Financing	Are you currently looking for new sources of financing?
Venture	Artifacts / symbols of venture image	Could you please tell me how you came up with the company name?
	Industry	To which industry do you feel your company belongs? Which industry is important for company?
	Resource scarcity	I would like to review your entrepreneurial journey until today with you. Imagine that on this journey you would have had infinitely many resources available for your company (e.g., in the form of money or employees). In what ways would this journey have been different?
Team	Relations/ friendship/ idea adaption	How would you describe your current relationship with your co-founders?
	Hierarchy	How do you make decisions in the team, especially if you don't all agree? Can you give me an example?

Category	Topic	Exemplary questions
	Psychological detachment and imprinting (employees)	How many employees report directly to you? What is your relationship to your employees?
Outlook	Exit plans	Have you already thought about exit options? And if yes, which ones?
	Company vision	What would you most like to read about [COMPANY NAME] in the newspaper in 10 years?
	Personal vision	What would you most like to read about yourself in the newspaper in 10 years?

**Table 3: Content of interview guides (own illustration)**

Even though my research and this dissertation bases on quantitative data, the interviews were very insightful for me. The interviews helped me to better understand the role of greed in entrepreneurial ventures. This was very helpful as research on greed in organizational contexts is limited (Haynes et al., 2017). Moreover, the interviews helped me to gain knowledge about the issues entrepreneurial ventures have to overcome, the team dynamics in entrepreneurial teams and ventures, and how individual background and personality (including greed) affects entrepreneurial behavior.

### *Development of online questionnaires*

For collecting quantitative data, we used online surveys. Online surveys are a well-established tool for collecting data in various fields, including entrepreneurship (e.g. Breugst, Domurath, Patzelt, & Klaukien, 2012; Mitchelmore & Rowley, 2013). The most important advantages of online surveys are that they provide easy access to a large group of participants, are comparably time-efficient for the researchers and are cheap compared to a paper survey (Wright, 2005). In total, we developed twelve online questionnaires. Two longer questionnaires placed at the start and the end of our twelve-week questionnaire series and in between ten shorter questionnaires.

After we individually defined the constructs we wanted to measure in our study, we looked for suitable scales for measuring these constructs. In particular, we focused on scales from the disciplines of psychology, management, or entrepreneurship. We used several criteria for identifying the best scales for measuring our constructs. First, the content of the scale should match the content of the research question under investigation. This is not always the case as some scales are not applicable across different scientific fields or base on a different definition of the construct. Second, the scale should be academically validated. In order to evaluate the validation of a scale, we took into account how often the scale had been used (cited) by other scholars and the Cronbach's alpha value that the scales yielded in former studies (should be 0.7

or higher; e.g. Taber, 2018). Third, the scale should be rather short as it should not take too much time for the participants to answer the questionnaires.

Ultimately, our questionnaires included scales from four levels of analysis: the individual, the entrepreneurial team, the venture and the environment. Table 4 gives an overview over the constructs and demographic data that we measured in our surveys. It shows that the longest scale we used consists of 11 items. It further illustrates that, whenever possible, we used a 1 to 7 Likert scale as response format because it has shown favorable features (Beal & Dawson, 2007; Preston & Colman, 2000). For some constructs and demographical data, we did not find an established measurement that fulfilled our above-mentioned criteria. In this case, we either self-developed the measure items or we used a measure from a former BEST data collection conducted at our institute. With the help of German native speakers and English native speakers, we translated the scales to German and therefore could provide questionnaires in German and English to our participants.

Whereas online questionnaires provide some advantages (Frippiat, Marquis, & Wiles-Portier, 2010; Wright, 2005), there are also some challenges that go along with online questionnaires. Wright (2005) sees two major challenges for online questionnaires: sampling issues and access issues. For instance, as described in 3.1.2, we addressed sampling errors and followed the proposition by Wright (2005) to offer non-financial incentives for participation in order to increase the response rate. Moreover, as described in 3.4.3, we controlled for potential biases like the nonresponse bias. Regarding access and survey design issues, we followed the recommendations of Baatard (2012) for designing online surveys.

Consistent with the recommendations of Baatard (2012), each participant received an e-mail with information on the survey series. Besides that, each questionnaire started with a “welcome page” including some important information for our participants. We informed the participants about the option to change the questionnaire’s language and about the estimated answering time. We further included a request to fill in the questionnaire as accurately as possible as this would contribute to the quality of feedback, we could give the participants after the study. In addition, we suggested to answer the questionnaire until the upcoming Monday (they received it on Friday), in order to be able to reflect on the past week. Moreover, we provided our contact information. In the long questionnaires, we further addressed confidentiality issues. The questionnaires were easily accessible as participants could answer the questionnaire using both desktop devices and mobile devices. No specific software was required. The questionnaire itself was well-structured and had a clearly arranged layout (Baatard, 2012). Each questionnaire

ended with a “final page” comprising a thank you to our participants and information on the next steps of our Study.

Level	Construct/ data	No. Items	Response format	LQ1 <sup>1</sup>	SQ <sup>2</sup>	LQ2 <sup>3</sup>	Source
Individual	Age (year of birth)	1	Number	x			<i>Previous BEST projects</i>
Individual	Behavioral procrastination	6	Likert 1-7	x		x	Kühnel, Bledow, and Feuerhahn (2016)
Individual	Boundary reinforcement	4	Likert 1-7	x		x	Faraj and Yan (2009)
Individual	Boundary spanning	4	Likert 1-7	x		x	Faraj and Yan (2009)
Individual	Children in household	1	Whole number	x			<i>Own wording</i>
Individual	Education	2	List	x			<i>Own wording</i>
Individual	Entrepreneurial self-efficacy	4	Likert 1-7	x		x	Zhao, Seibert, and Hills (2005)
Individual	Exit intentions	1	Likert 1-7			x	<i>Own wording</i>
Individual	Explorative/ exploitative behavior	11	Likert 1-7			x	Mom et al. (2007)
Individual	Gender	1	List	x			Dimov (2010)
Individual	Greed	7	Likert 1-7	x		x	Seuntjens, Zeelenberg, van de Ven, et al. (2015)
Individual	Impression management	4	Likert 1-7	x		x	Bolino and Turnley (1999)
Individual	Parents founders	1	Yes/ No	x			Dimov (2010)
Individual	Part-time work	1	Percent	x			Dimov (2010)
Individual	Prior founding experience	1	Whole number	x			<i>Own wording</i>
Individual	Psychological detachment	4	Likert 1-7	x		x	Sonnentag and Fritz (2007)
Individual	Relationship status	1	List	x			PSED
Individual	Resilience	3	Likert 1-7	x		x	Luthans, Avolio, Avey, and Norman (2007)
Individual	Self-monitoring ability	6	Likert 1-7			x	Lennox and Wolfe (1984)
Individual	Social desirability	7	Yes/ No			x	Strahan and Gerbasi (1972)
Individual	Task uncertainty	4	Likert 1-7	x		x	Withey, Daft, and Cooper (1983)
Individual	Thinking about errors	5	Likert 1-7	x		x	(Rybowiak, Garst, Frese, & Batinic, 1999)
Individual	Big Five	10	Likert 1-7	x			Gosling, Rentfrow, and Swann (2003)

Level	Construct/ data	No. Items	Response format	LQ1 <sup>1</sup>	SQ <sup>2</sup>	LQ2 <sup>3</sup>	Source
Individual	Unethical pro-organizational behavior	6	Likert 1-7			x	Umphress et al. (2010)
Individual	Values	7	Likert 1-7	x			Agle, Mitchell, and Sonnenfeld (1999)
Individual	Work experience	3	Number	x			<i>Own wording</i>
Individual	Work stress	4	Likert 1-7	x		x	Motowidlo, Packard, and Manning (1986)
Individual	Creativity	3	Likert 1-7	x	x	x	Janssen (2000)
Individual	Effort	1	Number	x	x	x	<i>Previous BEST projects</i>
Individual	Positive and negative affect (PANAS)	10	Likert 1-7	x	x	x	Thompson (2007)
Individual	Psychological detachment (weekly) <sup>4</sup>	2	Likert 1-7	x	x	x	Sonnentag and Fritz (2007)
Individual	Work stress (weekly) <sup>4</sup>	4	Likert 1-7	x	x	x	Motowidlo et al. (1986)
Team	Error communication	4	Likert 1-7	x		x	Rybowiak et al. (1999)
Team	Friendship quality	5	Likert 1-7	x		x	Parks and Floyd (1996)
Team	Prior relationship	1	List & text field for "other"	x			PSED
Team	Relative contribution	1	0-100 adding up to 100	x		x	<i>Own wording</i>
Team	Resource scarcity	3	Likert 1-7	x		x	Faraj and Yan (2009)
Team	Team coping/ Dyadic coping	7	Likert 1-7	x		x	Bodenmann (1997)
Team	Team member effort	5	Likert 1-7	x		x	De Jong and Elfring (2010)
Team	Team performance	4	Likert 1-7	x		x	Shaw et al. (2011)
Team	Team reflexivity	4	Likert 1-7	x		x	De Dreu (2007)
Team	Team satisfaction	3	Likert 1-7	x		x	Jehn, Rispens, and Thatcher (2010)
Team	Team tenure: Current founding team	1	Date	x			<i>Previous BEST projects</i>
Team	Team tenure: Initial founding team	1	Date	x			<i>Previous BEST projects</i>
Team	Trust (cognitive and affective)	11	Likert 1-7	x		x	McAllister (1995)
Team	Team interaction	1	Number	x	x	x	<i>Own wording</i>
Team	Team satisfaction (weekly) <sup>4</sup>	3	Likert 1-7	x	x	x	Jehn et al. (2010)
Venture	Employees (historical, current, future)	3	Number	x		x	<i>Previous BEST projects; own wording</i>

Level	Construct/ data	No. Items	Response format	LQ1 <sup>1</sup>	SQ <sup>2</sup>	LQ2 <sup>3</sup>	Source
Venture	Expected revenue growth	3	Percent	x		x	<i>Previous BEST projects</i>
Venture	Financial resources	1	List & text field for “other”			x	<i>Previous BEST projects</i>
Venture	Foundation	1	Yes/ No	x			<i>Previous BEST projects</i>
Venture	Foundation date	1	Date	x			<i>Own wording</i>
Venture	Hitech (PSED)	1	Yes/ No			x	PSED
Venture	Incubator	1	Yes/ No			x	<i>Own wording</i>
Venture	Incubator time	1	Date			x	<i>Own wording</i>
Venture	Industry	1	List & text field for “other”	x			<i>Previous BEST projects; own wording</i>
Venture	Innovativeness (PSED)	4	Likert 1-7			x	PSED
Venture	Opportunity recognition beliefs	5	Likert 1-7	x		x	Gregoire, Shepherd, and Schurer Lambert (2010)
Venture	Perceived performance	4	Likert 1-7	x		x	De Clercq and Sapienza (2006)
Venture	Planned founding date	1	Date	x			<i>Own wording</i>
Venture	Progress	4	Likert 1-7	x		x	Brunstein (1993)
Venture	Revenue growth (historical)	3	Percent	x			<i>Own wording</i>
Venture	Revenues	1	Yes/ No	x		x	<i>Own wording</i>
Venture	Sufficiency financial resources	1	Likert 1-7			x	<i>Own wording</i>
Venture	Goal progress	2	Likert 1-7	x	x	x	Brunstein (1993)
Venture	Opportunity adaption	2	Likert 1-7	x	x	x	<i>Own wording</i>
Venture	Progress	2	Likert 1-7	x	x	x	<i>Own wording</i>
Venture	Setbacks	2	Likert 1-7	x	x	x	<i>Own wording</i>
Environment	Environmental dynamism	7	Likert 1-7			x	Green, Covin, and Slevin (2008); Garrett Jr. and Covin (2015)
Environment	Environmental hostility	7	Likert 1-7			x	Green et al. (2008); Garrett Jr. and Covin (2015)

**Table 4: Construct list of BEST online questionnaires (own illustration); <sup>1</sup>LQ1 stands for the first long questionnaire; <sup>2</sup>SQ stands for the short questionnaires; <sup>3</sup>LQ2 stands for the second long questionnaire; <sup>4</sup>some scales are used twice in the same long questionnaire with different phrasing contingent on the time frame the scale corresponds to (e.g., “in the last seven days” for the short questionnaire version or “in the last 3 months” for the long questionnaire version)**

### 3.1.2 Recruitment

The target of this study was to recruit more than 100 complete entrepreneurial teams to participate in our study and to retain them throughout the course of the study. This paragraph illustrates how we managed to accomplish this goal by illustrating the recruitment procedure. Prior to the acquisition of participants, we defined criteria that participants had to meet to participate in our study. We defined and developed incentives that we could offer to our participants for participation and we prepared marketing material. Thereafter, we dived into the actual recruiting activities. In the following, I will go into more detail about these steps.

#### *Definition of inclusion criteria*

As first step of our recruiting activities, we agreed on criteria that our participants had to fulfill. First, we defined criteria to specify which ventures could participate in our study. Second, we defined criteria for the individual entrepreneur that determined which individuals are eligible for participating in our study.

We defined a venture as “a firm that is in its early stages of development and growth” (Klotz et al., 2014, p. 277). Participating ventures had to fulfill the following criteria and should not be eliminated by the exclusion criterion:

- *Venture age:* In line with extensive literature, we stipulated that the participating ventures should not be older than 6 years (Amason, Shrader, & Tompson, 2006; Lechler, 2001; Zahra, Ireland, & Hitt, 2000). Additionally, we included ventures that were not yet legally founded but where the venture teams had a profound intention to found the venture. This way, ventures that had not yet carried out the legal foundation in order to be applicable for startup support programs (e.g., EXIST, a support program of the Federal Ministry of Economics and Energy of the Federal Republic of Germany) could participate in our study.
- *Venture location:* Only startups that were primarily operating in Germany were eligible to participate in our study. This way we eliminated potential country-specific effects due to cultural (Grilo & Thurik, 2005; Lee & Peterson, 2000), institutional (Aidis, Estrin, & Mickiewicz, 2008; Busenitz, Gomez, & Spencer, 2000), or economic factors (Spencer & Gomez, 2004).
- *Exclusion criterion/ spin-offs:* We excluded ventures that were spin-offs of an established corporate from our study. This is because in spin-offs, the entrepreneur’s

autonomy in decision making is potentially constrained by the parent company (Koster, 2004).

We defined an entrepreneurial team as “two or more individuals who pursue a new business idea, are involved in its subsequent management, and share ownership” (Lazar et al., 2020, p. 29). Following Ensley et al. (2002, p. 372), we considered an individual to be part of the entrepreneurial team if he or she fulfilled at least two of the three following criteria:

- *Founder*: The individual has founded the venture.
- *Shareholder*: The individual holds an equity share of at least 10%.
- *Decision maker*: The individual is actively involved in strategic decision making.

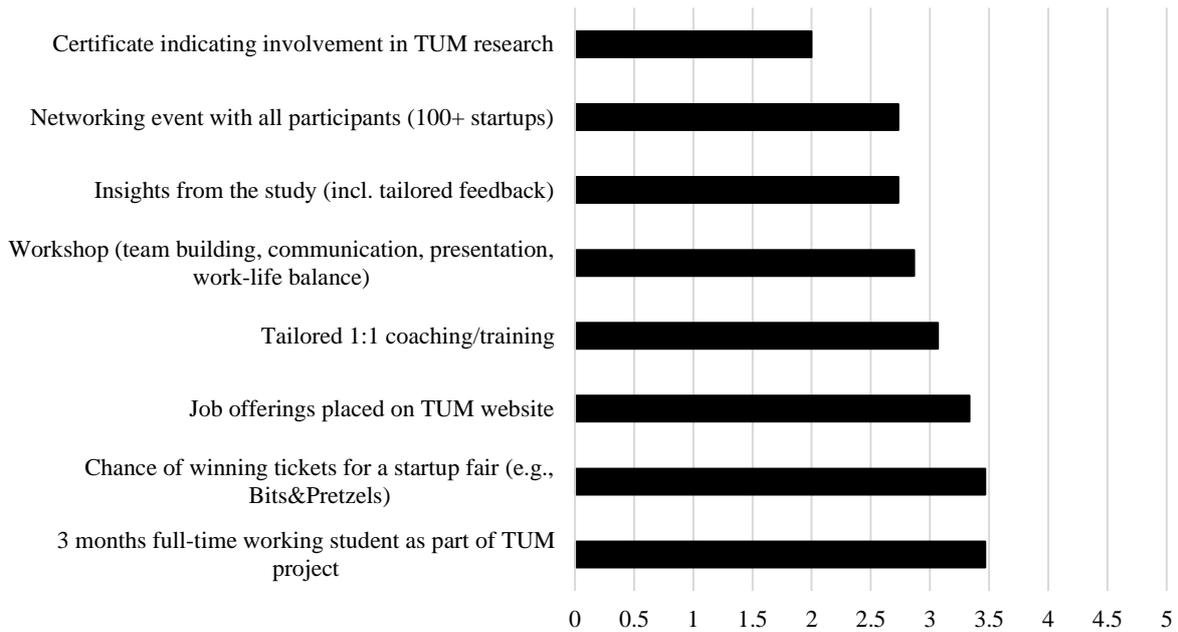
### ***Definition and development of incentives***

Entrepreneurs tend to work long hours and under comparably high pressure (Cardon & Patel, 2015; Martinez, Mora, & Vila, 2007). As our study design consisted of qualitative and quantitative elements and therefore required substantive time investments by our participants, we anticipated that the hurdle for participants to take part was comparably high. In order to convince the participants to take part in our study and in order to show gratitude to our participants for participation, we offered some incentives. Indeed, incentives represent a suitable tool for motivating people to start participating in a study and to stay with the study until the end (Göriz, 2006).

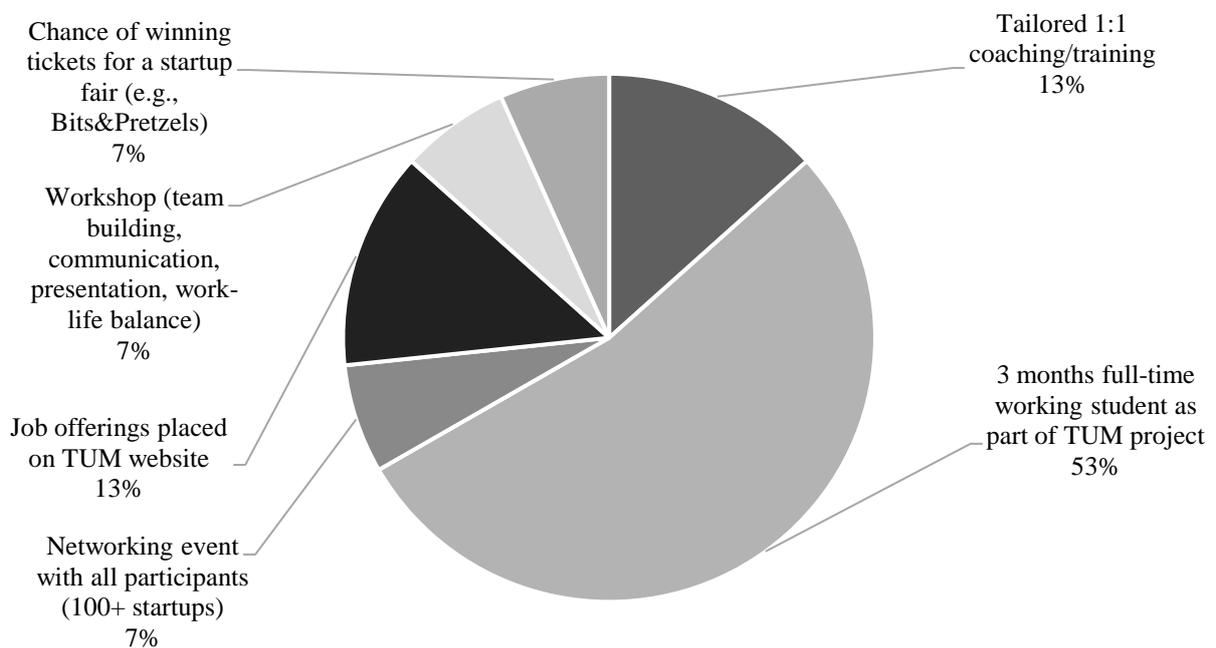
In order to define attractive incentives, we conducted a pre-study on the attractiveness on a set of incentives with 15 nascent entrepreneurs. On a Likert scale from one to five, we asked the participants to rate the attractiveness of eight potential incentives. As Figure 5 shows, the most attractive incentives were a three-month full-time working student as part of a TUM<sup>4</sup> project to support the venture (rating of 3.47), the chance of winning tickets for a startup fair (rating of 3.47) and the placement of job offerings on the website of our institute (rating of 3.33). Nevertheless, all of the proposed incentives turned out to be quite valuable to the nascent entrepreneurs. In another question, we asked the participants to indicate which of the eight incentives would be most attractive for them. Figure 6 shows that by far the most attractive incentive was the three-month full-time working student as part of a TUM project.

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<sup>4</sup> TUM is an acronym for Technical University of Munich, the institution of the research team.



**Figure 5: Incentive attractivity rating (own illustration); n = 15; response formant: 1 to 5 Likert scale**



**Figure 6: Most attractive incentives (own illustration); n = 15**

Based on these findings and a rough cost-benefit analysis, we offered five incentives to our participants:

- *Access to free support from TUM students:* This included 3-month full-time project studies as well as Bachelor or Master theses that could be conducted by students under supervision of the BEST team.
- *Internship/ job advertisement placements:* The participants could send offers for internships and jobs that the BEST team published on the institute's web page.
- *BEST workshop event:* In this event that took place after our study, we bundled several incentives including 1:1 coaching, specialized breakout sessions, keynotes speeches from leading Entrepreneurship professors and C-level speakers from a leading center for innovation and startups which is a cooperative partner of the institute, and networking opportunities for all our participants.
- *Certificate:* Each participating team received a certificate of participation.
- *Individual report:* Each participant received an individualized, actionable analysis of the results of the individual and the team in comparison with more than 250 individual participants and 100 entrepreneurial teams.

During the course of the data collection, we sent two postcards and a ginger bread to our participants. The rationale behind this was to maintain the personal bond and to motivate our participants to keep on participating until the end of the study.

### ***Preparation of marketing material***

We contacted participants with three different approaches: First, we asked entrepreneurs for participation *in person*, for example at events. Second, we contacted *intermediaries*, for example staff of an incubator, who then would ask entrepreneurs for participation. Third, we contacted startups via *e-mail without prior contact*. In order to support our marketing activities and to convince entrepreneurs to participate in our study, we created a set of marketing material that we combined contingent on the information demands of these three contact groups.

The marketing material comprised:

- *Webpage:* As a subside on the webpage of our institute at the TUM, we created a webpage that informed about our study<sup>5</sup>. At the top of the page, we included the study's logo. In German and English, we informed potential participants about the purpose of our study, the above-described bonuses for participation, participation criteria, the

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<sup>5</sup> Link: [www.ent.wi.tum.de/best](http://www.ent.wi.tum.de/best)

study's schedule, and the research team. Moreover, we provided contact details and included a link to the study's registration form (see webpage in 7.1).

- *Leaflet:* We created a leaflet comprising the information from the website in an aggregated form. Moreover, the leaflet included a QR-code, a code that could be scanned by mobile devices routing potential participants to our webpage (see leaflet in 7.2).
- *Business cards:* Each BEST team member had a two-sided business card. One side contained the team member's contact details, and the other side included the study's logo and two links (one QR-code and one written-out link) to our webpage.
- *E-mails:* Using the e-mail marketing service Mailchimp<sup>6</sup>, we created marketing e-mails including aggregated information on our study as well as a link to our webpage. Mailchimp helped us to create e-mails in a professional layout, to keep track of whom we contacted and to automate the personalization of the e-mails (including the potential participant's name and his or her venture's name, when available). We sent all e-mails from an institutional e-mail account, specifically created for this study, in order to radiate professionalism and reliability.

For in person contacts, we used the leaflets to inform the participants about our study and handed out our business cards in order to provide our personal contact details. For contacting intermediary contacts, we sent out an e-mail and a PDF of the study's leaflet. When our first contact to an entrepreneur was via e-mail, we used a personalized e-mail<sup>7</sup> (e.g., including the participant's and the venture's name).

### ***Recruitment of participants***

Our recruiting activities focused on four channels (personal network; events/ fairs; incubators/ accelerators/ support programs; data bases). Contingent on the way of contacting these groups, we allocated them to contact groups (personal contact; contact through intermediary; e-mail without prior contact). We did so because within one channel, we sometimes had to apply different contact approaches.

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<sup>6</sup> Link: [www.mailchimp.com](http://www.mailchimp.com)

<sup>7</sup> Contacting entrepreneurs via e-mail was legally unobjectionable and did not break the law of the European General Data Protection Regulation as we did not follow commercial purposes.

The first channel referred to entrepreneurs from our own *personal network*. It includes for instance family, friends, and acquaintances. We approached all entrepreneurs from this channel *in person* (contact group 1).

The second channel referred to people we met at *startup events and fairs*. We approached the entrepreneurs *in person* creating an interpersonal relationship (contact group 1). Approaching potential study participants on a personal level has shown to be particularly effective (Lindenberg, Solorzano, Vilaro, & Westbrook, 2001; Patel, Doku, & Tennakoon, 2003).

The third channel referred to ventures that *were residents of an incubator or accelerator or were participating in support programs*. We were put in contact with these entrepreneurs through an *intermediary* (contact group 2) or we met them *in person* (contact group 1) at incubators and accelerators. Particularly, we reached out to potential intermediaries like staff of incubators or accelerators asking for an introduction to resident ventures. Colleagues at our institute have had good experiences with this strategy in the past (e.g., Breugst et al., 2012; Breugst, Patzelt, & Shepherd, 2020). If this did not work out, we visited the ventures at these institutions.

The fourth channel referred to *data bases*. We found contacts on regional, national as well as international data bases. From these data bases we captured data on the venture's name, the number of founders, the founding data and the contact details if available. Subsequently, we contacted all startups that did not violate our inclusion criteria (see 3.1.1) with an *e-mail without prior contact* (contact group 3). This way of contacting potential participants is attractive to researchers as it is comparably time efficient – many entrepreneurs can be contacted in a very short time. If entrepreneurs did not react to our first e-mail, we approached them again following the propositions of Patel et al. (2003). Table 5 provides an overview of all recruiting sources.

<b>Channel</b>	<b>Source</b>	<b>Location</b>	<b>Contact group</b>
1. Personal network	Family Friends Acquaintances	/	Group 1 (personal contact)
2. Events/ fairs	Bits & Pretzels Hardware Pioneer Demo Night, Wayra Nürnberger Startup Demo Night, BayStartUp StartupCon	Munich Munich Nuremberg Cologne	Group 1 (personal contact)
3. Incubators/ accelerators/ support programs	Astro Future BatchOne Bayerisches Filmzentrum BayStartUp Incubator Burda Bootcamp Startup Loft Center for Digital Technology Management	Munich Munich Munich Munich Munich	Group 1 (personal contact) & Group 2 (contact)

Channel	Source	Location	Contact group
	Entrepreneurship Center, Ludwig-Maximilians University Munich Fasttrack Fireflow Gate (Garching Technologie und Gründerzentrum) Incubator of the Technical University of Munich Innovation punks Innovations- und Gründerzentrum Weihenstephan Innovations- und Gründerzentrum Würzburg Media Lab Bayern MedTech Bootcamp, UnternehmerTUM Münchner Technologiezentrum Retail Tech Hub Strascheg Center for Entrepreneurship, Munich University of Applied Sciences TechFounders, UnternehmerTUM Wayra WeConomy Werkl XPRENEURS, UnternehmerTUM	Munich Munich Munich Garching Munich Munich Martinsried Würzburg Munich Munich Munich Munich Munich Munich Munich Munich Ludwigshafen Munich Munich	through intermediary)
4. Data bases	<b>Regional data base:</b> - Bayern Startup Magazin <b>National data bases:</b> - Bayern Startup Magazin - Deutsche startups - Gruenderszene <b>International data base:</b> - Crunchbase	/	Group 3 (e-mail without prior contact)

**Table 5: Overview of recruiting sources (own illustration)**

Prior to starting with the study and in particular the first interview, the participants had to register for participation in our Google online form with their e-mail address specifying their name, the venture's name and the number of co-founders. Moreover, every participant needed to sign an online data protection form.

As illustrated in Figure 3, we conducted two rounds of recruiting accounting for the time lag of approximately 5 months between the earliest and latest possible study start for our participants. These recruiting rounds took place from September to October 2018 and from February to March 2019.

During the first round of recruiting, we contacted ventures within all three contact groups – personal contact, intermediary contact, and e-mail without prior contact. In the first round, we contacted 2,061 ventures. 243 of these ventures registered for participation and 111 actually participated yielding a response rate of 11.8% and a participation rate of 5.4%. As expected, personal contacts showed the highest registration rate (RR) and participation rate (PR) (RR = 20.9%; PR = 14.2%).

While we approached in the first round all three above-mentioned groups, in the second round we only contacted ventures via e-mail without prior contact (contact group 3) due to time constraints of the BEST team. We contacted both new contacts on the data bases as well as contacts that we had already sent an e-mail to during the first round but who did not register nor indicated that we should cease contacting them. In the second round we contacted 1,485 ventures, 42 registered and 29 participated (RR = 2.8%; PR = 2.0%). Interestingly, the registration rate and the participation rate of the ventures that were not yet registered in the data base at our first round, were considerably higher (RR = 14.8%; PR = 12.3%) than those of the ventures contacted already in the first round and contacted again in the second round (RR = 1.8%; PR = 1.0%).

In total, we contacted 2,183 ventures of whom 285 registered and 140 participated. This yields a total RR of 13.1% and a total PR of 6.4%.

<b>Round/ group</b>	<b>C</b>	<b>R</b>	<b>P</b>	<b>RR</b>	<b>PR</b>
<b>1<sup>st</sup> round (September to October 2018)</b>					
Thereof group 1: Personal contact	134	28	19	20.9%	14.2%
Thereof group 2: Contact through intermediary	203	20	16	9.9%	7.9%
Thereof group 3: No prior contact/ data bases (as of August/ September 2018)	1,724	195	76	11.3%	4.4%
<i>Total 1<sup>st</sup> round</i>	<i>2,061</i>	<i>243</i>	<i>111</i>	<i>11.8%</i>	<i>5.4%</i>
<b>2<sup>nd</sup> round (February to March 2019)</b>					
Thereof group 3: No prior contact/ data bases (as of August/ September 2018)	1,363	24	14	1.8%	1.0%
Thereof group 3: No prior contact/ data bases (as of February 2019)	122	18	15	14.8%	12.3%
<i>Total 2<sup>nd</sup> round</i>	<i>1,485</i>	<i>42</i>	<i>29</i>	<i>2.8%</i>	<i>2.0%</i>
<b>Total 1<sup>st</sup> round and 2<sup>nd</sup> round</b>					
Thereof group 1: Personal contact	134	28	19	20.9%	14.2%
Thereof group 2: Contact through intermediary	203	20	16	9.9%	7.9%
Thereof group 3: No prior contact/ data bases (as of August/ September 2018)	1,724	219	90	12.7%	5.2%
Thereof group 3: No prior contact/ data bases (as of February 2019)	122	18	15	14.8%	12.3%
<i>Total</i>	<i>2,183</i>	<i>285</i>	<i>140</i>	<i>13.1%</i>	<i>6.4%</i>

**Table 6: Recruiting statistics (own illustration); C stands for contacted; R stands for registered; P stands for participated; RR stands for registration rate; PR stands for participation rate**

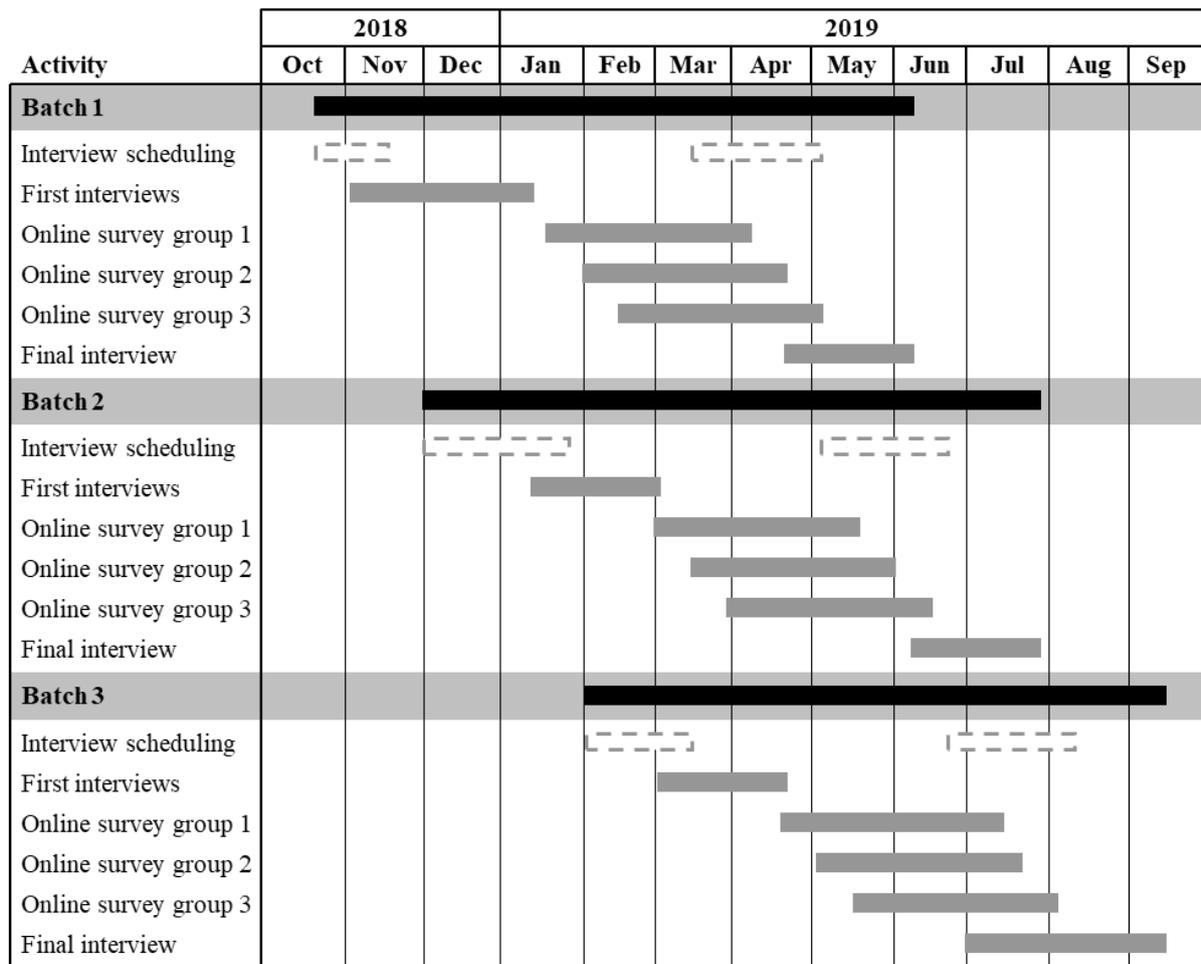
### **3.1.3 Data collection**

In this chapter, I present the procedure of the actual data collection. In the paragraph “participant management” I describe the different batches and groups of participants that we managed and the data we needed to collect upfront. Then, I present the qualitative and quantitative methods that we applied to gather the participants’ data, namely the interviews and the online surveys.

#### ***Participant management***

We conducted the data collection in three batches. Each *batch* started with an interview scheduling phase. After scheduling, our participants’ first interviews were conducted. Based on the preferences of the entrepreneurial team and on whether all first interviews with the entrepreneurial team members had been conducted, the participants could register for one of three online survey *groups* and, thus, one of three starting dates for the online survey series. Towards the end of the twelve-week online survey series, we asked the participants to schedule their final interview that could be conducted after the online survey series.

As Figure 7 illustrates, the first batch was active from October 2018 until June 2019. The second batch started in December 2018 and ended in July 2019. And the third batch was active between February and September 2019. As the date of the interviews was chosen by the participant, the individual duration of the study could be significantly shorter than the time span of each batch.



**Figure 7: Data collection schedule (own illustration)**

This study design did not only provide some flexibility to our participants but also helped the BEST team to spread the workload over a longer period of time. Besides spreading the workload over time, we distributed the workload equally over the BEST team members. In particular, each BEST team member was responsible for a number of teams. This had the positive side effect that each participating team and individual entrepreneur had just one contact person making it easier to establish a personal relationship. Moreover, we had it easier to get a more holistic picture about the venture and its team.

Each BEST team member had to make sure for his or her teams upfront, that the inclusion criteria (see page 56) for the entrepreneurs and teams were not violated, that all founding team members were registered, that the data protection clause was signed by all founding team members, and that the team had chosen an online survey group. Besides that, the BEST team member had to ensure a smooth processing of interviews and online surveys for his or her teams.

## ***Interviews***

We conducted the interviews remotely or, in case of Munich-based ventures, provided participating teams the choice between remote or in person interviews. Startups that were not based in Munich, received an e-mail with *one* link where they could register for a remote interview. Munich-based startups received an e-mail with *two* links leaving them the choice to register for a remote interview or an in-person interview.

The scheduling of remote interviews was conducted using the tool Calendly<sup>8</sup>. Calendly has access to the interviewer's calendar (e.g., Outlook calendar, or Google calendar) and provides the participants with potential interview slots contingent on the interviewers' calendar and individual settings (e.g., a general availability between 8am and 7pm and not on Saturdays, Sundays, and Mondays). Here, participants could book a one-hour slot for their interview. We conducted the remote interviews using the tool "appear.in" which now operates under the name "whereby"<sup>9</sup>. In "appear.in" we could conduct the interviews and at the same time record the interview. In some cases, e.g., due to weak internet connection, the interviews were conducted via telephone. In this case, we recorded the interview with a software on our computer.

In person interviews could be booked using the tool Doodle<sup>10</sup>. Whereas sole participants could book remote interviews, in person interviews were booked for the entire team so that all interviews could be conducted one after the other at the same day. This way, the BEST team did not have to go several times to the same venture's office. The BEST team recorded the interview using software on the computer.

We saved all interview recordings on sync+share, an online platform provided by our university. Furthermore, we kept track of some interview information like the duration and remarkable answers or statements.

## ***Online surveys***

As soon as an entire founding team had conducted the first interviews, the team was eligible to start with the online survey series. This survey series consisted of a long questionnaire of about 30 minutes at the beginning of the series, followed by 10 short questionnaires of about 3 minutes

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<sup>8</sup> Link: [www.calendly.com](http://www.calendly.com)

<sup>9</sup> Link: [www.whereby.com](http://www.whereby.com)

<sup>10</sup> Link: [www.doodle.com](http://www.doodle.com)

each and terminated with a second long questionnaire of more or less 30 minutes. For all questionnaires, we used the online survey tool Unipark.

One week before the founding team started with the first questionnaire, we reminded the participants about the start of the online questionnaire series and asked them to block 30 minutes of their time for answering the questionnaire. The following week on Friday morning, we sent the first questionnaire requesting to answer it until the upcoming Monday noon because some questions asked our participants to reflect upon the last week. If the individual participant did not completely fill out the questionnaire, we sent a reminder.

In case that not the entire founding team had answered the first questionnaire, we informed them that the second questionnaire, thus, the first short questionnaire, could only be sent as soon as the entire team answered the first long questionnaire. This way we made sure that, first, we had the answers of the entire team of the first questionnaire. This was particularly important as the first questionnaire was a long questionnaire including many different constructs. Second, it was important because this way the entire team started at the same time with the short questionnaire making sure that the more fluctuating constructs that we measured in the short questionnaire related to the same period of time for the entire team. Similar to the first long questionnaire, we sent the link to the short questionnaires on Friday morning to our participants asking for filling it in until Monday noon. Again, if the questionnaire had not been completely filled in by Monday noon, we sent an automated reminder via e-mail. Besides that, we restricted the answering time of each short questionnaire until Thursday night so that participants could not fill several short questionnaires at the same time.

We sent the last questionnaire on a Friday morning as well. Though, this time we did not restrict the answering time because, first, the questionnaire included mainly stable constructs and, second, it took more time to answer the questionnaire and we therefore provided some more flexibility to our participants.

### **3.1.4 Follow-up**

After having collected the data of our participants, we engaged in follow-up activities. Those activities can be grouped into two packages: the acknowledgement to participants and the data processing.

### ***Acknowledgement to participants***

As presented on page 57, we provided in total 5 incentives to our participants acknowledging the effort and time the participants had invested throughout the course of our study.

First, we provided *access to free support from TUM students* to our participating ventures. Our participants could send us an offer for (a) a Bachelor thesis, (b) a Master thesis, or (c) a project study that we then placed on the webpage of our chair. Then, students could apply for these theses or project studies. As there is the possibility that no student applies for an offer, we called it *access to free support from TUM students*. Nevertheless, as every student at the University needs to write a thesis and can engage in project studies, the probability to find a student was quite high. The academic supervision of the theses and project studies laid in the hands of the BEST team.

Second, our participants could publish *internship/ job advertisement placements* on the chair's webpage. Already during our data collection, precisely after an entire founding team had filled out the first long questionnaire, the participants could send us internship and job offers that we then published on the chair's webpage. We provided the incentive already after the first long questionnaire because, first, we wanted to thank our participants already for the considerable amount of time they had already invested, and, second, we wanted to keep them attracted to the continued participation in our study.

Third, we invited all our participants to the *BEST workshop event* that took place at the Entrepreneurship Research Institute after the last interview of the last batch had been led, precisely on October 10, 2019. UnternehmerTUM GmbH and Joachim Herz Stiftung generously supported us in conducting the event. The agenda included keynote speeches by Dr. Nina Lemmens from the Joachim Herz Stiftung, Prof. Dr. Nicola Breugst from the Entrepreneurship Research Institute at TUM, and Stefan Drüssler from UnternehmerTUM. Furthermore, the BEST team presented first insights of the study and invited participants to take part in study-specific breakout sessions and feedback sessions on both the individual and the team level. As not all participants in the event were BEST study participants (e.g., students and press could also participate in the event), our colleague at the Entrepreneurship Research Institute, Dr. Lora Koycheva, offered a third breakout session on "The Nature of the Moonshot: The Role of University-Based Research and Entrepreneurship in It" followed by a tour through UnternehmerTUM's MakerSpace, a large-scale high-tech workshop. Throughout the day, the participants had the chance for networking and were supplied with drinks and snacks.

Fourth, the participants received a *certificate* of participation. We distributed these certificates at the event or, in case no member of a venture's founding team could participate in our event, we sent it via e-mail.

Fifth, our participants received *individual reports*. On 18 pages we provided information on the descriptive statistics of the data, individual-level constructs in comparison to all other individual participants and team-level constructs in comparison to all other participating founding teams. We handed out hard copies of the reports to our BEST event's participants and sent, if requested, digital versions of the report to participants that could not participate in the event (for an exemplary report, please see 7.3).

### ***Data processing***

After having gathered the data from our participants, both qualitative interview data and quantitative survey data required cleaning. As my research primarily bases on quantitative data, I mainly engaged in quantitative data cleaning. I therefore present the quantitative data cleaning procedure in this paragraph. For information on the qualitative data cleaning, please refer to Aishwarya Kakatkar. Regarding the quantitative data cleaning, we distinguished between formal data cleaning, incomplete data cleaning, and inconsistent data cleaning.

*Formal data cleaning* activities included activities accounting for differences in the English and German survey, simplifying data, and creating new variables. Activities accounting for differences in the English and German survey included matching the decimal numbers in replacing the comma in the German surveys with a dot used in the English surveys. Simplifying data refers to activities for abridging later calculations like recoding reversely coded items, substituting a code for missing data into blanks, or coding gender into numbers. And we created new variables for example by transforming the date of birth of a participant into his or her age.

*Incomplete data cleaning* refers to activities that we conducted to supplement to missing data using available sources of information. For example, for missing data on work experiences or founding experiences we searched for information on LinkedIn, Xing, or on the venture's webpage.

*Inconsistent data cleaning* was necessary whenever the answers on questions asking for objective data of one founding team were inconsistent between the entrepreneurial team members. For example, we did not expect diverging answers for the number of employees of a venture. Though, sometimes the answers of one team were inconsistent asking for data cleaning.

We only applied inconsistent data cleaning on team- and venture-level variables. Inconsistent data cleaning activities include calculating average values, getting back to the team asking for the correct information, or classification by independent reviewers. Table 7 provides an overview of inconsistent data cleaning including information on the level, the construct, the response format as well as the data cleaning procedure.

Level	Construct	Response format	Procedure
Team	Team tenure: Current founding team	Date	If min-max span... ... < 6 months, average ... >= 6 months, contact founding team
	Team tenure: Initial founding team	Date	If min-max span... ... < 6 months, average ... >= 6 months, contact founding team
	Prior relationship	List & text field for “other”	Contact founding team
Venture	Employees (historical)	Number	If min-max span... ... < 3, average ... >= 3, contact founding team
	Financial resources	List & text field for “other”	Accept single answers
	Foundation date	Date	If min-max span... ... < 6 months, average ... >= 6 months, contact founding team
	Foundation	Yes/ No	Contact founding team
	Hitech (PSED)	Yes/ No	Coding by two independent reviewers (and alignment if necessary)
	Industry	List & text field for “other”	Coding by two independent reviewers (and alignment if necessary)
	Incubator time	Date	Contact founding team
	Incubator	Yes/ No	Contact founding team
	Revenue growth (historical)	Percent	If min-max span... ... < 200%, average ... >= 200%, contact founding team
	Revenues	Yes/ No	Contact founding team

**Table 7: Inconsistent data cleaning (in line with Haase, 2020)**

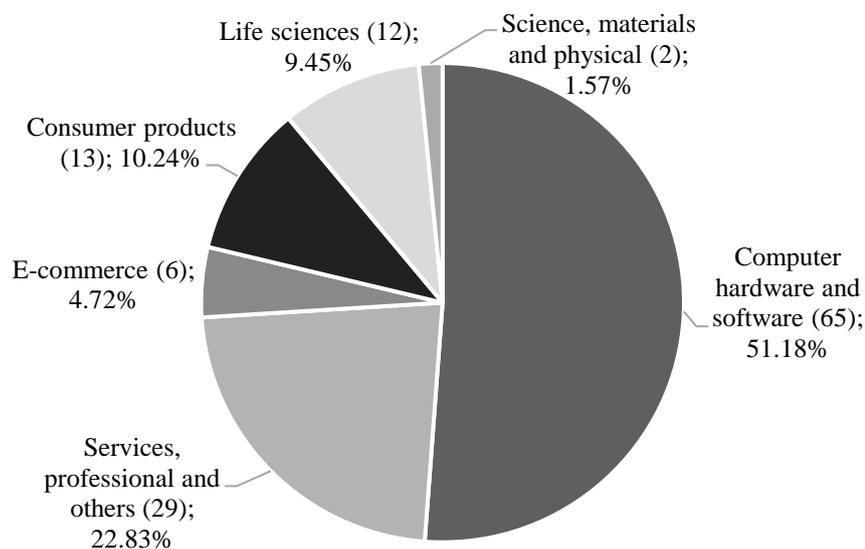
### 3.2 Sample description

In this section I present the description of our sample. First, I present statistics on the 127 ventures and venture teams who participated in our data collection. Second, I describe the sample consisting of 280 entrepreneurs at the individual level. As some entrepreneurs did not complete both long questionnaires of our study, the final data set consists of 233 entrepreneurs nested in 111 teams.

### 3.2.1 Ventures and teams

The participating ventures were on average 2.79 years old (SD = 1.37). As of January 1, 2019, the average number of employees was 6.28 (SD = 7.52) with a minimum of zero employees and a maximum of 50 employees. As 65 ventures (51.18%) operated in the computer hardware/software industry, we had a comparably tech-driven sample. The second most important sector was the services sector, accounting for 29 ventures (22.83%). Figure 8 provides an overview of the industries of the participating ventures.

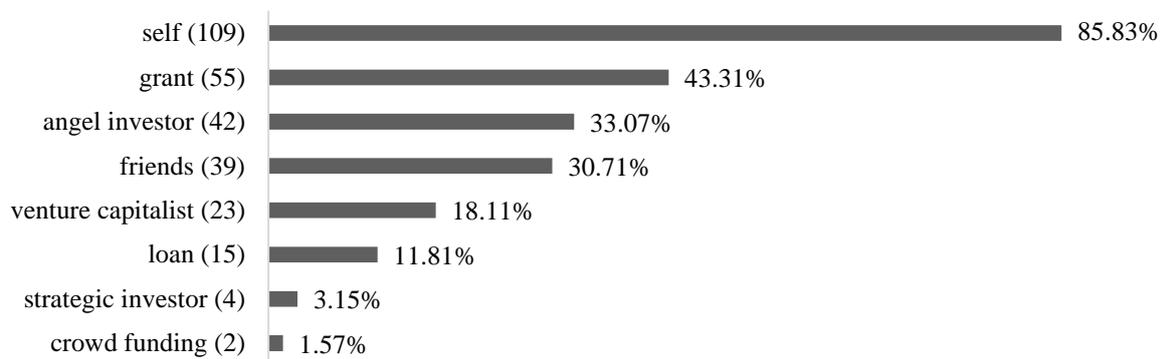
Regarding the geographic location, with 37.01% and an absolute number of 47 ventures, most of the participating ventures were located in the greater Munich area, the location where our institute is located. 29 ventures were from Berlin representing 22.83% of the participating ventures and 12 ventures accounting for 9.45% came from Hamburg. The remaining 39 ventures (30.71%) were distributed all over Germany. Besides, 37 ventures (29.13%) indicated to be residents in an incubator or accelerator at the time of the data collection.



**Figure 8: Industries of participating ventures (own illustration); absolute number in parentheses**

We asked our participants for their sources of financing leaving the opportunity to indicate multiple sources. 14 ventures did not share information on financing sources with us. Most of the other ventures used own financial means (109 ventures, 85.83%). Besides, 55 ventures

relied on grants (43.31%), 42 on angel investors (33.07%) and 39 on friends (30.71%). For an overview of the financing sources see Figure 9.



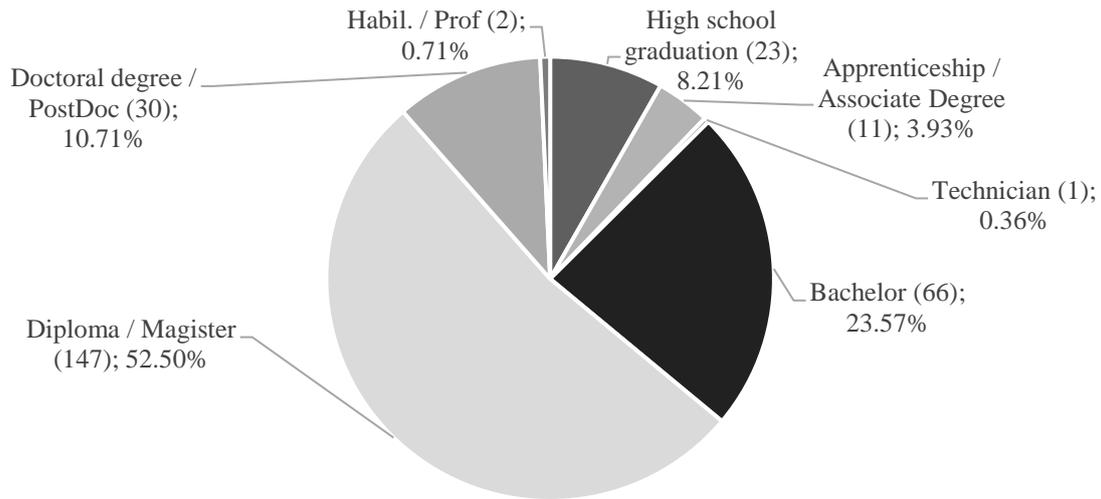
**Figure 9: Sources of financing (own illustration); absolute number in parentheses**

Regarding the team, the founding team consisted on average of 2.64 entrepreneurs (SD = 0.88), slightly above the average of 2.4 in Germany (Kollmann, Hensellek, Jung, & Kleinstegemann, 2019). The team composition changed for 7 ventures (5.51%) during the course of our data collection, with only members leaving a team and no new member entering a founding team.

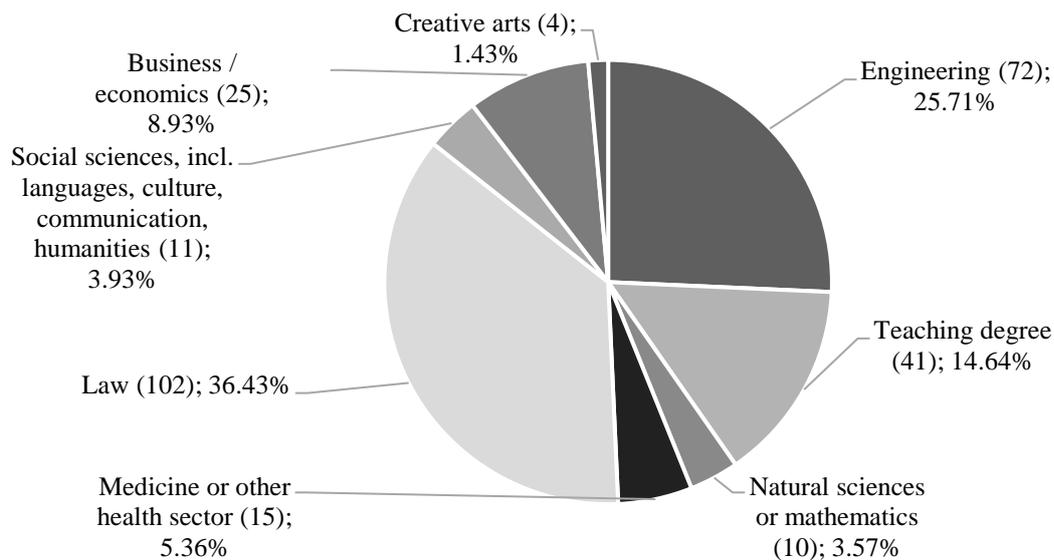
### 3.2.2 Individual entrepreneurs

From the 280 participating entrepreneurs, 11.43% were female, slightly below the value of 15.7% reported in the “Deutscher Startup Monitor 2019” report (Kollmann et al., 2019). The entrepreneurs in our sample were on average 34.84 years old (SD = 7.57), in line with the reported 35.1 years of the “Deutscher Startup Monitor 2019” report (Kollmann et al., 2019).

Our participants were highly educated with 87.50% holding an academic degree, precisely a bachelor’s degree or higher. Our sample contained two professors (0.71%), 30 entrepreneurs with a doctoral degree as highest degree (10.71%), and for 52.50% a diploma or magister was the highest graduation degree (see Figure 10). Figure 11 shows that the most represented field of education among our participants was law (36.43%), followed by engineering (25.71%).



**Figure 10: Participants' educational levels (own illustration); absolute number in parentheses**



**Figure 11: Participants' field of education (own illustration); absolute number in parentheses**

Besides, 34.29% of the entrepreneurs worked part-time in their ventures. And almost half of the participants (49.29%) had already founded a venture prior to the current venture.

### 3.3 Measures

In this section, I present the measures for capturing the constructs I am interested in. I start with the independent variable greed, followed by the dependent variables explorative behavior and

unethical pro-organizational behavior and by the moderating variables, cognitive trust, affective trust, industry experience, and venture size. Finally, I discuss the control variables that I used.

As described earlier, some variables are measured at a first point in time and others are measured at a second point in time, three months later. In the first questionnaire I gathered data on the independent variable and the moderating variables. At the second point in time, I administered the dependent variables.

For each variable, I first provide a short definition, inform about the level and the point in time when I measured the variable. Thereafter, I describe the scale I used.

### **3.3.1 Greed**

As I investigated the impact of an entrepreneur's greed on his or her behavior, I measured greed on the individual level. I gathered the data for greed in the first questionnaire.

Scholars have developed several scales for greed. Yamagishi and Sato (1986) were among the first scholars to develop a scale on greed. However, their seven-item scale does not fit to the current definitions of greed (e.g. Lambie & Haugen, 2019; Seuntjens, Zeelenberg, Breugelmans, et al., 2015). Central to the scale by Yamagishi and Sato (1986) is the conceptualization of greed as a form of self-interest (Lambie & Haugen, 2019) – which is similar but not the same as greed how I define it (Seuntjens, Zeelenberg, van de Ven, et al., 2015; Wang & Murnighan, 2011). The scale includes items asking for the moral assessment of self-interest (item 2) and whether it is acceptable to put oneself first and others second (items 3, 4, 6, 7).

After the crisis of the late 2000's, from 2014 on, scholars have developed five new greed scales. These greed scales base on similar but yet different definitions of greed. Veselka, Giammarco, and Vernon (2014) developed the Vices and Virtues Scale, a scale for measuring the seven deadly sins. As greed is one of these seven deadly sins, a sub-scale of the Vices and Virtues Scale measures greed. Other scholars developed scales focusing on greed only. Among those scales are the greed trait measure (7 items; Mussel et al., 2015), the Greed scale (12 items; Mussel & Hewig, 2016), the dispositional greed scale (6 items; Krekels & Pandelaere, 2015), and another scale also called dispositional greed scale (7 items; Seuntjens, Zeelenberg, van de Ven, et al., 2015) that has an established three-item short version (Seuntjens et al., 2016) and a Chinese Version (Liu, Sun, Ding, et al., 2019).

From a statistical perspective, the five more recent scales all show sufficiently high internal consistencies and the intercorrelations between the scales reveal that they are all measuring the same construct (Mussel et al., 2018). From a content- or definition-based perspective, all five scales focus on a greed definition with the central elements of acquisitiveness and insatiability. Interestingly, none of the scales explicitly includes the element of retention (see Table 8).

Despite those similarities, there are some differences between the scales (Lambie & Haugen, 2019). The greed trait measure (Mussel et al., 2015) and the Greed scale (Mussel & Hewig, 2016) focus on material desires only, ignoring immaterial desires. The other scales include immaterial desires either by explicitly stating these desires in some items (dispositional greed scale by Seuntjens, Zeelenberg, van de Ven, et al., 2015; Vices and Virtues Scale by Veselka et al., 2014) or by neither stating whether the desires are material or immaterial in nature (Krekels & Pandelaere, 2015). Besides, two scales, i.e., the greed trait measure (Mussel et al., 2015) and the Greed scale (Mussel & Hewig, 2016) explicitly mention a negative impact on others. Table 8 illustrates a comparison of the scales. There are also scales for measuring greed from organizational sciences. These, however, are not very precise as they consist of only one item (Djankov et al., 2006) or focus on greed in a knowledge-sharing context (Lu et al., 2006).

I used the scale by Seuntjens, Zeelenberg, van de Ven, et al. (2015) because two out of the seven items focus on material desires that seem to be particularly important in organizational settings (Haynes et al., 2017). Moreover, the scale is comparably open as it does not explicitly mention that harming others is part of the construct and because the other, non-material-focused, items do not mention specific desires. The Vices and Virtues scale also does not focus on external effects and includes material and immaterial desires. However, this scale mentions specific immaterial desires like power or credit for ideas, which may apply to the context of a specific entrepreneurial team or venture to varying extents.

Scale	Acquisitiveness	Insatiability	Retention	Desires	Harming others
Vices and Virtues Scale (Veselka et al., 2014)	x	x		Material & immaterial	
Greed trait measure (Mussel et al., 2015)	x	x		Material	x
Dispositional greed scale (Krekels & Pandelaere, 2015)	x	x		Not specified	
Dispositional greed scale (Seuntjens, Zeelenberg, van de Ven, et al., 2015)	x	x		Material & immaterial	

Scale	Acquisitiveness	Insatiability	Retention	Desires	Harming others
Greed scale (Mussel & Hewig, 2016)	x	x		Material	x

**Table 8: Greed scale comparison (own illustration)**

The items of the scale I used are presented in Table 9. I measured greed on a Likert scale ranging from 1 (“strongly disagree”) to 7 (“strongly agree”).

Item number	Items by Seuntjens, Zeelenberg, van de Ven, et al. (2015, p. 921)
1	I always want more.
2	One can never have too much money.
3	As soon as I have acquired something, I start to think about the next thing I want.
4	Actually, I’m kind of greedy.
5	It doesn’t matter how much I have. I’m never completely satisfied.
6	My life motto is “more is better”.
7	I can’t imagine having too many things.

**Table 9: Dispositional greed scale by Seuntjens, Zeelenberg, van de Ven, et al. (2015, p. 921) (own illustration)**

I observed a Cronbach’s alpha of 0.82 indicating the scale’s reliability as it surpasses the acceptance threshold of 0.7 (Cortina, 1993). Nevertheless, as the scale is comparably new, I wanted to make sure that the scale really is reliable. Therefore, I calculated the coefficient of equivalence and stability (CES) following Schmidt, Le, and Ilies (2003). The CES accounts for all three sources of measurement errors. Those are the transient error, the random response error, and the specific factor error.

- *Transient errors* are defined as “longitudinal variations in responses to measures that are produced by random variations in respondents’ psychological states across time” (Schmidt et al., 2003, p. 206). The random variations represent a difference between the measured value of the construct and the true value of the construct, thus, the value I wanted to measure. Transient errors are elicited by feelings or mood and occur between different situations (Schmidt et al., 2003).
- *Random response errors* are “caused by momentary variations in attention, mental efficiency [and] distractions” (Schmidt et al., 2003, p. 208). As this error is specific to

the moment, longer scales tend to be less prone to this error in comparison to shorter scales (Schmidt et al., 2003).

- *Specific factor errors* lie on the item level and the scale level. “At the item level, specific factor errors are produced by respondent-specific interpretation of the wording of questionnaire items” (Schmidt et al., 2003, p. 209). By using more items, the item level specific factor error can be reduced. “At the scale level, different scales that were created to measure the same construct may also contain specific factor errors” (Schmidt et al., 2003, p. 209). The scale level specific factor error can be reduced by using multiple scales for the same construct.

In order to calculate the CES, I needed to capture greed in both questionnaires. My calculation yielded a CES for greed of 0.73. This indicates that the above-mentioned error sources do have some impact on my greed measures. Though, the score of 0.73 is still acceptable. Similar to Cronbach’s alpha, the CES is a standardized measure. As the threshold of Cronbach’s alpha, which accounts for two error sources, is at 0.7 (Cortina, 1993), a CES, which accounts for three error sources, of 0.73 is above the threshold and therefore acceptable.

### 3.3.2 Explorative behavior

Explorative behavior serves as a dependent variable that I measured at the individual level in the second questionnaire. The scale by Mom et al. (2007) is well established (Rosing & Zacher, 2017; Tamayo-Torres, Gutierrez-Gutierrez, & Ruiz-Moreno, 2014) and particularly designed for a management context. In order to apply the scale to my research, I did not have to change a single item. The scale asks for an evaluation on how often a participant engaged in specific work-related activities like “*searching for new possibilities with respect to products, services, processes, or markets*” or “*activities requiring you to learn new skills or knowledge*”. I captured the frequency of engaging in such activities on a seven-point Likert scale ranging from 1 (“never”) to 7 (“very often”). The Cronbach’s alpha of 0.75 is higher than the threshold of 0.7 (Cortina, 1993) and therefore indicates that the scale is reliable. Table 10 includes the scale’s items.

Item number	Items by Mom et al. (2007, p. 919)
1	Searching for new possibilities with respect to products, services, processes, or markets
2	Evaluating diverse options with respect to products, services, processes, or markets

Item number	Items by Mom et al. (2007, p. 919)
3	Focusing on strong renewal of products, services or processes
4	Activities requiring quite some adaptability of you
5	Activities requiring you to learn new skills or knowledge

**Table 10: Explorative behavior scale by Mom et al. (2007, p. 919) (own illustration)**

### 3.3.3 Unethical pro-organizational behavior

In my dissertation, unethical pro-organizational behavior is one of two dependent variables. I evaluated the impact of greed on unethical pro-organizational behavior that I measured in the second questionnaire. As I wanted to evaluate the behavior of an individual entrepreneur in a team context, unethical pro-organizational behavior is an individual level variable.

I measured unethical pro-organizational behavior with the scale by Umphress et al. (2010). The scale is well established and has shown high reliability (e.g., Castille et al., 2018; Miao, Newman, Yu, & Xu, 2013; Xu & Lv, 2018). It consists of six items (see Table 11) that I slightly adapted to fit the entrepreneurial context better: When the original scale referred to an “organization”, I replaced “organization” by “venture”. I measured our participants’ agreement on the six items (e.g., “*If my venture needed me to, I would give a good recommendation on the behalf of an incompetent employee in the hope that the person will become another company’s problem instead of my own*”, or “*If needed, I would conceal information from the public that could be damaging to my venture*”) with a seven-point Likert scale ranging from 1 (“not at all”) to 7 (“completely”). Similar to other scholars (Castille et al., 2018; Miao et al., 2013; Xu & Lv, 2018), I observed a Cronbach’s alpha of 0.80 indicating the scale’s reliability (Cortina, 1993; Hair, Anderson, Babin, & Black, 2010). For all items, see Table 11.

Item number	Items by Umphress et al. (2010, p. 771)
1	If it would help my venture, I would misrepresent the truth to make my venture look good.
2	If it would help my venture, I would exaggerate the truth about my venture’s products or services to customers.
3	If it would benefit my venture, I would withhold negative information about my venture or its products or services from customers.
4	If my venture needed me to, I would give a good recommendation on the behalf of an incompetent employee in the hope that the person will become another company’s problem instead of my own.
5	If my venture needed me to, I would withhold issuing a refund to a customer accidentally overcharged.

Item number	Items by Umphress et al. (2010, p. 771)
6	If needed, I would conceal information from the public that could be damaging to my venture.

**Table 11: Unethical pro-organizational behavior scale by Umphress et al. (2010, p. 771) including adaptations (own illustration)**

### 3.3.4 Cognitive trust

Cognitive trust is a moderator in both models, with explorative behavior and unethical pro-organizational behavior as dependent variable, respectively. As it refers to individual perceptions, it is an individual level variable. I measured cognitive trust in the first questionnaire.

To capture cognitive trust, I used the six-item scale by McAllister (1995). The scale is well established among researchers and has shown high reliability (e.g. Costigan, Iiter, & Berman, 1998; Ng & Chua, 2006; Wang, Tomlinson, & Noe, 2010). In order to account for the entrepreneurial context, I made some minor adjustments. I replaced “us” or “we” in the original scale by “our founding team” and when the scale refers to other individuals (“individuals”, “persons”, “coworkers”), I replaced by “founding team members”. This way, I made sure to measure trust just within the entrepreneurial team and not towards other individuals like employees, investors, or friends. Exemplary items are “*Given our founding team members' track record, I see no reason to doubt their competences and preparation for the work*” or “*Other persons who interact with my founding team members at work consider them to be trustworthy*”. I asked our participants to state their agreement on the six items (see Table 12) on a seven-point Likert scale ranging from 1 (“not at all”) to 7 (“completely”). With Cronbach’s alpha at 0.80, the scale was reliable (Cortina, 1993).

Item number	Items by McAllister (1995, p. 37)
1	Our founding team approaches the work with professionalism and dedication.
2	Given our founding team members' track record, I see no reason to doubt their competences and preparation for the work.
3	I can rely on my founding team members not to make my job more difficult by careless work.
4	Most people, even those who aren't close friends of my founding team members, trust and respect them.
5	Other persons who interact with my founding team members at work consider them to be trustworthy.

Item number	Items by McAllister (1995, p. 37)
6	If people knew more about my founding team members and their backgrounds, they would be more concerned and monitor their performance more closely.

**Table 12: Cognitive trust scale by McAllister (1995, p. 37) including adaptations (own illustration)**

### 3.3.5 Affective trust

In the model with unethical pro-organizational behavior as dependent variable, affective trust serves as moderating variable. In the model with explorative behavior as dependent variable, affective trust is a control variable. In both cases, as moderating variable and as control variable, affective trust is an individual level variable that I measured in the first questionnaire.

I measured affective trust with the five-item scale by McAllister (1995), which is used by many scholars and has shown high reliability (e.g. Costigan et al., 1998; Ng & Chua, 2006; Wang et al., 2010). I adapted the affective trust scale in the same way I adapted the cognitive trust scale. Thus, when the original scale refers to “us” or “we”, I replaced by “our founding team” and when it refers to single other individuals like “individuals”, “person”, or “coworkers”, I substituted by “my founding team members”. Items include *“I can talk freely to my founding team members about difficulties I am having at work and know that they will want to listen”* or *“If I shared my problems with my founding team, I know they would respond constructively and caringly”* (for all items, see Table 13). I measured the agreement of my participants on the scale’s five items on a seven-point Likert scale from 1 (“not at all”) to 7 (“completely”). Consistent with prior studies, the scale proved to be reliable reaching a Cronbach’s alpha of 0.80 (Cortina, 1993).

Item number	Items by McAllister (1995, p. 37)
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.

**Table 13: Affective trust scale by McAllister (1995, p. 37) including adaptations (own illustration)**

### **3.3.6 Industry experience**

Industry experience refers to the time an entrepreneur has spent in the industry the current venture is operating in. While industry experience is a control variable in the model with unethical pro-organizational behavior as dependent variable, it represents a moderating variable in the model with explorative behavior as dependent variable. It is an individual level variable that I measured in the first questionnaire.

I measured the construct with a self-developed single item (“*How many years of work experience do you have in the industry, in which your venture competes?*”). The participants could answer by entering up to five characters, including point or comma. So, the participants could enter non-integer numbers.

### **3.3.7 Venture size**

In line with extant research, I measured venture size as the number of employees working in the venture (Baum & Locke, 2004; Gilbert, McDougall, & Audretsch, 2008). This variable is a venture-level variable that I measured in the first questionnaire.

Measuring venture size by taking the number of employees of a new venture seems appropriate for our diverse sample. Taking financial figures for measuring venture size would have been problematic because, first, many young ventures are not financially profitable during the first years and, second, revenues are highly dependent on the venture’s industry (Haber & Reichel, 2005). In order to capture data on the participating ventures’ number of employees, I asked our participants “*how many full-time employees did your venture have employed on 1.1.2019?*”. Responses consisted of whole numbers/ integers.

### **3.3.8 Control variables**

In order to mitigate potential confounding effects emerging from omitted variable bias, I included control variables on the individual, the team and the venture level. Table 14 provides an overview of these control variables including information on the measurement’s source, the number of items, the level, and the specific model (either with unethical pro-organizational behavior or with explorative behavior as dependent variable) in which I used the control variable. Most control variables are implemented in both models, with explorative behavior and

unethical pro-organizational behavior as dependent variable, respectively. Though, some control variables in the model for the one dependent variable served as moderating variable in the other model. Moreover, as the dependent variable explorative behavior is usually investigated in combination with the construct exploitative behavior (Mom et al., 2007; Uotila, Maula, Keil, & Zahra, 2009), I included exploitative behavior as control variable when investigating on explorative behavior.

<b>Variable</b>	<b>Source</b>	<b>Number of Items</b>	<b>Level</b>	<b>DV<sup>1</sup> explorative behavior</b>	<b>DV<sup>1</sup> unethical pro-organizational behavior</b>
Social desirability	Strahan and Gerbasi (1972)	7	Individual	X	X
Big five personality traits (extraversion, emotional stability, openness, conscientiousness, agreeableness)	Gosling et al. (2003)	2 per trait, 10 in total	Individual	X	X
Founding experience	<i>Own wording</i>	1	Individual	X	X
Industry experience	<i>Own wording</i>	1	Individual	<i>Moderator</i>	X
Participant's age	<i>Previous BEST projects</i>	1	Individual	X	X
Gender	Dimov (2010)	1	Individual	X	X
Exploitative behavior	Mom et al. (2007)	6	Individual	X	
Affective trust	McAllister (1995)	5	Individual	X	<i>Moderator</i>
Team size	<i>Number of co-founders</i>	1	Team	X	X
Number of entrepreneurs who left the team	<i>Number of co-founders who left the team</i>	1	Team	X	X
Venture age	<i>Own wording (calculated from founding date)</i>	1	Venture	X	X
Venture size (number of employees)	<i>Previous BEST projects</i>	1	Venture	<i>Moderator</i>	X

Variable	Source	Number of Items	Level	DV <sup>1</sup> explorative behavior	DV <sup>1</sup> unethical pro-organizational behavior
Industry	<i>Previous BEST projects; own wording</i>	1	Venture	X	X

**Table 14: Control variables (own illustration); <sup>1</sup> DV stands for dependent variable.**

***Social desirability:*** Social desirability refers to the tendency of survey participants to answer questions in a socially desirable way instead of revealing true information, particularly when participants are asked personal questions (Grimm, 2010). As greed is considered socially reprehensible, it is reasonable to control for social desirability when investigating on greed (Krekels & Pandelaere, 2015). In order to control for social desirability, I used a short form of Marlow-Crowne’s social desirability scale by Strahan and Gerbasi (1972). On a nominal yes-no-scale I asked the participant’s whether they agree with seven statements (items are reverse-coded; for all items, see Table 15).

Item number	Items by Strahan and Gerbasi (1972, p. 192)
1	I like to gossip at times.
2	There have been occasions when I took advantage of someone.
3	I’m always willing to admit it when I make a mistake.
4	I sometimes try to get even rather than forgive and forget.
5	At times I have really insisted on having things my own way.
6	I have never been irked when people expressed ideas very different from my own.
7	I have never deliberately said something that hurt someone’s feelings.

**Table 15: Social desirability scale by Strahan and Gerbasi (1972, p. 192) (own illustration)**

***Big five personality traits:*** The big five personality traits consist of extraversion, emotional stability, openness, conscientiousness, and agreeableness. Those five traits describe a great part of human personality that affects behavior (Judge, Higgins, Thoresen, & Barrick, 1999). By controlling for those big five personality traits, I ensured that the observed behavior, specifically explorative behavior and unethical pro-organizational behavior, bases on greed and is not confounded by the big five personality traits (Judge, LePine, & Rich, 2006). I used the rather short big five measure by Gosling et al. (2003) that consists of two items per trait, thus, ten

items in total. On a 1 (“not at all”) to 7 (“completely”) Likert scale, participants were asked about their perceptions of being, for instance, “*extraverted, enthusiastic*” (extraversion) or “*anxious, easily upset*” (emotional stability). Table 16 contains all items of the short big five personality traits scale by Gosling et al. (2003).

Item number	Sub-scale	Items by Gosling et al. (2003, p. 525)
1	Conscientiousness	Dependable, self-disciplined
2	Conscientiousness	Disorganized, careless
3	Extraversion	Extraverted, enthusiastic
4	Extraversion	Reserved, quiet
5	Agreeableness	Critical, quarrelsome
6	Agreeableness	Sympathetic, warm
7	Emotional stability	Anxious, easily upset
8	Emotional stability	Calm, emotionally stable
9	Openness to experiences	Open to new experiences, complex
10	Openness to experiences	Conventional, uncreative

**Table 16: Big five personality traits scale by Gosling et al. (2003, p. 525) (own illustration)**

**Founding experience:** I controlled for founding experience, as it influences entrepreneurial behavior (Ucbasaran, Westhead, & Wright, 2009). For example, founding experience influences the opportunity recognition of entrepreneurs, having positive impact on the quality (Baron & Ensley, 2006) and quantity of potential opportunities (Gruber, MacMillan, & Thompson, 2008) which may mitigate the need to engage in explorative or unethical pro-organizational behavior for achieving greedy desires. On the other side, scholars find that founding experience positively impacts overconfidence (Forbes, 2005), which may motivate an entrepreneur high in greed to engage in unethical behavior and to constantly explore for new, more profitable opportunities. I captured the participants’ founding experience asking for the number of ventures founded prior to the current venture (“*How many ventures have you (co-)founded (before the current one)?*”).

**Industry experience:** Industry experience provides important information on norms, rules, and stakeholders in the industry (Delmar & Shane, 2006; Dimov, 2010). Based on this information, industry experience yields relevant skills and interpersonal connections (Dimov, 2010) that are likely to influence an entrepreneur’s behavior. For assessing industry experience, I asked the

participants to indicate the years of work experience in the industry the current venture competes in (“How many years of work experience do you have in the industry, in which your venture competes?”). While industry experience represents a moderating variable in the model investigating explorative behavior, it is a control variable in the model examining the impact of an entrepreneur’s greed on unethical pro-organizational behavior.

**Participant’s age:** An entrepreneur’s age has an impact on his or her behavior (Weber & Schaper, 2004). For instance, older people tend to act less unethically in business contexts (Ruegger & King, 1992) or have more financial resources (Weber & Schaper, 2004) which is likely to influence exploration activities and unethical behavior. Based on information about the participant’s year of birth and in line with extant research (e.g., Shepherd, Patzelt, & Baron, 2013), I captured the participant’s age (*Please enter your year of birth (XXXX; e.g., 1978)*”).

**Gender:** Gender, too, influences traits and behavior (Feingold, 1994). On average, males are greedier than females (Krekels & Pandelaere, 2015; Liu, Sun, Ding, et al., 2019) and more likely to engage in unethical behavior (Betz, O’Connell, & Shepard, 1989; Tang & Chen, 2008). Moreover, Almor, Bazel-Shoham, and Lee (2019) show that the gender diversity of a management board impacts the likelihood of engaging in explorative behavior. I controlled for gender coding men as 0 and women as 1.

**Exploitative behavior:** Exploitative behavior refers to the “exploitation of old certainties” (March, 1991, p. 71) and is about refining and improving rather than innovating (Mom et al., 2007). Exploitative and explorative behavior are frequently analyzed simultaneously (March, 1991; Mom et al., 2007; Uotila et al., 2009). In order to not confound the impact of greed on explorative behavior with a potential influence of exploitative behavior, I implemented exploitative behavior as control variable when investigating the impact of greed on explorative behavior only. Table 17 contains the scale’s items.

Item number	Items by Mom et al. (2007, p. 919)
1	Activities of which a lot of experience has been accumulated by yourself
2	Activities which serve existing customers with existing services/ products
3	Activities of which it is clear to you how to conduct them
4	Activities primarily focused on achieving short-term goals
5	Activities which you can properly conduct by using your present knowledge
6	Activities which clearly fit into existing company policy

**Table 17: Exploitative behavior scale by Mom et al. (2007, p. 919) (own illustration)**

***Affective trust:*** In the model on the relationship between greed and explorative behavior, cognitive trust serves as a moderating variable. Though, besides cognitive trust, there is a second dimension of trust: affective trust (McAllister, 1995). As trust consists of two dimensions, I included affective trust as a control variable in the explorative behavior model. In the unethical pro-organizational behavior model, affective trust serves as a moderator (see 3.3.5).

***Team size:*** At the team level, I controlled for team size which refers to the number of co-founders. Scholars have found that team size affects trust development (Pinjani & Palvia, 2013), monitoring within teams (Liang, Rajan, & Ray, 2008) and venture performance (Song, Podoynitsyna, Van Der Bij, & Halman, 2008). Accordingly, team size potentially affects the results of my regression analyses. I captured the number of co-founders in both questionnaires. For the variable team size, I used the number of co-founders at the start of our study.

***Number of entrepreneurs who left the team:*** Changes in team composition, be it entrepreneurs joining or leaving a team, are likely to affect variables that describe the team environment (Patzelt, Preller, & Breugst, 2020) like cognitive or affective trust. I captured data on changes in team composition by calculating differences in team sizes between the first and the second questionnaire. In my sample, there was no team that an entrepreneur joined but only teams that entrepreneurs left. Therefore, I named the variable “number of entrepreneurs who left the team”.

***Venture age:*** The venture age impacts the access to resources and thus, the likelihood to engage in unethical pro-organizational behavior in order to acquire these resources (Zimmerman & Zeitz, 2002). Moreover, as there is a point in time when entrepreneurs should shift from exploring to exploiting opportunities (Choi et al., 2008), venture age tends to relate to explorative behavior. I measured venture age in years based on the venture’s foundation date.

***Venture size:*** Bigger ventures tend to have easier access to financial (Aldrich & Auster, 1986; Kale & Ardit, 1998) and human capital (Aldrich & Auster, 1986) which is likely to affect entrepreneurs’ behavior. Moreover, entrepreneurs act as role models to their employees (Kuratko, 2007), which may influence their behavior. Therefore, I controlled for venture size measured as the number of employees. Venture size was a moderating variable in my analysis on explorative behavior (see 3.3.7), and it was included as a control variable in the analysis of unethical pro-organizational behavior.

**Industry:** Lastly, as different industry characteristics require different behaviors of entrepreneurs and their ventures to be successful (Hmieleski & Ensley, 2007), I controlled for the industry the venture is operating in. Providing a list of seven industries, participants could choose the industry of their current venture (*“computer hardware and software”, “services (professional and others)”, “e-commerce”, “consumer products”, “life sciences”, “science (materials and physical)”*). Alternatively, participants could specify another industry if none of the propositions covered their industry of operations. Two independent reviewers subsequently assessed these answers and could assign them to the above-mentioned industries. I generated indicator variables (dummy variables) using the most frequent industry as reference category.

### **3.4 Statistical analysis**

This section presents my statistical analysis. As such, I first discuss hierarchical linear modeling. Then, I illustrate how I approach the issue of centering the variables. Lastly, I present how I control for biases.

#### **3.4.1 Hierarchical Linear Modeling**

The application of multilevel regression models, or hierarchical linear models (HLM; Raudenbush & Bryk, 2002), is appropriate when analyzing data with a nested structure (Hox, Moerbeek, & Van de Schoot, 2017). This is because most standard statistical tests base on the assumption that observations are independent (Hox et al., 2017), an assumption that is usually violated in multilevel data sets. Considering my sample that consisted of participating entrepreneurs who are nested in entrepreneurial teams, entrepreneurial team members share a common history or interact frequently and therefore cannot be considered as being independent. Thus, the average correlation between variables measured on entrepreneurs from the same team tend to be higher than measured on entrepreneurs from different teams (Hox et al., 2017). Applying standard, single level statistical tests on data sets with a nested data structure would yield too small standard errors and erroneously too many statistically significant relationships (Hox et al., 2017).

Besides, analyzing multilevel data using a standard, single level technique, would require to have all variables on the same level (Hox et al., 2017). In case there are variables on different levels (e.g., greed as individual level variable and venture size as venture level variable), the lower-level variables need to be aggregated or the higher-level variables need to be

disaggregated in order to move all variables to the same level. Though, aggregating data, for example by taking the mean of individual entrepreneurs' responses, is problematic because data is removed from the data set. Disaggregating data, for example by assigning venture level data to every single entrepreneur, leads to dependent values (Hox et al., 2017). This, again, would violate the independence assumption of standard statistical tests.

For illustration, I present an example on a hierarchical linear model in accordance with Hox et al. (2017). Table 18 provides an overview of the model's notation.

Notation	Meaning
$Y_{ij1}$	Predicted variable
$X_{1ij}$	Level 1 explanatory variable 1
$X_{2ij}$	Level 1 explanatory variable 2
$i$	Subscript for entrepreneur
$j$	Subscript for venture
$\beta_{0j}$	Regression coefficient, intercept
$\beta_{1j}$	Regression coefficient for explanatory variable 1
$\beta_{2j}$	Regression coefficient for explanatory variable 2
$e_{ij}$	Level 1 error term
$Z_j$	Level 2 explanatory variable
$\gamma_{i0}$	Level 2 regression coefficient
$u_{ij}$	Level 2 error term

**Table 18: Notations of the exemplary multilevel model (own illustration)**

Equation 1 illustrates that the individual level (level 1) dependent variable  $Y_{ij}$  is predicted by two individual level variables  $X_{1ij}$  and  $X_{2ij}$ , two corresponding coefficients  $\beta$ , the intercept  $\beta_{0j}$  and a level 1 error term  $e_{ij}$  with an assumed mean of zero.

$$Y_{ij} = \beta_{0j} + \beta_{1j}X_{1ij} + \beta_{2j}X_{2ij} + e_{ij} \quad (1)$$

As indicated by the different regression coefficients  $\beta$  for the venture level  $j$  (level 2), each venture has an individual intercept and individual regression coefficients.

The regression coefficients  $\beta$  can be specified in more detail by equations 2.1, 2.2 and 2.3. In these equations, the regression coefficients  $\gamma_{00}, \gamma_{10}, \gamma_{20}$  are the same for all ventures,  $Z_j$  represents a venture level (level 2) variable and  $u_{0j}, u_{1j}, u_{2j}$  are venture level error terms.

$$\beta_{0j} = \gamma_{00} + \gamma_{01}Z_j + u_{0j} \quad (2.1)$$

$$\beta_{1j} = \gamma_{10} + \gamma_{11}Z_j + u_{1j} \quad (2.2)$$

$$\beta_{2j} = \gamma_{20} + \gamma_{21}Z_j + u_{2j} \quad (2.3)$$

Integrating equations 2.1, 2.2 and 2.3 into equation 1, equation 3 results:

$$Y_{ij} = \gamma_{00} + \gamma_{10}X_{1ij} + \gamma_{20}X_{2ij} + \gamma_{01}Z_j + \gamma_{11}X_{1ij}Z_j + \gamma_{21}X_{2ij}Z_j + u_{1j}X_{1ij} + u_{2j}X_{2ij} + u_{0j} + e_{ij} \quad (3)$$

Equation 3 includes the terms  $X_{1ij}Z_j$  and  $X_{2ij}Z_j$ . These terms are cross-level interaction terms that emerge because the level 1 regression coefficients  $\beta_j$  depend on the level 2 variable  $Z_j$ . Importantly, the level 2 error terms  $u_{1j}$  and  $u_{2j}$  are connected to the level 1 explanatory variables  $X_{1ij}$  and  $X_{2ij}$ , respectively. Thus, the error depends on the explanatory variable. This is called heteroscedasticity. Heteroscedasticity represents a violation of the homoscedasticity assumption of standard regression models and represents another reason for the application of multilevel models (Hox et al., 2017).

For calculating hierarchical linear models, I applied the software Stata 13.1. Specifically, I calculated models with random intercepts and random slopes (for team size, venture age, venture size, and number of people who left the entrepreneurial team), thus, allowing venture-specific intercepts and venture-specific regression coefficients. Moreover, I used robust standard errors in order to account for heteroscedasticity (Hox et al., 2017).

### 3.4.2 Centering

Binary variables (yes/ no response format; e.g., social desirability) and ordinal variables (Likert-type response format; e.g., greed, unethical pro-organizational behavior, explorative behavior) lack a meaningful value of zero (Blanton & Jaccard, 2006; Enders & Tofighi, 2007). In order to make those variables more interpretable, scholars recommend to center these variables (Enders & Tofighi, 2007; Hox et al., 2017). Centering refers to the subtraction of a constant value from the variable. In multilevel models, there are two centering options: centering by the grand mean and centering by the group mean. Centering by the grand mean refers to the subtraction of the grand mean from the variable and centering by the group mean refers to the subtraction of the group mean.

Following the recommendations of Aguinis, Gottfredson, and Culpepper (2013) and Enders and Tofighi (2007), I centered individual level (level 1) variables by the group mean and venture level (level 2) variables by the grand mean (except for the industry dummy variables). The decision to center venture level (level 2) variables by the grand mean is straight forward, as the values should be identical within one group (Enders & Tofighi, 2007). According to Enders and Tofighi (2007), centering at the group mean for individual level (level 1) variables is recommended when an individual level (level 1) predictor is analyzed. The reason is that centering by the group mean “removes all between-cluster variation from the predictor” and yields a “pure estimate” of the individual level (level 1) regression coefficient (Enders & Tofighi, 2007, p. 128).

### **3.4.3 Control for biases**

In this subsection, I present how I account for different potential biases. Specifically, I discuss common method variance, multicollinearity, and the nonresponse bias.

#### ***Common method variance***

Common method variance refers to the variance in the observations that is due to the method of the data collection (Podsakoff, MacKenzie, Lee, & Podsakoff, 2003). Common method variance represents an important measurement error that undermines the conclusions about the analyzed relationships (Podsakoff et al., 2003). Particularly in survey studies with self-reported data, it is important to account for potential common method variance (Tehseen, Ramayah, & Sajilan, 2017). Remedies for common method variance can be grouped into two categories: procedural remedies and statistical remedies.

Following Podsakoff et al. (2003), I accounted for potential common method variance by the *procedure* of the data collection. I temporally separated the measurements capturing first the independent and moderating variables and second, with a time lag of three months, the dependent variables. And lastly, I guaranteed data protection to our participants and explained that there are no right or wrong answers (Podsakoff et al., 2003).

Following Williams, Hartman, and Cavazotte (2010), I controlled for common method variance *statistically* applying a confirmatory factor analysis (CFA) with a marker variable, a suitable approach to control for common method variance (Lindell & Whitney, 2001; Malhotra, Kim, & Patil, 2006). A marker variable is a variable that is theoretically and statistically unrelated to

substantive variables, thus, the dependent variable, the independent variable, and moderating variables (Simmering, Fuller, Richardson, Ocal, & Atinc, 2015).

For the model analyzing explorative behavior, I added the marker variable psychological detachment captured by the four-item scale by Sonnentag and Fritz (2007) (Cronbach's alpha = 0.87). The correlation with psychological detachment was for none of the substantive variables significant and for all very low (greed -0.06, explorative behavior -0.11, industry experience -0.02, cognitive trust 0.01, and venture size 0.01).

Using structural equation modelling, I generated and ran six models keeping track of the results:

- *CFA model*: The CFA model is the initial model including all substantive variables plus the marker variable. All factors are correlated and their variances are set to 1.
- *Baseline prep*: This model bases on the CFA model and has the item weights and the error variances of the marker variable fixed to the CFA model's output values.
- *Baseline model*: The baseline model, in turn, bases on the baseline prep model. The only adjustment I applied before running the model was fixing the covariances between the substantive variables and the marker variable to zero.
- *Method-C model*: The C in Method-C stands for "constrained". It builds on the baseline model but has paths from the marker variable to each of the substantive variables' items that are required to be equal.
- *Method-U model*: The U in Method-U stands for "unconstrained". This model builds on the Method-C model but has no constraints on the paths from the marker variable to the substantive variables' items.
- *Method-R model*: Method-R model builds on either Method-C or Method-U model depending on the better model fit. Having identified the model with the better fit, I fixed the factor covariances to the values from the baseline model.

Table 19 contains the results of the CFA with marker variable for the explorative behavior model. It illustrates the models' statistics, except for the baseline prep model which serves just as an auxiliary model. The results show that the Method-C model does not fit statistically significantly better than the baseline model. This means that there is no evidence for shared common method variance. Moreover, the Method-U model does not fit statistically significantly better than the Method-C model which means that common method variance is the same for all indicators. However, the results show that the Method-R model is statistically significantly different from the Method-C model. This indicates that the relationships between the substantive variables are somehow skewed.

Model	$\chi^2$ (df)	CFI	TLI	RMSEA (90% CI)	LR of delta $\chi^2$	Model comparison
CFA with marker variable	432.72 (203)	0.875	0.858	0.070 (0.061; 0.079)		
Baseline	435.33 (214)	0.88	0.87	0.067 (0.058; 0.076)		
Method-C	434.20 (213)	0.88	0.87	0.067 (0.058; 0.076)	1.14, df=1; p=0.287	Baseline
Method-U	412.62 (196)	0.883	0.862	0.069 (0.060; 0.078)	21.58, df=17; p=0.202	Method-C
Method-R	441.85 (199)	0.868	0.847	0.072 (0.063; 0.081)	29.23, df=3; p=0.000	Method-U

**Table 19: Results of CFA with marker variable psychological detachment for the explorative behavior model (own illustration); df stands for degrees of freedom; CFI stands for comparative fit index; TLI stands for Tucker-Lewis Index; RMSEA stands for root mean square error of approximation; CI stands for confidence interval; LR stands for likelihood ratio test**

As the results above (with marker variable psychological detachment) are potentially problematic, I engaged in further analysis. Specifically, I observed that while the correlations between psychological detachment and the substantive variables are not significant at a 5%-significance level and rather low, the correlation between psychological detachment and explorative behavior may be problematic as it is not as low as the other correlations and significant at the 10%-significance level (cor. =  $-0.113$ ;  $p = 0.086$ ). Accordingly, the two variables may be somewhat statistically related. Therefore, I conducted the same procedure with a different marker variable, i.e., environmental dynamism using the seven-item scale by Green et al. (2008) (Cronbach's alpha = 0.80). The correlations of environmental dynamism and the substantive variables were low (greed  $-0.01$ , explorative behavior  $-0.05$ , industry experience  $-0.05$ , cognitive trust 0.05, and venture size 0.10) and, importantly, in no case significant (not even at the 10%-significance level). Scholars could challenge that environmental dynamism and explorative behavior may not be theoretically unrelated. However, from a theoretical perspective, all entrepreneurs have to engage in explorative behavior (Choi et al., 2008; Parida et al., 2016), irrespective of the environmental dynamism. Besides, from a practical perspective, all the other potential variables that were available, are statistically and/ or theoretically more closely related to one of the substantive variables.

Model	$\chi^2$ (df)	CFI	TLI	RMSEA (90% CI)	LR of delta $\chi^2$	Model comparison
CFA with marker variable	571.11 (269)	0.829	0.81	0.069 (0.062; 0.077)		
Baseline	571.56 (286)	0.839	0.831	0.065 (0.058; 0.073)		
Method-C	571.54 (285)	0.838	0.83	0.066 (0.058; 0.073)	0.02, df=1; p=0.8845	Baseline
Method-U	540.20 (268)	0.846	0.828	0.066 (0.058; 0.074)	31.34, df=17; p=0.0181	Method-C
Method-R	540.20 (271)	0.848	0.832	0.065 (0.057; 0.073)	0, df=3; p=1	Method-U

**Table 20: Results of CFA with marker variable environmental dynamism for the explorative behavior model (own illustration); df stands for degrees of freedom; CFI stands for comparative fit index; TLI stands for Tucker-Lewis Index; RMSEA stands for root mean square error of approximation; CI stands for confidence interval; LR stands for likelihood ratio test**

Table 20 contains the results of the CFA analysis with marker variable environmental dynamism. The table shows that the Method-C model does not fit statistically significantly better than the baseline model. Accordingly, there is no evidence for shared common method variance. Method-U model fits significantly better than Method-C model. This means that common method variance is not the same for all indicators. Most importantly, Method-R model is not statistically significantly different from Method-U model. This shows that the relationships between the substantive variables are not skewed.

When investigating unethical pro-organizational behavior, I used individual resilience as marker variable, measured by the three-item scale reported by Luthans et al. (2007) (Cronbach's alpha = 0.54). The correlations between resilience and the substantive variables were almost 0 and in no case statistically significant (greed 0.04, unethical pro-organizational behavior -0.03, cognitive trust 0.01, and affective trust -0.02).

Table 21 illustrates the results of the analysis for the unethical pro-organizational behavior model. It illustrates the models' statistics, except for the baseline prep model which serves just as an auxiliary model. It can be observed that the Method-C model does not fit significantly better than the baseline model indicating that there is no evidence for shared common method variance. The results further show that the Method-U model does not fit better than the Method-C model, indicating that the common method variance is the same for all indicators. Lastly, the Method-R model is not significantly different than Method-U meaning that the relationships among substantive variables are not skewed by common method variance.

Model	$\chi^2$ (df)	CFI	TLI	RMSEA (90% CI)	LR of delta $\chi^2$	Model comparison
CFA with marker variable	558.63 (314)	0.878	0.864	0.058 (0.050; 0.066)		
Baseline	559.76 (324)	0.883	0.873	0.056 (0.048; 0.064)		
Method-C	559.71 (323)	0.882	0.872	0.056 (0.048; 0.064)	0.05, df=1; p=0.8166	Baseline
Method-U	540.20 (300)	0.88	0.86	0.059 (0.052; 0.067)	19.51, df=23; p=0.6714	Method-C
Method-R	540.21 (306)	0.883	0.866	0.057 (0.049; 0.065)	0.01, df=6; p=1	Method-U

**Table 21: Results of CFA with marker variable resilience for the unethical pro-organizational behavior model (own illustration); df stands for degrees of freedom; CFI stands for comparative fit index; TLI stands for Tucker-Lewis Index; RMSEA stands for root mean square error of approximation; CI stands for confidence interval; LR stands for likelihood ratio test**

First, whereas the analysis reveals that the relationships between the substantive variables of the explorative behavior model are somehow skewed when using psychological detachment as marker variable, this is not the case when using environmental dynamism. Also, the analysis on the model for unethical pro-organizational behavior shows that common method variance does not skew the relationship among substantive variables. Second, all analyses reveal that there is no evidence for shared common method variance. And third, while the analysis with marker variable environmental dynamism indicates that the common method variance may not be the same for all indicators, the other two analyses reveal that common method variance is the same for all indicators. In sum, I can conclude that common method variance seems to be not a major issue in my data.

### ***Multicollinearity***

Multicollinearity is an interdependency between variables “that can exist quite apart from the nature, or even the existence, of dependence” between variables (Farrar & Glauber, 1967, p. 93). Following Hair et al. (2010), I tested for multicollinearity by calculating the variance inflation factor and assessing the correlations between the substantive variables.

As Table 22 shows, the variance inflation factors in the two models were all between 1 and 2 – well below the critical value of 10 (Hair et al., 2010). The correlations between the variables of the explorative behavior model (see Table 23) were substantially lower than the critical threshold of 0.9 (Hair et al., 2010). Also for the unethical pro-organizational behavior model, the correlations were below the threshold of 0.7 (Hair et al., 2010), despite the expected high

correlation between the two dimensions of trust, namely cognitive and affective trust (see Table 24). In a nutshell, I do not expect that multicollinearity biases my results.

<b>Variable</b>	<b>Variance inflation factor in explorative behavior model</b>	<b>Variance inflation factor in unethical pro-organizational behavior model</b>
Greed GC (Group mean centered)	1.28	1.25
Industry experience GC	1.38	1.29
Cognitive trust GC	1.55	1.41
Venture size C (Grand mean centered)	1.16	1.15
Affective trust GC	1.52	1.51
Greed GC X Industry experience GC	1.15	
Greed GC X Cognitive trust GC	1.19	1.91
Greed GC X Venture size C	1.21	
Greed GC X Affective trust GC		1.80
Social desirability GC	1.33	1.28
Extraversion GC	1.23	1.21
Emotional stability GC	1.24	1.22
Openness GC	1.26	1.23
Conscientiousness GC	1.20	1.18
Agreeableness GC	1.25	1.24
Founding exp. GC	1.37	1.27
Participant's age GC	1.41	1.41
Gender GC	1.09	1.07
Exploitative behavior GC	1.24	
Team size C	1.30	1.30
No. entrepreneurs who left the team C	1.18	1.19
Venture age C	1.29	1.28
Industry (services)	1.13	1.12
Industry (E-commerce)	1.07	1.14
Industry (consumer prod.)	1.12	1.12
Industry (life sciences)	1.08	1.08
Industry (science)	1.02	1.02

**Table 22: Variance inflation factors for both models (own illustration)**

	Explorative behavior	Greed	Industry experience	Cognitive trust	Venture size
Explorative behavior	1				
Greed	0.12	1			
Industry experience	0.03	-0.14*	1		
Cognitive trust	0.1	-0.16*	0.14*	1	
Venture size	-0.04	-0.12	0.11	0.12	1

**Table 23: Correlation matrix for explorative behavior model (own illustration); \*\* p<0.01, \* p<0.05, † p<0.1**

	Unethical pro-organizational behavior	Greed	Cognitive trust	Affective trust
Unethical pro-organizational behavior	1			
Greed	0.12	1		
Cognitive trust	-0.13*	-0.16*	1	
Affective trust	-0.10	-0.17*	0.64**	1

**Table 24: Correlation matrix for unethical pro-organizational behavior model (own illustration); \*\* p<0.01, \* p<0.05, † p<0.1**

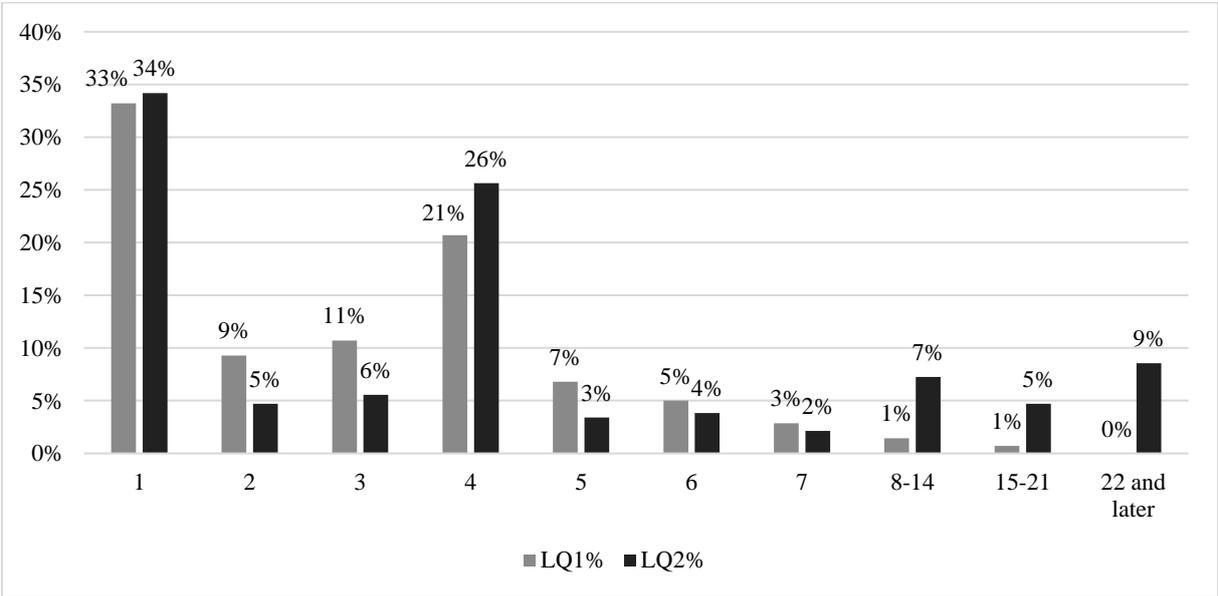
### *Nonresponse bias*

Nonresponse bias refers to a problem when the part of invited survey participants who participate in a study substantially differs from those who did not participate (Armstrong & Overton, 1977). This case, when the participants who answer a survey do not represent the intended population, undermines the generalizability of the study's findings (Rogelberg & Stanton, 2007).

There are measures counteracting non-response bias, mostly aiming on reducing nonresponse (Armstrong & Overton, 1977). Rogelberg and Stanton (2007, p. 197) identify eleven techniques for preventing nonresponse. These are to (1) "prenotify participants" in order to prepare them for the study, (2) "publicize the survey" informing the participants about purpose and contribution of the study, (3) "design carefully" so that it is pleasant to answer for participants, (4) "provide incentives" for participation, (5) "manage survey length" not overwhelming participants, (6) "use reminder notes", (7) "provide response opportunities" so that everyone who wants to participate can participate, (8) "monitor survey response", (9) "establish survey importance", (10) "foster survey commitment", and (11) "provide survey feedback" which has

manly effect on upcoming surveys rather than the current survey (Rogelberg & Stanton, 2007, p. 197). When preparing and conducting the BEST study, we took those aspects into account (see chapter 3.1).

In order to assess potential nonresponse bias, I analyzed whether the answers of late respondents significantly differed from the answers of early respondents (Armstrong & Overton, 1977). This test bases on the assumption that “persons responding later are [...] more similar to nonrespondents” (Armstrong & Overton, 1977, p. 397). For doing so, I first checked when our respondents answered the questionnaires, thus, the first long questionnaire and the second long questionnaire. Figure 12 shows how many days after receiving the questionnaire, our respondents answered the questionnaire. The median for the first long questionnaire was at 2.66 and for the second questionnaire 3.21. As Figure 12 illustrates, most of the participants followed our suggestion to answer the Friday sent questionnaire until the upcoming Monday (74% for LQ1; 70% for LQ2). I considered participants who answered the questionnaire as we proposed until Monday (inclusive) to be early respondents. Those who answered the questionnaires after Monday, I considered to be late respondents.



**Figure 12: Time to response for LQ1 and LQ2 (own illustration); x-axis: answering time in days after participants received the questionnaire; y-axis: respondents in percent**

Table 25 reports the results of a two-sample t-test distinguishing between early respondents, participants who answered the questionnaire until Monday (inclusive), versus participants who answered the questionnaire after Monday. The t-test tests the hypothesis that the mean of early

respondents is unequal to the mean of late respondents for all substantial variables. The differences between the mean values are comparably low and the t-test is in no case statistically significant (e.g., for greed  $t = 0.42$ ,  $p = 0.68$ ). Thus, I can conclude, that nonresponse bias seems not to be a major issue in my data.

Variable	Survey	Mean of early respondents (until Monday 11:59pm)	Mean of late respondents (after Monday 11:59pm)	Difference	Significance <sup>1</sup>
Explorative behavior	LQ2	5.20	5.32	-0.12	0.41
Unethical pro-organizational behavior	LQ2	3.27	3.22	0.06	0.76
Greed	LQ1	3.13	3.05	0.08	0.68
Industry experience	LQ1	5.52	6.04	-0.51	0.54
Cognitive trust	LQ1	6.02	5.92	0.10	0.42
Venture size	LQ1	5.57	6.68	-1.12	0.26
Affective trust	LQ1	6.18	6.20	-0.02	0.87

**Table 25: T-test comparing early and late respondents (own illustration); <sup>1</sup>Hypothesis: difference between the mean of early respondents and the mean of late respondents is unequal 0**

## 4. Results

In this chapter, I illustrate the results of my analyses. In section 4.1, I provide descriptive statistics for all variables that I use. Subsequently, I present the analysis and the results of the two models that I analyzed separately. In section 4.2, I describe the analysis and the results of the model that describes the relationship between greed and *explorative behavior*. First, I provide the results on the hypothesis testing (4.2.1) and second, I illustrate how I tested the robustness of the model (4.2.2). In section 4.3, I present the analysis and results for the model that describes the relationship between greed and *unethical pro-organizational behavior*. Again, I first explain how I tested the hypotheses and present the outcomes of this hypothesis testing (4.3.1). Thereafter, I present some robustness tests (4.3.2).

### 4.1 Descriptive statistics

Table 26 contains the descriptive statistics. For each variable I report the number of observations (Obs.), the mean value, the standard deviation (SD), minimum (Min.) and maximum (Max.) values that I observed in the sample, as well as the correlations with all other variables. The first row reports values for greed, row 2-3 present the figures for the dependent variables *explorative behavior* and *unethical pro-organizational behavior*. In rows 4-7, I report the descriptive statistics for variables that represent a moderating variable at least in one of the two models. In rows 8-25, I present data on the control variables.

The table illustrates that the number of observations diverge between the variables. For example, I captured 280 observations on industry experience, 276 observations on the Big Five personality traits, 275 observations on greed, and 233 observations on *explorative* and *unethical pro-organizational behavior*. There are three potential reasons for this: First, the difference is due to the order I measured the constructs. For example, whereas I captured data on industry experience in the first long questionnaire, I measured *explorative* and *unethical pro-organizational behavior* in the second questionnaire. As some participants dropped out of our study in between the two questionnaires, I captured less observations in the second questionnaire in comparison to the first questionnaire. Interestingly, I could not observe a pattern due to the order of constructs measured within one questionnaire. Second, participants may have been reluctant to answer questions on very personal constructs like greed or the Big Five personality traits. And third, the answering scheme (e.g., Likert-type scale vs. text) may have influenced whether participants answered a question or not.

Regarding the mean values with a focus on the substantive variables, the values for explorative behavior (5.24), cognitive trust (6.00) and affective trust (6.19) seem high for variables measured on a 1-7 Likert-type scale. Though, the mean for explorative behavior is in line with extant studies on explorative behavior (5.28; Mom et al., 2007). The same applies to the means for cognitive and affective trust where scholars observe similar mean values (McAllister, 1995; Webber, 2008), particularly in entrepreneurship contexts (Khan et al., 2015; Ren, Shu, Bao, & Chen, 2016). Moreover, the minimum and maximum values for explorative behavior (min = 2; max = 7; var = 0.91), cognitive trust (min = 3; max = 7; var = 0.71), and affective trust (min = 2.8; max = 7; var = 0.61) indicate variance in the data.

Table 26 further illustrates that there are statistically significant *correlations* between explorative behavior and openness to experience (cor. = 0.25;  $p < 0.05$ ) and exploitative behavior (cor. = 0.33;  $p < 0.05$ ), respectively. A positive, statistically significant correlation between explorative behavior and openness to experience seems reasonable as explorative behavior refers to looking for new opportunities, experimenting, and innovating (March, 1991; Mom et al., 2007), which seems to base on a certain openness to experiences. The positive and statistically significant correlation between explorative and exploitative behavior is also not surprising as these two constructs are closely related and an organization should engage in both exploration and exploitation activities (March, 1991; Mom et al., 2007). Moreover, there is a statistically significant negative correlation between unethical pro-organizational behavior and social desirability (cor. =  $-0.22$ ;  $p < 0.05$ ). This makes sense as a participant scoring high in social desirability is less likely to honestly report on unethical behavior. Industry experience is statistically significantly positively correlated with participant's age (cor. = 0.57;  $p < 0.05$ ) and negatively with team size (cor. =  $-0.23$ ;  $p < 0.05$ ). It seems reasonable that there is a positive correlation between industry experience and participant's age as older participants have had more time to spend in their industry. The statistically significant negative correlation between industry experience and team size, in contrast, is rather surprising. One explanation could be that entrepreneurs with more industry experience have acquired more knowledge in the industry and therefore need fewer team members to cover the knowledge needed in this industry compared to entrepreneurs with less industry experience. The high positive and statistically significant correlation between cognitive and affective trust (cor. = 0.64;  $p < 0.05$ ) is as expected (Swift & Hwang, 2013; Yang, Mossholder, & Peng, 2009). Moreover, as expected I observe a statistically significant positive correlation between venture size and venture age (cor. = 0.32;  $p < 0.05$ ).

#	Variable	Obs.	Mean	SD	Min.	Max.	1	2	3	4	5	6	7	8	9	10	11	12
1	Greed	275	3.11	1.21	1.00	7.00	1.00											
2	Explorative behavior	233	5.24	0.95	2.00	7.00	0.12	1.00										
3	UPB	233	3.26	1.19	1.00	7.00	0.12	-0.06	1.00									
4	Industry exp.	280	5.63	5.61	0.00	40.00	-0.14†	0.03	-0.03	1.00								
5	Cognitive trust	280	6.00	0.84	3.00	7.00	-0.16†	0.10	-0.13†	0.14†	1.00							
6	Venture size	280	5.79	6.73	0.00	50.00	-0.12	-0.04	0.04	0.11	0.12	1.00						
7	Affective trust	280	6.19	0.78	2.80	7.00	-0.17†	-0.01	-0.10	-0.01	0.64**	0.07	1.00					
8	Social desirability	233	0.54	0.21	0.00	1.00	-0.03	0.02	-0.22**	-0.10	0.01	-0.07	0.01	1.00				
9	Extraversion	276	5.11	1.38	1.00	7.00	-0.05	0.12	0.16*	-0.05	0.18*	0.01	0.16†	0.00	1.00			
10	Emotional stability	276	5.68	1.01	2.00	7.00	-0.18*	0.13†	-0.09	-0.04	0.09	0.06	0.07	0.21*	0.06	1.00		
11	Openness	276	6.06	0.82	3.50	7.00	0.05	0.25**	-0.03	-0.02	0.16†	-0.10	0.08	0.10	0.26**	0.11	1.00	
12	Conscientiousness	276	5.77	1.00	2.00	7.00	-0.06	0.06	-0.13†	-0.02	0.07	-0.02	0.04	0.20*	-0.01	0.22**	0.09	1.00
13	Agreeableness	276	4.77	1.16	1.00	7.00	-0.10	-0.10	-0.12	0.03	0.12	-0.05	0.13†	0.26**	0.08	0.19*	0.14†	0.21*
14	Founding exp.	280	1.08	1.73	0.00	14.00	0.05	0.10	-0.03	0.16†	-0.01	0.15†	-0.07	-0.06	0.10	0.04	-0.04	-0.09
15	Participant's age	280	34.84	7.57	21.00	64.00	-0.16†	0.03	-0.07	0.57**	0.20*	0.11	0.01	0.02	0.04	0.01	0.02	0.06
16	Gender	280	0.11	0.32	0.00	1.00	-0.11	-0.18*	-0.03	-0.05	0.01	-0.14†	0.02	0.01	0.06	-0.08	0.05	0.08
17	Exploitative behavior	233	5.10	0.95	2.17	7.00	0.02	0.33**	-0.08	0.06	0.16†	0.06	0.05	-0.02	0.16†	0.12	0.12	0.05
18	Team size	280	2.85	1.13	2.00	8.00	0.18*	-0.11	0.04	-0.23**	-0.17*	-0.09	-0.13†	0.00	0.01	0.13†	-0.12	-0.02
19	No. entrepreneurs who left the team	280	0.08	0.32	0.00	2.00	0.08	-0.04	0.11	-0.11	-0.13	-0.09	-0.15†	-0.05	0.02	0.08	-0.04	0.04
20	Venture age	280	2.66	1.33	0.00	6.00	-0.17*	-0.20*	-0.06	0.16†	0.14†	0.32**	0.05	-0.08	0.03	-0.03	-0.13	-0.05
21	Ind. (services)	280	0.54	0.50	0.00	1.00	0.04	0.04	-0.03	0.15†	0.03	0.05	-0.03	-0.08	0.04	0.11	0.05	0.03
22	Ind. (E-com.)	280	0.22	0.41	0.00	1.00	0.06	-0.03	0.05	-0.09	0.01	0.03	0.14†	0.03	0.05	0.08	0.08	-0.05
23	Ind. (cons. prod.)	280	0.05	0.21	0.00	1.00	-0.16†	0.02	-0.04	-0.06	0.04	-0.04	0.04	-0.01	0.06	0.00	-0.04	-0.06
24	Ind. (life sc.)	280	0.09	0.28	0.00	1.00	0.08	-0.11	-0.07	0.00	0.05	-0.05	0.01	0.01	-0.04	-0.10	0.06	0.02
25	Industry (science)	280	0.09	0.29	0.00	1.00	-0.08	0.04	0.03	-0.04	0.06	0.03	0.08	0.02	0.00	0.00	-0.03	0.00

**Table 26: Descriptive statistics (own illustration); exp. stands for experience; Max. stands for maximal value; Min. stands for minimal value; Obs. stands for Observations; SD stands for Standard Deviation; UPB stands for unethical pro-organizational behavior; Ind. stands for industry; E-com stands for E-commerce; cons. prod. stands for consumer products; life sc. stands for life sciences; \*\* p<0.01, \* p<0.05, † p<0.1**

#	Variable	Obs.	Mean	SD	Min.	Max.	13	14	15	16	17	18	19	20	21	22	23	24
12	Conscientiousness	276	5.77	1.00	2.00	7.00												
13	Agreeableness	276	4.77	1.16	1.00	7.00	1.00											
14	Founding exp.	280	1.08	1.73	0.00	14.00	0.04	1.00										
15	Participant's age	280	34.84	7.57	21.00	64.00	0.15†	0.33**	1.00									
16	Gender	280	0.11	0.32	0.00	1.00	0.12	-0.10	0.06	1.00								
17	Exploitative behavior	233	5.10	0.95	2.17	7.00	0.15†	0.05	0.01	0.03	1.00							
18	Team size	280	2.85	1.13	2.00	8.00	-0.06	-0.09	-0.38**	-0.05	0.05	1.00						
19	No. entrepreneurs who left the team	280	0.08	0.32	0.00	2.00	0.05	-0.07	-0.12	0.19*	0.10	0.30**	1.00					
20	Venture age	280	2.66	1.33	0.00	6.00	0.11	0.03	0.27**	0.09	-0.04	-0.30**	-0.05	1.00				
21	Ind. (services)	280	0.54	0.50	0.00	1.00	0.03	0.08	0.05	0.02	0.10	0.07	-0.06	-0.05	1.00			
22	Ind. (E-com.)	280	0.22	0.41	0.00	1.00	0.19*	-0.01	-0.03	-0.01	0.03	-0.04	-0.04	-0.02	-0.11	1.00		
23	Ind. (cons. prod.)	280	0.05	0.21	0.00	1.00	0.00	0.02	0.06	0.12	0.00	-0.15†	0.05	0.13	-0.16†	-0.06	1.00	
24	Ind. (life sc.)	280	0.09	0.28	0.00	1.00	-0.03	-0.06	0.13†	0.06	-0.07	-0.06	-0.01	-0.04	-0.17†	-0.06	-0.10	1.00
25	Industry (science)	280	0.09	0.29	0.00	1.00	-0.04	-0.09	-0.05	0.03	-0.11	-0.03	-0.03	0.02	-0.08	-0.03	-0.05	-0.05

**Table 26: Descriptive statistics (own illustration); exp. stands for experience; Max. stands for maximal value; Min. stands for minimal value; Obs. stands for Observations; SD stands for Standard Deviation; UPB stands for unethical pro-organizational behavior; Ind. stands for industry; E-com stands for E-commerce; cons. prod. stands for consumer products; life sc. stands for life sciences; \*\* p<0.01, \* p<0.05, † p<0.1**

## **4.2 Explorative behavior: Analysis and results**

In this section I illustrate the results of the hierarchical linear modelling (HLM) that I apply for analyzing the impact of greed on explorative behavior in the nested data structure. In 4.2.1, I provide the results of the hypothesis testing. In 4.2.2, I evaluate the robustness of the models.<sup>11</sup>

### **4.2.1 Hypotheses testing for explorative behavior model**

In this subsection, I present three models that I calculate in order to test my hypotheses and their predictive power. Thereafter, I test one hypothesis after the other providing the results of the HLM and simple slope analyses.

Table 27 shows the regression results of the HLM. Model 1 is the base model. In this model, only the control variables predict explorative behavior. I do not use this model for hypothesis testing as it does not contain the independent variable greed (nor any of the moderating variables industry experience, cognitive trust and venture size). In Model 2, I add the independent variable greed to the base model. As my first hypothesis argues for a main effect of greed on explorative behavior, I can use Model 2 for testing Hypothesis 1. Model 3 includes the control variables, the independent variable greed and the moderating variables industry experience, cognitive trust, and venture size. It can be seen as the full model and provides information that is relevant for the analysis on all four hypotheses.

R<sup>2</sup> is a statistical measure for assessing the predictive power of a model in general, and the proportion of the variance that is explained by the model in particular. However, according to Hox et al. (2017), there are two major issues with R<sup>2</sup> in multilevel models: First, in multilevel models the concept of explained variances is more complex because there are unexplained variances at each of the model's levels. Second, in case of complex models with random slopes, which I have, explained variance cannot be defined by a single definition. Due to these issues, different ways of calculating R<sup>2</sup> have been developed. However, not all of these approaches are suitable when the analyzed model includes variables that are centered by the group mean. In the case of group mean centered variables, it can occur that the value for R<sup>2</sup> is negative – which does not make sense because the predicted power of a model cannot be negative (Hox et al.,

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<sup>11</sup> As mentioned in the introduction (see 1.3), parts of the content on explorative behavior analysis and results (4.2) have similar content as an unpublished paper that I wrote as first author during my PhD together with Professor Mirjam Knockaert (Ghent University), and Professor Holger Patzelt (Technical University of Munich).

2017). As I am analyzing multilevel models including variables that are centered at the group mean, I use the approach of Snijders and Bosker (1994) for calculating an approximation of  $R^2$ . As Table 27 shows, the statistical power does not increase substantially neither on level 1 nor on level 2 between the base Model 1 (Snijders/Bosker  $R^2$  Level 1 = 0.236; Snijders/Bosker  $R^2$  Level 2 = 0.190) and Model 2 (Snijders/Bosker  $R^2$  Level 1 = 0.239; Snijders/Bosker  $R^2$  Level 2 = 0.192) that adds greed as a predictive variable to the base model. However, I see that the explained variance increases on both levels when I add the moderating variables, thus, between Model 2 and the full Model 3 (Snijders/Bosker  $R^2$  Level 1 = 0.269; Snijders/Bosker  $R^2$  Level 2 = 0.217). These values indicate that 26.9% of the individual level variance and 21.7% of the team level variance is explained by the model, respectively.

### ***Hypothesis 1***

The first hypothesis proposes that entrepreneurs' level of greed relates positively to their tendency to engage in explorative behavior. Thus, it postulates a positive main effect of entrepreneurs' greed on explorative behavior. In order to test the statistical significance of the first hypothesis, I analyze Model 2 that includes the control variables and greed, and Model 3 that includes control variables, greed and the moderating variables.

In Model 2, the main effect is positive but not statistically significant ( $\beta = 0.073$ ;  $p = 0.176$ ). Also, in Model 3 the main effect of greed on explorative behavior is positive but not statistically significant ( $\beta = 0.037$ ;  $p = 0.518$ ). Therefore, I do not find support for the first hypothesis.

	<b>Model 1</b>		<b>Model 2</b>		<b>Model 3</b>	
Constant	5.320**	(0.086)	5.322**	(0.085)	5.298**	(0.085)
<i>Control variables</i>						
Social desirability GC (Group mean centered)	0.668*	(0.331)	0.642†	(0.331)	0.574†	(0.320)
Extraversion GC	0.072	(0.047)	0.077	(0.047)	0.085†	(0.046)
Emotional stability GC	0.067	(0.091)	0.088	(0.097)	0.104	(0.100)
Openness GC	0.180*	(0.085)	0.176*	(0.084)	0.151†	(0.087)
Conscientiousness GC	0.040	(0.080)	0.047	(0.081)	0.034	(0.083)
Agreeableness GC	-0.164**	(0.058)	-0.163**	(0.057)	-0.148**	(0.056)
Founding experience GC	0.065†	(0.034)	0.062†	(0.034)	0.032	(0.039)
Age participant GC	-0.002	(0.013)	-0.001	(0.013)	0.001	(0.016)
Gender GC	-0.638**	(0.203)	-0.612**	(0.209)	-0.627**	(0.205)
Affective trust GC	0.087	(0.103)	0.106	(0.101)	0.039	(0.120)
Exploitative behavior GC	0.392**	(0.078)	0.397**	(0.079)	0.377**	(0.080)
Team size C (Grand mean centered)	-0.204*	(0.079)	-0.210**	(0.080)	-0.205**	(0.069)
No. people left team C	0.302	(0.308)	0.318	(0.309)	0.181	(0.220)
Venture age C	-0.170**	(0.053)	-0.171**	(0.053)	-0.165**	(0.056)
Industry (services)	-0.052	(0.180)	-0.056	(0.180)	-0.022	(0.176)
Industry (E-commerce)	-0.238	(0.425)	-0.248	(0.428)	-0.330	(0.387)
Industry (consumer products)	0.022	(0.224)	0.025	(0.227)	0.041	(0.220)
Industry (life sciences)	-0.476**	(0.175)	-0.480**	(0.174)	-0.443*	(0.177)
Industry (science)	0.178	(0.261)	0.175	(0.263)	0.222	(0.288)
<i>Main effects</i>						
Greed GC			0.073	(0.054)	0.037	(0.057)
Industry experience GC					-0.003	(0.016)
Cognitive trust GC					0.184	(0.140)
Venture size C					0.005	(0.009)
<i>Interaction effects</i>						
Greed GC X Industry experience GC					-0.038†	(0.021)
Greed GC X Cognitive trust GC					-0.258*	(0.104)
Greed GC X Venture size C					-0.019	(0.012)
Observations	233		233		233	
Number of groups	111		111		111	
Snijders/Bosker R <sup>2</sup> Level 1:	0.236		0.239		0.269	
Snijders/Bosker R <sup>2</sup> Level 2:	0.190		0.192		0.217	

**Table 27: HLM results for explorative behavior model (own illustration); robust standard errors in parentheses; \*\* p<0.01, \* p<0.05, † p<0.1**

## Hypothesis 2

The second hypothesis postulates that the relationship between entrepreneurs' greed and their tendency to engage in explorative behavior is moderated by industry experience, such that this relationship is more positive under low industry experience compared to higher industry experience. Full Model 3 provides information on whether the proposed relationship is statistically significant or not. As I can observe in Table 27, the interaction effect of greed and industry experience is marginally significant and negative ( $\beta = -0.038$ ;  $p = 0.065$ ).

In Figure 13, I plotted the interaction effect of greed and industry experience. On the x-axis is greed and on the y-axis is explorative behavior. The solid line illustrates the relationship between greed and explorative behavior for low industry experience ( $-1$  SD) and the dashed line represents the relationship for high industry experience ( $+1$  SD) both including the 90% confidence intervals for possible values of greed. The graph shows that the relationship between greed and explorative behavior is more positive for *low* industry experience than for *high* industry experience.

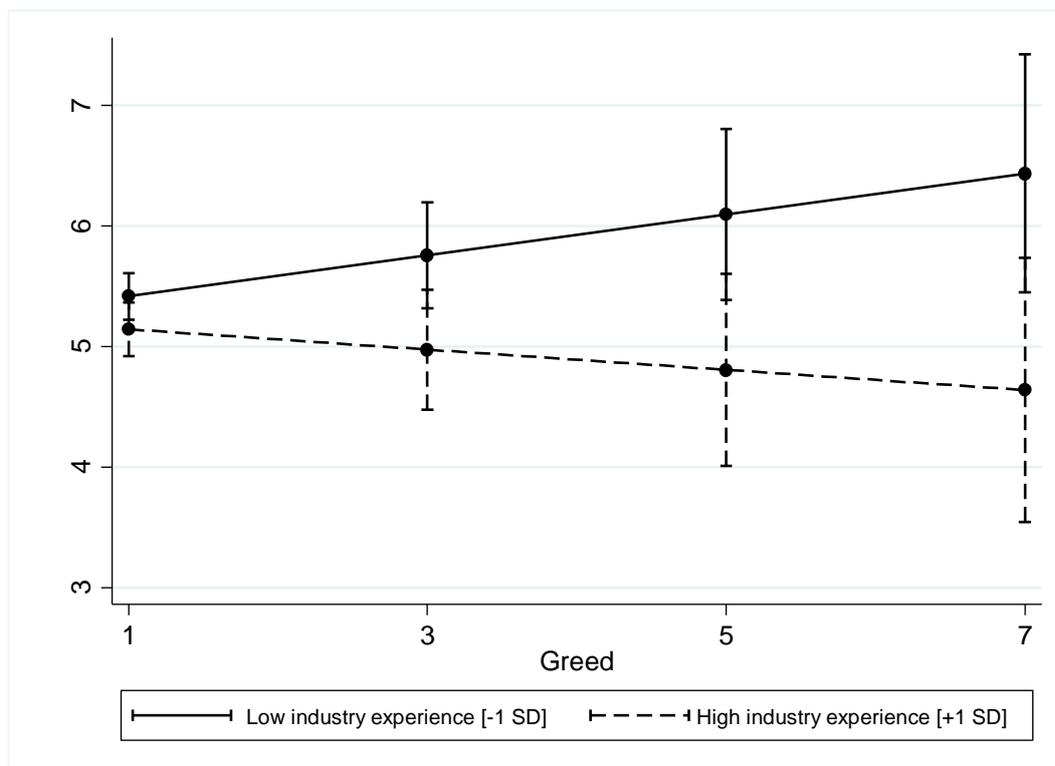


Figure 13: Relationship between greed and explorative behavior contingent on industry experience with 90% confidence intervals (own illustration)

Simple slope analysis (Aiken, West, & Reno, 1991) tests whether the slopes significantly differ from zero for different values of the moderator, in this case low industry experience (-1 SD) and high industry experience (+1 SD). As Table 28 shows, the slope for *low* industry experience is positive and differs statistically significantly from zero (beta = 0.170; p = 0.046). The slope for *high* industry experience is negative and does not statistically significantly differ from zero (beta = -0.084; p = 0.365). Overall, I find marginal support for Hypothesis 2.

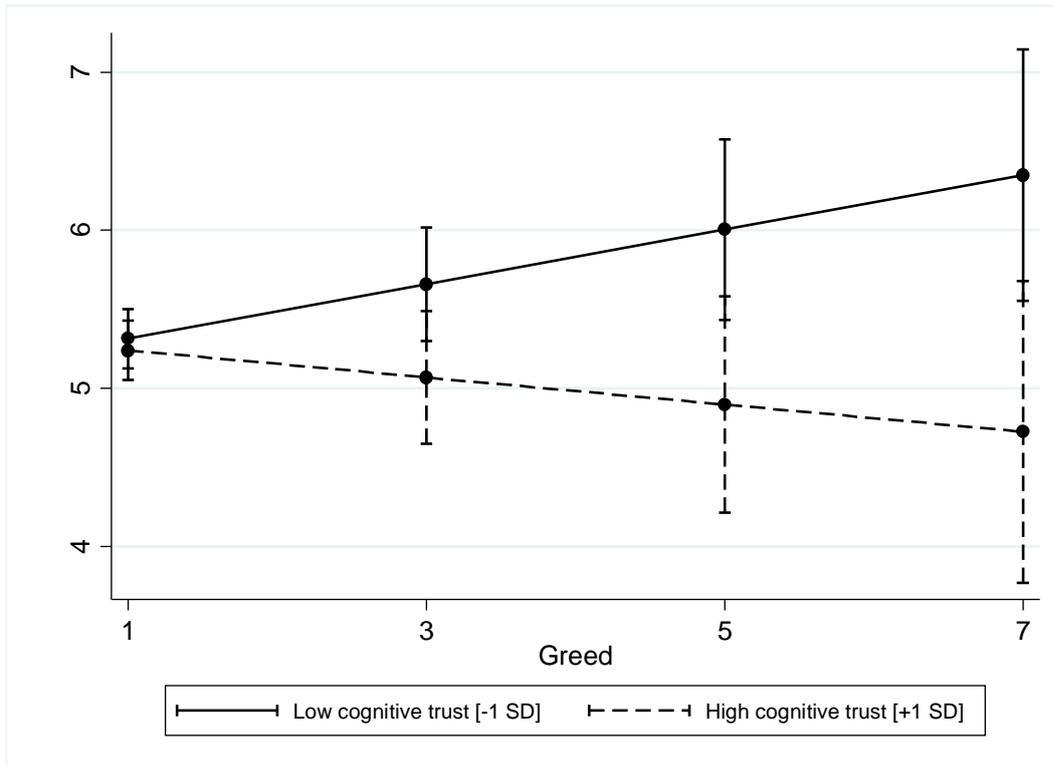
Industry experience	Dy/dx (slope coefficient)	Standard error	P> z	95% confidence interval	
Low (-1 SD)	0.170	0.085	0.046	0.003	0.337
High (+1 SD)	-0.084	0.093	0.365	-0.266	0.098

**Table 28: Simple slope analysis in explorative behavior model for industry experience (own illustration)**

### ***Hypothesis 3***

Hypothesis 3 proposes that the relationship between entrepreneurs' greed and their tendency to engage in explorative behavior is moderated by cognitive trust towards team members, such that this relationship is more positive under comparably low cognitive trust compared to comparably high cognitive trust. The full Model 3 in Table 27 reveals that the interaction effect of entrepreneurs' greed and cognitive trust is negative and statistically significant (beta = -0.258; p = 0.013).

Figure 14 graphically illustrates the proposed relationship. Whereas greed is on the x-axis and explorative behavior is on the y-axis, the solid line stands for comparably low cognitive trust (-1 SD) and the dashed line for comparably high cognitive trust (+1 SD) and both include the 90% confidence intervals (two-sided). The graph shows that the relationship between greed and explorative behavior is more positive for entrepreneurs with *low* cognitive trust towards teammates compared to entrepreneurs with comparably *high* cognitive trust towards their teammates.



**Figure 14: Relationship between greed and explorative behavior contingent on cognitive trust with 90% confidence intervals (own illustration)**

The simple slope analysis (Aiken et al., 1991) illustrated in Table 29 reveals that for comparably *low* cognitive trust, the slope is positive and statistically significantly differs from zero (beta = 0.172;  $p = 0.013$ ). The slope for comparably *high* cognitive trust is negative and not statistically significantly different from zero (beta =  $-0.086$ ;  $p = 0.302$ ). Overall, I find support for Hypothesis 3.

Cognitive trust	Dy/dx (slope coefficient)	Standard error	P> z	95% confidence interval	
Low (-1 SD)	0.172	0.070	0.013	0.036	0.309
High (+1 SD)	-0.086	0.083	0.302	-0.249	0.077

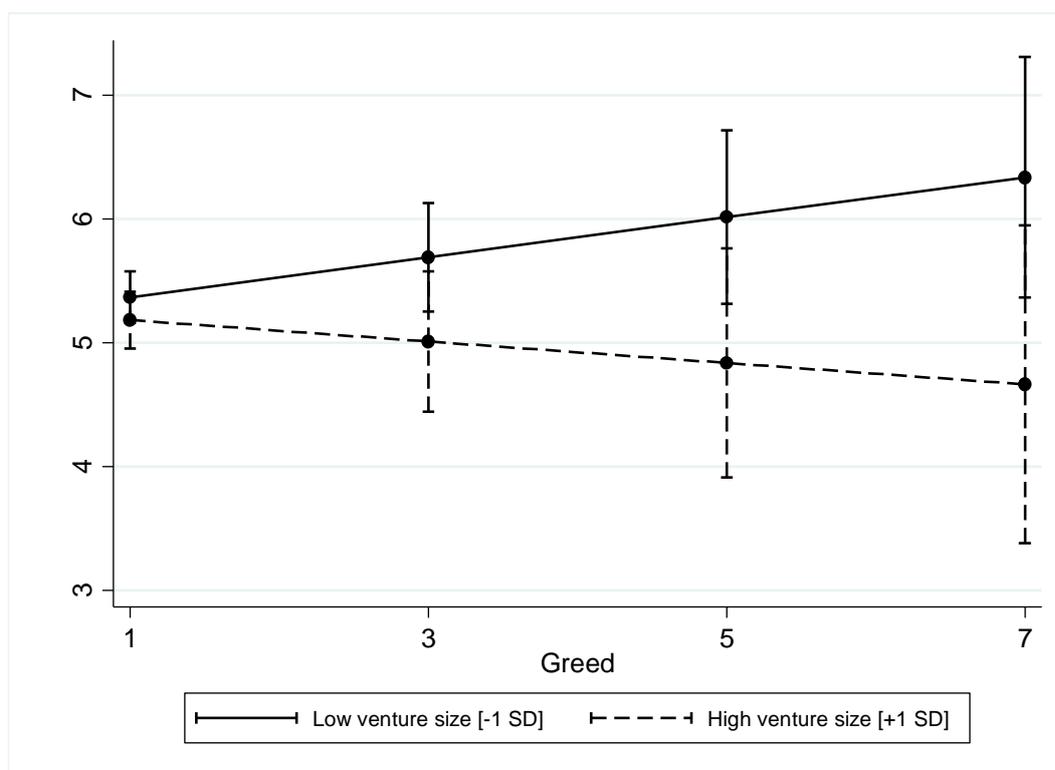
**Table 29: Simple slope analysis in explorative behavior model for cognitive trust (own illustration)**

#### ***Hypothesis 4***

Hypothesis 4 postulates that the relationship between entrepreneurs' greed and their tendency to engage in explorative behavior is moderated by venture size, such that this relationship is more positive under comparably low venture size compared to comparably high venture size.

From the full Model 3 in Table 27, I can observe that the proposed interaction effect is negative and not statistically significant ( $\beta = -0.019$ ;  $p = 0.114$ ).

Figure 15 provides a graphical illustration of this relationship between entrepreneurs' greed and their tendency to engage in explorative behavior contingent on venture size including the two-sided 90% confidence intervals. Similar to Hypotheses 2 and 3, the relationship between entrepreneurs' greed (x-axis) and their explorative behavior (y-axis) depends on the moderator, in this case venture size. For comparably *small* ventures ( $-1$  SD; solid line), the relationship is positive. For comparably *big* ventures ( $+1$  SD; dashed line), the relationship is negative.



**Figure 15: Relationship between greed and explorative behavior contingent on venture size with 90% confidence intervals (own illustration)**

Table 30 provides the results of the simple slope analysis for comparably small ventures ( $-1$  SD) and comparably big ventures ( $+1$  SD). The slope for comparably *small* ventures is positive and marginally statistically significantly differs from zero ( $\beta = 0.161$ ;  $p = 0.052$ ). Note that the confidence interval includes zero, indicating that the slope is not significantly different from 0 at the 5%-significance level. Though, as the p-value indicates, the slope is different from zero at the 10%-significance level for small ventures, and thus, *marginally significantly* different

from zero. For comparably *big* ventures it is negative but does not statistically significantly differ from zero (beta =  $-0.087$ ;  $p = 0.429$ ). Overall, I find no support for Hypothesis 4.

Venture size	Dy/dx (slope coefficient)	Standard error	P> z	95% confidence interval	
Low (-1 SD)	0.161	0.083	0.052	-0.001	0.325
High (+1 SD)	-0.087	0.110	0.429	-0.301	0.128

**Table 30: Simple slope analysis in explorative behavior model for venture size (own illustration)**

#### 4.2.2 Robustness tests for explorative behavior model

In order to validate the robustness of my findings, I conducted several robustness tests. The results of seven additional models are reported in Table 31 and in Table 32. Besides, I conducted a simple slope analysis on the full model (Model 3) restricting the values of all three moderators simultaneously (Table 33).

Among organizational scholars, there is an ongoing debate on whether to include control variables in regression models or not. Most scholars agree that the inclusion of a control variable needs to be justified (Atinc, Simmering, & Kroll, 2012; Becker, 2005; Spector & Brannick, 2011). Although I do provide a reasoning for the inclusion of each control variable in section 3.3.8, I conduct robustness tests with different sets of control variables. The models reported in Table 31 do not include any control variables (Model 4), include only team level control variables (Model 5), and only individual level control variables (Model 6). Model 7 builds on the set of control variables of full Model 3 but I drop affective trust from the control variables. Table 32 illustrates models that appear closer to the full Model 3 regarding their control variables. As such, these models build on the same set of control variables but use different operationalizations for venture size, specifically workforce (Model 8) and revenues (Model 9). Model 10 includes only observations from teams that did not experience a change in their team composition.

##### ***Model 4 (no control variables)***

Model 4 does not include any control variables and therefore accounts for the ongoing discussion on the justifiability to include control variables in regression models (Atinc et al., 2012; Becker, 2005; Spector & Brannick, 2011). Comparing Model 4 to the full Model 3

provides insights on whether the findings described in 4.2.1 are substantially driven by the control variables and not by the substantive variables.

Table 31 includes the regression output of Model 4. In line with the full Model 3, the *main effect* of greed on explorative behavior is not statistically significant in Model 4 (beta =  $-0.007$ ;  $p = 0.917$ ). Thus, like Model 3, Model 4 does not find support for Hypothesis 1.

Moreover, there are changes in the significance levels of the *interaction effects*. First, the interaction effects of greed with industry experience and with cognitive trust have gained significance from Model 3 to Model 4. The interaction effect of greed with industry experience is significant on a 5%-significance level in Model 4 (beta =  $-0.052$ ;  $p = 0.024$ ) compared to a 10%-significance level in the full Model 3. While I find marginal support for Hypothesis 2 in my main analysis, Model 4 substantiates that there is a moderating effect of industry experience on the relationship between greed and explorative behavior. Regarding Hypothesis 3, the interaction effect of greed with cognitive trust is statistically significant at a 1%-significance level in Model 4 (beta =  $-0.297$ ;  $p = 0.005$ ) compared to a 5%-significance level in the full Model 3. As in Model 3, the interaction effect of greed and venture size is still not significant in Model 4.

#### ***Model 5 (team level control variables only)***

Model 5 includes only control variables at the team level. These are team size, number of people who left the team, venture age and industry.

Table 31 contains the regression results of Model 5. The information Model 5 provides on Hypothesis 1 is consistent with the results of my main analysis: The *main effect* of greed on explorative behavior is not statistically significant (Hypothesis 1; beta =  $0.004$ ;  $p = 0.948$ ).

Regarding *interaction effects*, and thus, Hypotheses 2, 3, and 4, there is a discrepancy between the results of full Model 3 and robustness test Model 5. In Model 5, the interaction effect of greed with industry experience (Hypothesis 2; beta =  $-0.050$ ;  $p = 0.016$ ) is significant, whereas it is only marginally significant in full Model 3. The interaction effect of greed with cognitive trust (Hypothesis 3; beta =  $-0.283$ ;  $p = 0.026$ ) is significant, just as it is in full Model 3. And lastly, in line with full Model 3 where I observe an insignificant interaction effect of greed with venture size, this interaction effect is also not statistically significant in Model 5 (Hypothesis 4; beta =  $-0.013$ ;  $p = 0.358$ ).

### ***Model 6 (individual level control variables only)***

Model 6 includes only individual level control variables. The individual level control variables are social desirability, the Big Five personality dimensions (extraversion, emotional stability, openness, conscientiousness, agreeableness), founding experience, age and gender of the participant, affective trust, and exploitative behavior.

Model 6 is illustrated in Table 31. Consistent with my main analysis, I observe a non-significant *main effect* of greed on explorative behavior in Model 6 indicating no support for Hypothesis 1 (beta = 0.025; p = 0.660).

The results on the *interaction effects* in robustness test Model 6 are similar to those in full Model 3 for Hypotheses 2, 3, and 4. Similar to the full Model 3, the interaction of greed with industry experience is marginally significant (Hypothesis 2; beta = -0.037; p = 0.079). The interaction of greed with cognitive trust is highly significant in Model 6 (Hypothesis 3; beta = -0.259; p = 0.004), thus, at a 1%-significance level in Model 6 compared to a 5%-significance level in Model 3. Again, and in line with full Model 3, the interaction of greed with venture size is not significant in Model 6 (Hypothesis 4; beta = -0.018; p = 0.121). In general, the lack of team level control variables in Model 6 (compared to full Model 3), has an impact primarily on the significance level of the interaction effect of greed with cognitive trust.

### ***Model 7 (all control variables of full model except for affective trust)***

Besides cognitive trust, affective trust is one of two dimensions of trust (e.g., McAllister, 1995). In the full Model 3, I investigate on a moderating effect of cognitive trust on the relation between greed and explorative behavior. In order to rule out potential confounding effects of affective trust, I control for it in Model 3. By comparing Model 3 that includes all control variables with Model 7 that includes all control variables except for affective trust, I receive hints on whether there is a confounding effect of affective trust.

As Table 31 shows, the *main effect* of greed on explorative behavior in Model 7, is not significant (Hypothesis 1; beta = 0.035; p = 0.539). This is in line with all the other models including full Model 3.

In line with full Model 3, the *interaction effect* of greed with industry experience is significant at the 10%-level (Hypothesis 2; beta = -0.038; p = 0.071), thus, marginally significant. Further, the findings of Model 7 regarding a significant interaction effect of greed and cognitive trust are consistent with the findings in my main analysis (Hypothesis 3; beta = -0.258; p = 0.013).

And in line with full Model 3 where I observe a non-significant interaction of greed and venture size, this interaction is also not statistically significant in Model 7 (Hypothesis 4;  $\beta = -0.018$ ;  $p = 0.123$ ).

	<b>Model 4</b>		<b>Model 5</b>		<b>Model 6</b>		<b>Model 7</b>	
Constant	5.240**	(0.068)	5.277**	(0.083)	5.264**	(0.068)	5.297**	(0.085)
<i>Control variables</i>								
Social desirability GC (Group mean centered)					0.582†	(0.321)	0.556†	(0.309)
Extraversion GC					0.083†	(0.047)	0.087†	(0.046)
Emotional stability GC					0.094	(0.100)	0.105	(0.101)
Openness GC					0.162†	(0.088)	0.148†	(0.088)
Conscientiousness GC					0.036	(0.083)	0.036	(0.083)
Agreeableness GC					-0.148**	(0.056)	-0.145**	(0.055)
Founding experience GC					0.036	(0.040)	0.031	(0.039)
Age participant GC					0.000	(0.016)	0.000	(0.016)
Gender GC					-0.647**	(0.203)	-0.628**	(0.204)
Affective trust GC					0.024	(0.124)		
Exploitative behavior GC					0.375**	(0.080)	0.375**	(0.079)
Team size C (Grand mean centered)			-0.197**	(0.062)			-0.204**	(0.069)
No. people left team C			0.115	(0.181)			0.176	(0.217)
Venture age C			-0.173**	(0.056)			-0.165**	(0.056)
Industry (services)			0.010	(0.174)			-0.024	(0.176)
Industry (E-commerce)			-0.330	(0.403)			-0.326	(0.386)
Industry (consumer products)			0.007	(0.215)			0.043	(0.220)
Industry (life sciences)			-0.423*	(0.175)			-0.442*	(0.177)
Industry (science)			0.271	(0.281)			0.223	(0.287)
<i>Main effects</i>								
Greed GC	-0.007	(0.063)	0.004	(0.066)	0.025	(0.056)	0.035	(0.057)
Industry experience GC	0.022†	(0.013)	0.022†	(0.013)	-0.003	(0.017)	-0.003	(0.016)
Cognitive trust GC	0.379**	(0.134)	0.379**	(0.133)	0.192	(0.141)	0.202†	(0.118)
Venture size C	-0.003	(0.009)	0.005	(0.009)	-0.003	(0.009)	0.005	(0.009)
<i>Interaction effects</i>								
Greed GC X Industry experience GC	-0.052*	(0.023)	-0.050*	(0.021)	-0.037†	(0.021)	-0.038†	(0.021)
Greed GC X Cognitive trust GC	-0.297**	(0.105)	-0.283*	(0.127)	-0.259**	(0.089)	-0.258*	(0.104)
Greed GC X Venture size C	-0.013	(0.014)	-0.013	(0.014)	-0.018	(0.011)	-0.018	(0.012)
Observations	233		233		233		233	
Number of groups	111		111		111		111	
Snijders/Bosker R <sup>2</sup> Level 1:	0.061		0.148		0.185		0.269	
Snijders/Bosker R <sup>2</sup> Level 2:	0.033		0.180		0.077		0.217	

**Table 31: HLM results for explorative behavior model robustness tests (1/2) (own illustration); robust standard errors in parentheses; \*\* p<0.01, \* p<0.05, † p<0.1**

### ***Model 8 (workforce instead of employees for venture size)***

Taking the number of employees is a common way of measuring venture size (e.g. Baron & Tang, 2009; Murphy, Trailer, & Hill, 1996; Zahra, Matherne, & Carleton, 2003). My operationalization of venture size includes the number of a venture's employees but excludes the number of entrepreneurial team members. Though, one could argue that entrepreneurial team members could be part of a venture's employees (e.g., contingent on the individual contract). Accordingly, one could claim that the total number of individuals working for the venture determines venture size. Therefore, an alternative operationalization for venture size could be the number of employees *plus* the number of entrepreneurial team members. This measure for venture size I call *workforce*. In order to see whether this alternative operationalization yields different results, I substitute venture size in Model 3 by workforce in Model 8. Note, that I further exclude the control variable team size in Model 8 as now the team size represents a part of the moderating variable workforce.

Looking at Model 8 in Table 32, I see that the *main effect* of greed on explorative behavior is insignificant (Hypothesis 1;  $\beta = 0.045$ ;  $p = 0.405$ ). This is in line with full Model 3.

For the *interaction effects* of greed with industry experience and with cognitive trust, I observe similar results in Model 8 as in Model 3. The interaction effect of greed with industry experience in Model 8 is marginally significant (Hypothesis 2;  $\beta = -0.039$ ;  $p = 0.064$ ) as it is in Model 3. Additionally, in Model 8, I also observe a statistically significant interaction effect of greed with cognitive trust (Hypothesis 3;  $\beta = -0.278$ ;  $p = 0.011$ ). But, most importantly, I observe diverging results when comparing the interaction effects of greed with venture size in Model 3 and with workforce in Model 8 (Hypothesis 4;  $\beta = -0.019$ ;  $p = 0.087$ ). While the interaction was insignificant in full Model 3, it is marginally significant in Model 8. Thus, the two operationalizations for venture size reveal diverging results.

### ***Model 9 (revenues instead of employees for venture size)***

Alternatively, venture size may relate to financial indicators as revenues (Cassar, 2006). Therefore, I conduct a robustness test in which I substitute venture size by a dummy variable measuring whether the venture generates *revenues* ("Is your venture generating revenue?"). We ask this question in the second long questionnaire, thus, at the end of our study.

Table 32 contains the regression results for Model 9. Again, the main effect of greed on explorative behavior is insignificant (Hypothesis 1;  $\beta = 0.048$ ;  $p = 0.416$ ).

Regarding *interaction effects*, I see similar effect sizes for all three interaction effects but diverging levels of significance for one interaction. In line with full Model 3, I observe an interaction of greed with industry experience that is marginally statistically significant (Hypothesis 2;  $\beta = -0.039$ ;  $p = 0.068$ ). The interaction between greed and cognitive trust is significant at a 1%-significance level in Model 9 (Hypothesis 3;  $\beta = -0.278$ ;  $p = 0.009$ ) whereas it is significant at the 5%-significance level in Model 3. The interaction between greed and revenues is not statistically significant in Model 9 (Hypothesis 4;  $\beta = -0.014$ ;  $p = 0.892$ ), in line with Model 3 where the equivalent interaction of greed with venture size is also insignificant.

***Model 10 (exclusion of ventures with change in team composition)***

Model 10 does not include data on ventures that experienced a change in team composition during the course of our study. Changes in team composition may impact trust within the team and the behavior of the focal entrepreneur, particularly explorative behavior. In order to evaluate the robustness to changes in team composition of my model and the resulting findings, I calculate Model 10. Whereas the calculation of full Model 3 bases on 233 individual entrepreneurs nested in 111 teams, Model 10 includes 224 individual observations nested in 105 teams.

Table 32 contains the regression output of Model 10. The *main effect* of greed on explorative behavior is insignificant (Hypothesis 1;  $\beta = 0.020$ ;  $p = 0.727$ ). This is what I observed in the full Model 3, too.

The results of Model 10 regarding *interaction effects* are similar to those of Model 3 for the interaction effects of Hypotheses 2, 3, and 4. Again, the interaction effect of greed with industry experience is marginally significant in Model 10 (Hypothesis 2;  $\beta = -0.037$ ;  $p = 0.067$ ) and the interaction term for greed and cognitive trust is statistically significant (Hypothesis 3;  $\beta = -0.242$ ;  $p = 0.024$ ). Moreover, the interaction of greed with venture size is not significant in Model 10 size (Hypothesis 4;  $\beta = -0.017$ ;  $p = 0.129$ ). In sum, these findings are consistent with the main analysis.

	Model 8		Model 9		Model 10	
Constant	5.299**	(0.086)	5.307**	(0.086)	5.310**	(0.086)
<i>Control variables</i>						
Social desirability GC (Group mean centered)	0.577†	(0.320)	0.531	(0.323)	0.507	(0.325)
Extraversion GC	0.081†	(0.046)	0.075	(0.047)	0.078	(0.047)
Emotional stability GC	0.108	(0.101)	0.098	(0.099)	0.096	(0.104)
Openness GC	0.146†	(0.087)	0.161†	(0.090)	0.186*	(0.086)
Conscientiousness GC	0.031	(0.084)	0.045	(0.083)	0.041	(0.085)
Agreeableness GC	-0.150**	(0.056)	-0.149**	(0.055)	-0.140*	(0.056)
Founding experience GC	0.030	(0.039)	0.049	(0.037)	0.033	(0.038)
Age participant GC	0.001	(0.016)	0.001	(0.016)	0.001	(0.015)
Gender GC	-0.625**	(0.205)	-0.631**	(0.204)	-0.700**	(0.213)
Affective trust GC	0.035	(0.119)	0.038	(0.124)	0.062	(0.127)
Exploitative behavior GC	0.370**	(0.080)	0.380**	(0.081)	0.387**	(0.083)
Team size C (Grand mean centered)	-0.211**	(0.070)	-0.186**	(0.069)	-0.210**	(0.077)
No. people left team C	0.187	(0.216)	0.276	(0.292)		
Venture age C	-0.163**	(0.055)	-0.165**	(0.053)	-0.142*	(0.056)
Industry (services)	-0.025	(0.176)	-0.041	(0.171)	-0.080	(0.181)
Industry (E-commerce)	-0.339	(0.386)	-0.333	(0.420)	-0.351	(0.407)
Industry (consumer products)	0.040	(0.220)	-0.004	(0.206)	-0.157	(0.193)
Industry (life sciences)	-0.445*	(0.177)	-0.427*	(0.182)	-0.480*	(0.188)
Industry (science)	0.222	(0.288)	0.194	(0.270)	0.192	(0.297)
<i>Main effects</i>						
Greed GC	0.045	(0.054)	0.048	(0.059)	0.020	(0.059)
Industry experience GC	-0.002	(0.017)	-0.005	(0.016)	-0.004	(0.016)
Cognitive trust GC	0.187	(0.140)	0.193	(0.147)	0.118	(0.151)
Venture size C					0.004	(0.009)
Workforce C	0.005	(0.009)				
Revenues C			0.135	(0.145)		
<i>Interaction effects</i>						
Greed GC X Industry experience GC	-0.039†	(0.021)	-0.039†	(0.021)	-0.037†	(0.020)
Greed GC X Cognitive trust GC	-0.278*	(0.109)	-0.278**	(0.106)	-0.242*	(0.107)
Greed GC X Venture size C					-0.017	(0.012)
Greed GC X Workforce C	-0.019†	(0.011)				
Greed GC X Revenues C			-0.014	(0.101)		
Observations	233		233		224	
Number of groups	111		111		105	
Snijders/Bosker R <sup>2</sup> Level 1:	0.270		0.270		0.267	
Snijders/Bosker R <sup>2</sup> Level 2:	0.218		0.228		0.206	

**Table 32: HLM results for explorative behavior model robustness tests (2/2) (own illustration); robust standard errors in parentheses; \*\* p<0.01, \* p<0.05, † p<0.1**

### *Simple slope analysis for all moderators simultaneously*

As a final robustness check, I conduct a simple slope analysis for full Model 3 in which I fix all three moderators simultaneously to a low value ( $-1$  SD), an average value, and a high value ( $+1$  SD). Table 33 illustrates the results of the simple slope analysis.

All moderators (industry experience; cognitive trust; venture size)	Dy/dx (slope coefficient)	Standard error	P> z	95% confidence interval	
Low (-1 SD)	0.417	0.116	0.000	0.191	0.644
Average	0.037	0.057	0.518	-0.075	0.150
High (+1 SD)	-0.343	0.147	0.020	-0.632	-0.054

**Table 33: Simple slope analysis for explorative behavior model fixing all three moderators (own illustration)**

The results indicate that the model's slope is statistically significantly different from zero for low values ( $-1$  SD) of all three moderators (beta = 0.417;  $p = 0.000$ ) and for high values ( $+1$  SD) of all three moderators (beta =  $-0.343$ ;  $p = 0.020$ ). Thus, in situations characterized by an entrepreneur's low industry experience, low cognitive trust towards team members and a comparably small venture, the entrepreneur's greed is positively related to explorative behavior. Moreover, the exact opposite is also true: For an entrepreneur with high industry experience, high cognitive trust towards team members, who is working in a big venture the relationship between the entrepreneur's greed and explorative behavior is negative.

### *Conclusion on robustness tests*

Table 34 provides an overview of the results of the robustness tests in comparison with the full Model 3. Whereas I find the suggested direction of effect in all models for all hypotheses, I also observe differences in the significances of the specific effects.

Support for	Model 3 <i>Full model</i>	Model 4 <i>No controls</i>	Model 5 <i>Team controls only</i>	Model 6 <i>Individual controls only</i>	Model 7 <i>Without affective trust</i>	Model 8 <i>Workforce</i>	Model 9 <i>Revenues</i>	Model 10 <i>No changes in team</i>
Hypothesis 1	No	No	No	No	No	No	No	No

<b>Support for</b>	<b>Model 3</b> <i>Full model</i>	<b>Model 4</b> <i>No controls</i>	<b>Model 5</b> <i>Team controls only</i>	<b>Model 6</b> <i>Individual controls only</i>	<b>Model 7</b> <i>Without affective trust</i>	<b>Model 8</b> <i>Workforce</i>	<b>Model 9</b> <i>Revenues</i>	<b>Model 10</b> <i>No changes in team</i>
Hypothesis 2	Marginal	Yes	Yes	Marginal	Marginal	Marginal	Marginal	Marginal
Hypothesis 3	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Hypothesis 4	No	No	No	No	No	Marginal	No	No

**Table 34: Overview of explorative behavior robustness test results (own illustration)**

Hypothesis 1 on the main effect of greed on explorative behavior is not supported in all of the models. Thus, in total, the main analysis' findings on Hypothesis 1 are highly robust. There is no statistically significant main effect of greed on explorative behavior.

Hypothesis 2 postulates a moderating effect of industry experience on the relationship between entrepreneurs' greed and explorative behavior. This Hypothesis finds either marginal support as in the full Model 3 or full support, whenever no individual level control variables are included. In no case, the interaction effect of greed and industry experience was insignificant ( $p > 0.1$ ). Overall, the findings on Hypothesis 2 are somewhat sensitive to model specification.

Hypothesis 3 suggests a moderating effect of cognitive trust on the relationship between greed and explorative behavior. As Hypothesis 3 finds support in all models, the results on Hypothesis 3 are highly robust.

Hypothesis 4 postulates a moderating effect of venture size on the relationship between entrepreneurs' greed and explorative behavior. The results on this Hypothesis are mixed. In line with full Model 3, all other models but Model 8 (workforce as operationalizations for venture size) reveal insignificant interaction effects between greed and venture size. Overall, the results on Hypothesis 4 are sensitive to model specification.

### **4.3 Unethical pro-organizational behavior: Analysis and results**

This section contains the analysis on the HLM that predicts the impact of entrepreneurs' greed on unethical pro-organizational behavior. In 4.3.1, I present the results of the hypotheses testing. Thereafter, in 4.3.2, I provide results on robustness tests.<sup>12</sup>

#### **4.3.1 Hypotheses testing for unethical pro-organizational behavior**

In the following, I present the three models that I have calculated in order to test the hypotheses on the relationship between entrepreneurs' greed and their unethical pro-organizational behavior. Here, I also provide information on the models' predictive power. Thereafter, I illustrate the results of the hypothesis testing.

Table 35 contains the regression output for three models. Model 11 is the base model that contains control variables but neither the independent variable greed nor the moderating variables cognitive and affective trust for predicting unethical pro-organizational behavior. Model 12 differs from Model 11 as it additionally includes the independent variable greed and therefore provides information for Hypothesis 5. And the full Model 13 includes control variables, independent variable as well as both moderating variables cognitive and affective trust. The full Model 13 provides information that is relevant for the analysis of all three hypotheses.

Consistent with the model predicting explorative behavior (see 4.2.1), I use the Pseudo-R<sup>2</sup> by Snijders and Bosker (1994) in order to assess the models' predictive power. This approach accounts for issues that arise when applying the common R<sup>2</sup> measures in multilevel models, and yields interpretable results also for models that use predictive variables that are centered by the group mean (Hox et al., 2017). Table 35 shows that there is barely no additional predictive power between Model 11 (Snijders/Bosker R<sup>2</sup> Level 1 = 0.079; Snijders/Bosker R<sup>2</sup> Level 2 = 0.079) and Model 12 (Snijders/Bosker R<sup>2</sup> Level 1 = 0.082; Snijders/Bosker R<sup>2</sup> Level 2 = 0.080). Thus, the variable greed per se does not add much predictive power to the model. Though, there is a considerable increase in the Pseudo-R<sup>2</sup> on both levels between Model 12 (Snijders/Bosker R<sup>2</sup> Level 1 = 0.082; Snijders/Bosker R<sup>2</sup> Level 2 = 0.080) and the full Model 13 (Snijders/Bosker

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<sup>12</sup> As mentioned in the introduction (see 1.3), parts of the content on the unethical pro-organizational behavior analysis (4.3) have similar content to a paper that has been submitted to the Journal of Management on 24th September 2020 under the title "Greed and entrepreneurs' unethical pro-organizational behavior in founding teams". In this paper, I take the role as first author and am co-authoring with Professor Mirjam Knockaert (Ghent University), Professor Holger Patzelt (Technical University of Munich), and Professor Nicola Breugst (Technical University of Munich).

$R^2$  Level 1 = 0.160; Snijders/Bosker  $R^2$  Level 2 = 0.154). This indicates that 16% individual level variance and 15.4% team level variance are modeled.

### *Hypothesis 5*

The fifth hypothesis proposes that entrepreneurs' greed is positively related to unethical pro-organizational behavior. Model 12 and the full Model 13 provide information on the validity of this hypothesis. As Table 35 shows, the main effect of greed is positive but not statistically significant for Model 12 (beta = 0.096;  $p = 0.389$ ) and for Model 13 (beta = 0.038;  $p = 0.720$ ). Therefore, I do not find support for the proposed main effect of greed on unethical pro-organizational behavior of Hypothesis 5.

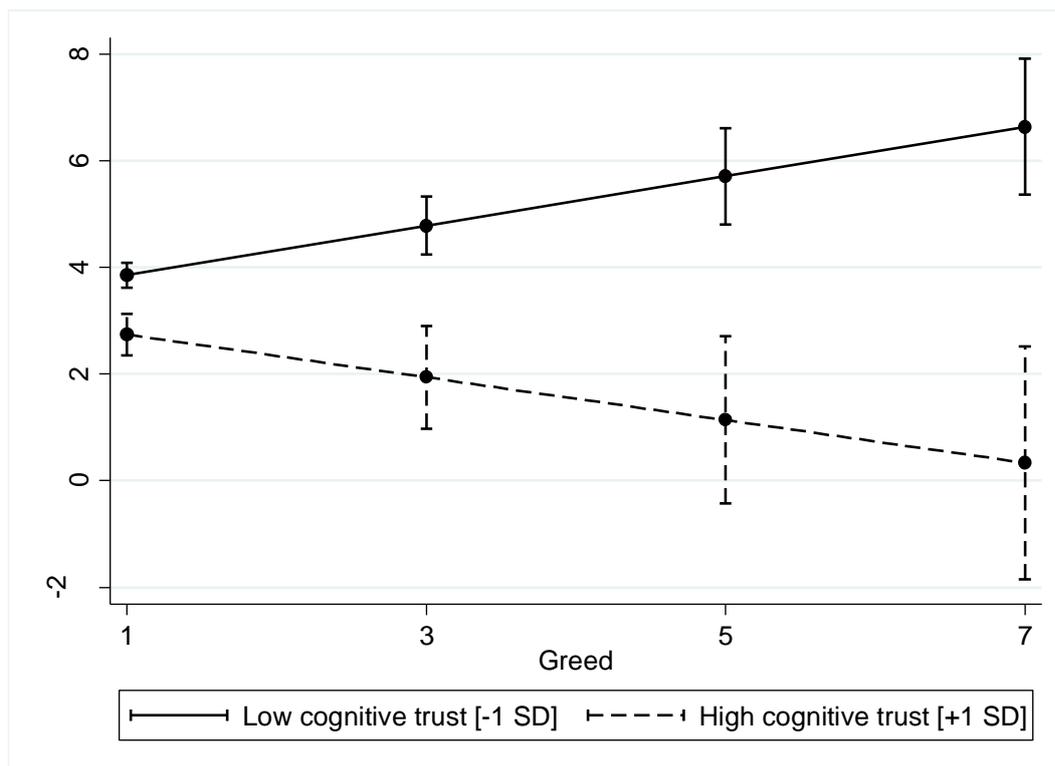
	Model 11		Model 12		Model 13	
Constant	3.378**	(0.094)	3.379**	(0.094)	3.398**	(0.095)
<i>Control variables</i>						
Social desirability GC (Group mean centered)	-0.450	(0.598)	-0.504	(0.592)	-0.406	(0.580)
Extraversion GC	0.162†	(0.087)	0.170*	(0.085)	0.159*	(0.074)
Emotional stability GC	-0.016	(0.079)	0.013	(0.082)	-0.006	(0.075)
Openness GC	0.016	(0.149)	0.014	(0.149)	0.048	(0.142)
Conscientiousness GC	-0.082	(0.095)	-0.070	(0.093)	-0.087	(0.095)
Agreeableness GC	-0.107	(0.086)	-0.103	(0.084)	-0.100	(0.087)
Founding experience GC	-0.033	(0.058)	-0.038	(0.061)	-0.033	(0.057)
Industry experience GC	-0.041†	(0.024)	-0.042†	(0.024)	-0.034	(0.022)
Age participant GC	0.018	(0.016)	0.020	(0.017)	0.028†	(0.015)
Gender GC	-0.012	(0.358)	0.022	(0.358)	0.009	(0.344)
Team size C (Grand mean centered)	-0.002	(0.064)	-0.003	(0.065)	-0.023	(0.069)
No. people left team C	0.967*	(0.476)	0.983*	(0.484)	1.109*	(0.446)
Venture age C	-0.058	(0.070)	-0.060	(0.071)	-0.028	(0.066)
Venture size C	0.014	(0.011)	0.014	(0.011)	0.009	(0.010)
Industry (services)	-0.139	(0.219)	-0.140	(0.220)	-0.163	(0.213)
Industry (E-commerce)	0.222	(0.697)	0.215	(0.692)	-0.254	(0.522)
Industry (consumer products)	-0.252	(0.294)	-0.242	(0.297)	-0.292	(0.290)
Industry (life sciences)	-0.334*	(0.146)	-0.337*	(0.146)	-0.311*	(0.147)
Industry (science)	0.193	(0.407)	0.194	(0.407)	0.183	(0.377)
<i>Main effects</i>						
Greed GC			0.096	(0.112)	0.038	(0.107)
Cognitive trust GC					-0.249	(0.200)
Affective trust GC					0.280†	(0.170)
<i>Interaction effects</i>						
Greed GC X Cognitive trust GC					-0.866**	(0.223)
Greed GC X Affective trust GC					0.529*	(0.233)
Observations	233		233		233	
Number of groups	111		111		111	
Snijders/Bosker R <sup>2</sup> Level 1:	0.079		0.082		0.160	
Snijders/Bosker R <sup>2</sup> Level 2:	0.079		0.080		0.154	

**Table 35: HLM results for unethical pro-organizational behavior model (own illustration); robust standard errors in parentheses; \*\* p<0.01, \* p<0.05, † p<0.1**

### Hypothesis 6

Hypothesis 6 suggests that the relationship between entrepreneurs' greed and unethical pro-organizational is more positive when cognitive trust is low than when it is high. Full Model 13's results show that the interaction effect of greed and cognitive trust is statistically significant at a 1%-significance level and that the interaction effect is negative (beta =  $-0.866$ ;  $p = 0.000$ ).

Figure 16 graphically illustrates this interaction effect for all possible values of greed. On the x-axis is greed, on the y-axis is unethical pro-organizational behavior and the two lines represent low cognitive trust towards team members ( $-1$  SD; solid line) and high cognitive trust towards team members ( $+1$  SD; dashed line) including the two-sided 90% confidence intervals. As the graph shows, the relationship between greed and unethical pro-organizational behavior is more positive in case the entrepreneur has *low* cognitive trust towards team members than when he or she has *high* cognitive trust towards team members.



**Figure 16: Relationship between greed and unethical pro-organizational behavior contingent on cognitive trust with 90% confidence intervals (own illustration)**

The simple slope analysis (Aiken et al., 1991) in Table 36 underpins the graphically illustrated relationship. Indeed, for *low* cognitive trust ( $-1$  SD) the slope is positive and differs statistically

significantly from zero (beta = 0.464; p = 0.000). For *high* cognitive trust, the slope is negative and statistically significant (beta = -0.401; p = 0.033). Overall, I find support for Hypothesis 6.

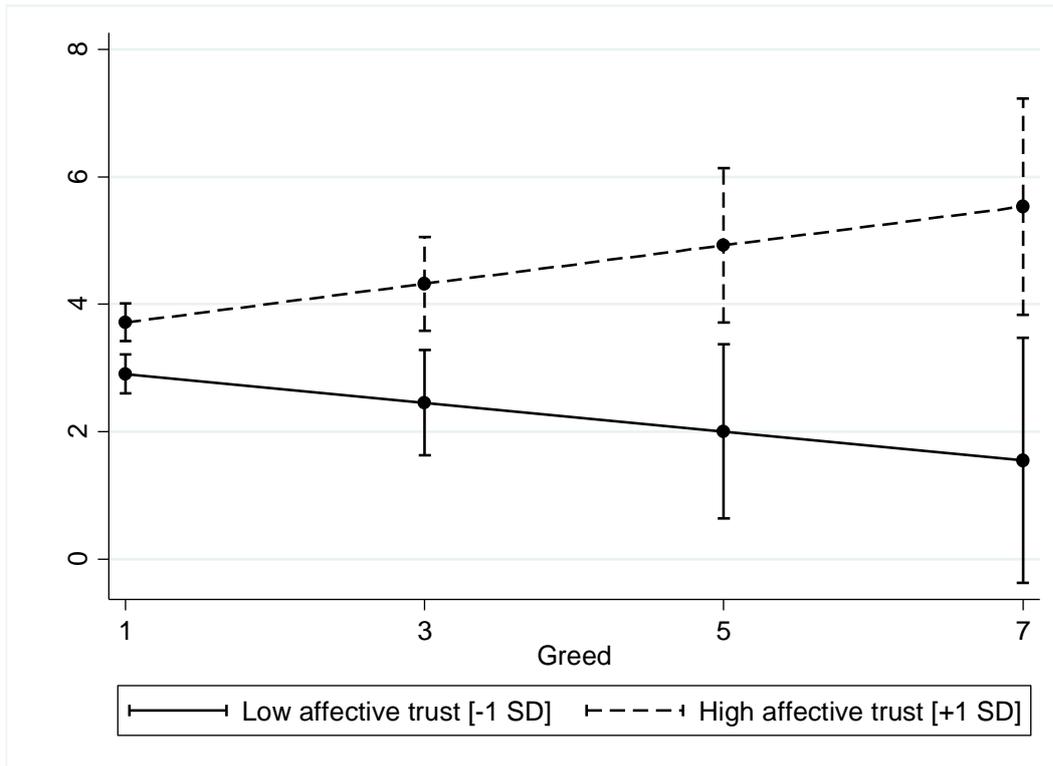
Cognitive trust	Dy/dx (slope coefficient)	Standard error	P> z	95% confidence interval	
Low (-1 SD)	0.464	0.113	0.000	0.243	0.686
High (+1 SD)	-0.401	0.188	0.033	-0.769	-0.033

**Table 36: Simple slope analysis in unethical pro-organizational behavior model for cognitive trust (own illustration)**

### *Hypothesis 7*

Hypothesis 7 states that the relationship between greed and unethical pro-organizational behavior is more positive when affective trust is high than when it is low. Indeed, the interaction term between greed and affective trust in Model 13 is positive and statistically significant (beta = 0.529; p = 0.023).

I plot the relation between greed (x-axis) and unethical pro-organizational behavior (y-axis) for low affective trust towards team members (-1 SD; solid line) and high affective trust towards team members (+1 SD; dashed line) including two-sided 90% confidence intervals in Figure 17. The graph shows that for entrepreneurs having *low* affective trust towards their team members, the relationship between greed and unethical pro-organizational behavior is negative. And in the case of *high* affective trust towards the teammates, the effect goes into the opposite direction as the relationship in this case is positive.



**Figure 17: Relationship between greed and unethical pro-organizational behavior contingent on affective trust with 90% confidence intervals (own illustration)**

The simple slope analysis (Aiken et al., 1991) presented in Table 37 states that for *low* affective trust the coefficient is negative but not statistically significant (beta = -0.226; p = 0.182). For comparably *high* affective trust, in contrast, the coefficient is positive and the effect is statistically significant (beta = 0.303; p = 0.040). Overall, I find support for Hypothesis 7.

Affective trust	Dy/dx (slope coefficient)	Standard error	P> z	95% confidence interval	
Low (-1 SD)	-0.226	0.169	0.182	-0.557	0.105
High (+1 SD)	0.303	0.147	0.040	0.014	0.592

**Table 37: Simple slope analysis in unethical pro-organizational behavior model for affective trust (own illustration)**

### 4.3.2 Robustness tests for unethical pro-organizational behavior model

For assessing the robustness of the findings of the main analysis, I calculate four additional models. Table 38 contains the results of these models. In the following, I present the results of each model. Additionally, I conduct a set of simple slope analyses on the full Model 13 restricting values of cognitive trust and affective trust simultaneously.

Although I follow the recommendation of many scholars to provide justification for the inclusion of control variables (Atinc et al., 2012; Becker, 2005; Spector & Brannick, 2011), I calculate models without control variables (Model 14), with team level only control variables (Model 15), and individual level only control variables (Model 16). Besides, I calculate a model (Model 17) that includes the very same control variables as full Model 13 but does not include observations of teams that experienced a change in team composition during the course of our data collection.

#### *Model 14 (no control variables)*

Accounting for the ongoing debate on the inclusion of control variables (Atinc et al., 2012; Becker, 2005; Spector & Brannick, 2011), I calculate Model 14 without any control variables. Comparing Model 14 to full Model 13 yields information on whether the findings of my main analysis in 4.3.1 are robust to the set of control variables. I illustrate the results of Model 14 in Table 38.

Hypothesis 5 postulates a *main effect* of greed on unethical pro-organizational behavior. In line with full Model 13, the main effect is not statistically significant in Model 14 without control variables (Hypothesis 5;  $\beta = 0.025$ ;  $p = 0.796$ ).

Regarding the *interaction effects*, I observe one change in the significance levels. The interaction effect of greed with cognitive trust is equally significant in Model 14 (Hypothesis 6;  $\beta = -0.803$ ;  $p = 0.001$ ) as in full Model 13. Though, the results on the interaction effect of greed and affective trust are different in Model 14 (Hypothesis 7;  $\beta = 0.454$ ;  $p = 0.079$ ) than in full Model 13. Whereas I observe an only marginally significant interaction term in Model 14, this term is significant at a 5%-significance level in Model 13.

### ***Model 15 (team level control variables only)***

Model 15 includes only those control variables of full Model 13 that are on the team level. Table 38 contains the regression output of Model 15.

The *main effect* of greed on unethical pro-organizational behavior is not statistically significant in Model 15 (Hypothesis 5;  $\beta = 0.018$ ;  $p = 0.856$ ). This is in line with the results of full Model 13.

Besides, in line with full Model 13, robustness test Model 15 also reveals similar results for the *interaction effect* of greed and cognitive trust. The interaction of greed with cognitive trust is again highly significant (Hypothesis 6;  $\beta = -0.889$ ;  $p = 0.000$ ). However, in contrast to full Model 13, the interaction effect of greed with affective trust is just not significant at the 5%-significance level in Model 15 (Hypothesis 7;  $\beta = 0.507$ ;  $p = 0.051$ ).

### ***Model 16 (individual level control variables only)***

Model 16 includes individual level control variables only. It therefore can be considered as the analogue to Model 15.

Model 16's regression output is illustrated in Table 38. Again, the *main effect* of greed on explorative behavior is not significant in this model (Hypothesis 5;  $\beta = 0.035$ ;  $p = 0.743$ ).

Model 16 also reveals similar results as the main analysis (see 4.3.1) regarding *interaction effects*. Both models show similar coefficients that are significant at the 1%-significance level in the case for the interaction effect of greed with cognitive trust (Hypothesis 6;  $\beta = -0.856$ ;  $p = 0.000$ ) and at the 5%-significance level for affective trust (Hypothesis 7;  $\beta = 0.506$ ;  $p = 0.028$ ).

### ***Model 17 (exclusion of ventures with change in team composition)***

Model 17 includes the same variables as full Model 13. But in this calculation, I do not consider teams that experienced a change in team composition during the course of our data collection. I only observed teams that decreased rather than increased in team member number during our study so that the calculation of Model 17 bases on 224 individual entrepreneurs nested in 105 teams compared to 233 entrepreneurs nested in 111 teams in full Model 13. Changes in team composition may affect trust in teams and therefore may bias the results. By comparing Model

17 to full Model 13, I gain insights on whether the full Model 13 is robust to changes in team composition.

Table 38 contains the regression output for Model 17. As all the other models, Model 17 reveals an insignificant *main effect* for greed (Hypothesis 5;  $\beta = 0.043$ ;  $p = 0.700$ ).

The results on the *interaction effects* are also in line with the other models and in particular with full Model 13. Model 17 shows significant interaction effects for greed with cognitive trust (Hypothesis 6;  $\beta = -0.879$ ;  $p = 0.000$ ) and with affective trust (Hypothesis 7;  $\beta = 0.523$ ;  $p = 0.028$ ).

	Model 14		Model 15		Model 16		Model 17	
Constant	3.256**	(0.076)	3.392**	(0.092)	3.235**	(0.076)	3.323**	(0.093)
<i>Control variables</i>								
Social desirability GC (Group mean centered)					-0.416	(0.583)	-0.321	(0.592)
Extraversion GC					0.154*	(0.073)	0.161*	(0.077)
Emotional stability GC					-0.012	(0.076)	-0.009	(0.079)
Openness GC					0.059	(0.139)	0.021	(0.150)
Conscientiousness GC					-0.074	(0.094)	-0.082	(0.096)
Agreeableness GC					-0.101	(0.086)	-0.107	(0.088)
Founding experience GC					-0.031	(0.057)	-0.033	(0.057)
Industry experience GC					-0.035	(0.022)	-0.033	(0.022)
Age participant GC					0.029†	(0.015)	0.027†	(0.015)
Gender GC					0.011	(0.347)	0.086	(0.368)
Team size C (Grand mean centered)			-0.036	(0.065)			-0.031	(0.071)
No. people left team C			0.990*	(0.420)				
Venture age C			-0.028	(0.065)			-0.020	(0.067)
Venture size C			0.008	(0.010)			0.010	(0.010)
Industry (services)			-0.170	(0.210)			-0.171	(0.214)
Industry (E-commerce)			-0.296	(0.517)			-0.265	(0.524)
Industry (consumer products)			-0.337	(0.287)			-0.445	(0.272)
Industry (life sciences)			-0.331*	(0.146)			-0.310*	(0.153)
Industry (science)			0.174	(0.379)			0.172	(0.384)
<i>Main effects</i>								
Greed GC	0.025	(0.098)	0.018	(0.100)	0.035	(0.106)	0.043	(0.111)
Cognitive trust GC	-0.195	(0.192)	-0.228	(0.194)	-0.235	(0.199)	-0.184	(0.218)
Affective trust GC	0.277†	(0.154)	0.305*	(0.155)	0.258	(0.173)	0.270	(0.184)
<i>Interaction effects</i>								
Greed GC X Cognitive trust GC	-0.803**	(0.235)	-0.889**	(0.242)	-0.856**	(0.218)	-0.879**	(0.234)
Greed GC X Affective trust GC	0.454†	(0.258)	0.507†	(0.259)	0.506*	(0.230)	0.523*	(0.237)
Observations	233		233		233		224	
Number of groups	111		111		111		105	
Snijders/Bosker R <sup>2</sup> Level 1:	0.079		0.117		0.119		0.156	
Snijders/Bosker R <sup>2</sup> Level 2:	0.064		0.117		0.073		0.156	

**Table 38: HLM results for unethical pro-organizational behavior model robustness tests (own illustration); robust standard errors in parentheses; \*\* p<0.01, \* p<0.05, † p<0.1**

***Simple slope analysis for both moderators simultaneously***

Hypotheses 6 and 7 propose opposing effects for cognitive and affective trust. I propose that the relationship between greed and unethical pro-organizational behavior is more positive in teams with low cognitive trust (Hypothesis 6) and high affective trust (Hypothesis 7). Table 39 contains the results of a simple slope analysis where I fix the values of both moderators simultaneously. Note that the results of a simple slope analysis with only one moderator fixed (the other moderator's value is average) are illustrated in Table 36 for cognitive trust and in Table 37 for affective trust.

All moderators (cognitive trust; affective trust)	Dy/dx (slope coefficient)	Standard error	P> z	95% confidence interval	
Both low (-1 SD)	0.207	0.145	0.153	-0.077	0.490
Both high (+1 SD)	-0.130	0.190	0.494	-0.502	0.242
Cognitive trust low (-1 SD), affective trust high (+1 SD)	0.736	0.179	0.000	0.384	1.087
Cognitive trust high (+1 SD), affective trust low (-1 SD)	-0.659	0.247	0.008	-1.143	-0.175

**Table 39: Simple slope analysis for unethical pro-organizational behavior model fixing both moderators (own illustration)**

The results of the simple slope analysis are as expected: For comparably low values of both moderators (-1 SD; beta = 0.207; p = 0.153) and comparably high values of both moderators (+1 SD; beta = -0.130; p = 0.494), the slopes are not significantly different from zero. For contrary values, i.e., when cognitive trust is comparably low and affective trust is comparably high (beta = 0.736; p = 0.000) or when cognitive trust is comparably high and affective trust is comparably low (beta = -0.659; p = 0.008), the slopes do highly significantly differ from zero and the coefficients are as predicted.

### *Conclusion on robustness tests*

In addition to full Model 13, Table 40 contains an overview of the results of the robustness test models per each hypothesis. Whereas I observe the proposed effect direction in all models, the results diverge regarding the significance levels.

<b>Support for</b>	<b>Model 13</b> <i>Full model</i>	<b>Model 14</b> <i>No controls</i>	<b>Model 15</b> <i>Team controls only</i>	<b>Model 16</b> <i>Individual controls only</i>	<b>Model 17</b> <i>No changes in team</i>
Hypothesis 5	No	No	No	No	No
Hypothesis 6	Yes	Yes	Yes	Yes	Yes
Hypothesis 7	Yes	Marginal	Marginal	Yes	Yes

**Table 40: Overview of unethical pro-organizational behavior robustness test results (own illustration)**

Hypothesis 5 suggests a positive main effect of greed on unethical pro-organizational behavior. As neither full Model 13 nor one of the robustness test models find a significant positive main effect of greed on unethical pro-organizational behavior, the findings on Hypothesis 5 are highly robust.

Hypothesis 6 postulates a moderating effect of cognitive trust on the relationship between entrepreneurs' greed and unethical pro-organizational behavior. All models find support for Hypothesis 6 and therefore the findings are highly robust.

Hypothesis 7 proposes a moderating effect of affective trust on the relationship between entrepreneurs' greed and unethical pro-organizational behavior. Only on Hypothesis 7, I observe diverging results between the models. Model 14 without control variables and Model 15 with team level control variables only provide marginal support for Hypothesis 7. In contrast, full Model 13 as well as the other robustness test models 16 and 17 find support at the 5%-significance level for Hypothesis 7. Based on these results, the findings on Hypothesis 7 are somewhat sensitive to model specification.

## 5. Discussion

Despite the fact that greed is an important and long known personality trait, it had been largely ignored by scholars from various fields for a long time. After the financial crisis of the late 2000's, however, scholars intensified their research on greed. Particularly psychology scholars applied great effort to define and characterize the construct (e.g., Krekels & Pandelaere, 2015; Seuntjens, Zeelenberg, Breugelmans, et al., 2015) and organizational scholars started to discuss greed in managerial contexts (e.g., Haynes, Josefy, et al., 2015a; Wang & Murnighan, 2011). Though, whereas research on greed has gained importance in various fields, we only know little about greed in entrepreneurial contexts.

It is surprising that we know so little about greed in entrepreneurial contexts mainly for three reasons. First, because we know that entrepreneurs tend to be greedier than non-entrepreneurs (Djankov et al., 2006). Accordingly, as the personality characteristic is widespread among entrepreneurs, it seems particularly important to analyze greed in an entrepreneurial context. Second, it is surprising that we know so little about entrepreneurial greed because we know that personality characteristics of entrepreneurs have important effects on the venture's culture (Schein, 1983). Therefore, the impact of *entrepreneurial* greed may be comparably strong in entrepreneurial ventures. And third, it is surprising because the general public relates greed to major entrepreneurial scandals like at Theranos (Caplan, 2016; Lyons, 2019), while scientific work lacks behind in analyzing the construct and its impact in entrepreneurial contexts. Due to these reasons, it seems particularly important to analyze greed in entrepreneurial contexts.

Based on a sample of 233 entrepreneurs from 111 entrepreneurial teams, I find that entrepreneurs high in greed do not always engage in greedy behavior but only in certain situations (no support for main effects, i.e., Hypothesis 1 and Hypothesis 5). When the entrepreneur's situation is weak, particularly when he or she has low industry experience (Hypothesis 2), low cognitive trust in teammates (Hypothesis 3), and the venture is comparably small (Hypothesis 4), entrepreneurs high in greed are more likely to engage in greedy behavior. Although, the findings on industry experience and venture size should be handled with caution as the results are somewhat sensitive to model specification and only marginally significant. Moreover, when the entrepreneur's self-control is low, particularly when he or she has low cognitive trust (Hypothesis 6) or high affective trust (Hypothesis 7) in teammates, entrepreneur's greed is likely to translate into greedy behavior. Importantly, cognitive and affective trust affect the translation of greed into behavior in very different ways, such that

greedy behavior is particularly likely in work environments where cognitive trust is low or where affective trust is high. Moreover, I find that the behavioral outcomes of greed are not necessarily immoral or negative. Specifically, greed results in explorative behavior which is not considered as immoral and has rather positive impact on performance, particularly in young ventures (Choi et al., 2008; Parida et al., 2016). However, greed also leads to unethical pro-organizational behavior. Hence, it seems that greedy individuals accept to harm others in order to serve their own interests. Remarkably, as entrepreneurs' interests are well aligned with those of the venture, particularly when compared to managers in established organizations, this dissertation shows that greedy entrepreneurs try to satisfy their own desires by supporting the venture at all means, rather than exploiting it.

In this chapter, I first discuss the theoretical contributions of my dissertation (section 5.1). Thereafter, I present some important practical implications (section 5.2). In line with other research, this dissertation has some limitations that I will point out subsequently (section 5.3). And finally, I draw conclusions of this dissertation and provide avenues for future research (section 5.4).<sup>13</sup>

## **5.1 Theoretical contributions**

In the following, I highlight the theoretical contributions of this dissertation. Since this study focuses on the entrepreneurial setting, I start by pointing out the contributions to the entrepreneurship literature (5.1.1). Thereafter, I present the contributions to the evolving stream of research on greed in organizations (5.1.2). Finally, I demonstrate how this dissertation contributes to psychological theory (5.1.3).

### **5.1.1 Contributions to entrepreneurship literature**

Traditionally, most studies on entrepreneurial personality focus on personality characteristics from the 'bright side', such as proactivity (Yan, 2010), innovativeness (Utsch & Rauch, 2000),

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<sup>13</sup> As mentioned in the introduction (see 1.3), parts of the content of this discussion chapter (5) have similar content as a paper that has been submitted to the Journal of Management on 24th September 2020 under the title "Greed and entrepreneurs' unethical pro-organizational behavior in founding teams". In this paper, I take the role as first author and am co-authoring with Professor Mirjam Knockaert (Ghent University), Professor Holger Patzelt (Technical University of Munich), and Professor Nicola Breugst (Technical University of Munich). Moreover, as mentioned in the introduction (see 1.3), parts of the content of this discussion chapter (5) have similar content as an unpublished paper that I wrote as first author during my PhD together with Professor Mirjam Knockaert (Ghent University), and Professor Holger Patzelt (Technical University of Munich).

and passion (Baum & Locke, 2004). Traits from the ‘dark side’, as the dark triad consisting of Machiavellianism, narcissism and psychopathy (Paulhus & Williams, 2002) remain rather neglected in entrepreneurship research (Shepherd, 2019). However, as this dissertation shows, traits that are considered to be from the dark side of personality like greed (Haynes, Hitt, et al., 2015; Krekels & Pandelaere, 2015), work differently in entrepreneurial ventures than in established ventures, affect entrepreneurial behavior and, thus, represent intriguing ground for future studies.

This dissertation further adds to the discussion on *trust* in entrepreneurial teams. Most extant studies point to the positive consequences of trust in entrepreneurial teams, for instance because trust promotes knowledge sharing (De Clercq et al., 2013) and mitigates the negative consequences of team conflicts (Blatt, 2009; Ensley et al., 2002). Nevertheless, there is also entrepreneurial research unraveling potentially negative effects of trust (Goel & Karri, 2006; Kautonen et al., 2010; Patzelt & Shepherd, 2008; Welter, 2012). For instance, Kautonen et al. (2010) analyze the threat of losing focus on important aspects due to blind trust in advisors and Goel and Karri (2006) discuss the implications of over-trust towards different stakeholders. However, most of these studies do not consider trust in an entrepreneurial *team* context. This dissertation, in contrast, shows that trust within entrepreneurial teams may play an important role as preventor or as facilitator for dark traits to materialize into behavior. Thus, I uncover another and so far, undiscovered potentially dark role of trust in entrepreneurial teams.

Besides, whereas most entrepreneurial research on *trust* considers trust as a unidimensional construct (e.g., Chen & Wang, 2008; Shepherd & Zacharakis, 2001; Welter & Smallbone, 2006), this dissertation underlines the importance of distinguishing between cognitive and affective trust (Holste & Fields, 2010; McAllister, 1995) in research on entrepreneurial teams. Indeed, cognitive trust and affective trust affect the relationship between greed and unethical pro-organizational behavior in different ways. Whereas cognitive trust, consistent with the cool decision-making system of self-control theory, prevents greedy entrepreneurs from engaging in unethical pro-organizational behavior, affective trust, consistent with the hot decision-making system, facilitates greedy entrepreneurs to engage in unethical pro-organizational behavior. Accordingly, future studies on entrepreneurial teams should rather consider the two-dimensional conceptualization of trust than a unidimensional conceptualization.

My findings further broaden the knowledge about *explorative behavior* in entrepreneurial ventures. While there already exists a number of studies on explorative behavior in entrepreneurial ventures, mostly focusing on ambidexterity (e.g., Cenamor, Parida, & Wincent,

2019; Mom, Van Den Bosch, & Volberda, 2009), “the ability to explore and exploit simultaneously” (Volery, Mueller, & von Siemens, 2015, p. 109), or on when entrepreneurs should explore opportunities and when they should exploit these opportunities (e.g., Choi et al., 2008; Ireland & Webb, 2009; Parida et al., 2016), this dissertation uncovers some new insights into explorative behavior in entrepreneurial ventures. First, it shows that greed positively relates to explorative behavior. This is important to know because it means that at a later stage, when entrepreneurs should rather exploit existing opportunities than constantly explore new opportunities (Choi et al., 2008; Ireland & Webb, 2009; Parida et al., 2016), entrepreneurial team members should account for greed at the latest. Second, my research shows that entrepreneurs’ engagement in explorative behavior depends on their perceived situational strength. Particularly, entrepreneurs’ cognitive trust towards team members, and, although sensitive to model specification and only marginally significant, their industry experience and venture size influence their tendency to engage in explorative behavior.

Moreover, this dissertation contributes to the evolving stream of literature on *unethical pro-organizational behavior*. So far, scholars have focused on established organizations when investigating unethical pro-organizational behavior (Castille et al., 2018; Umphress et al., 2010). This dissertation shows that the context of entrepreneurial ventures may provide interesting insights on the comparably new construct of unethical pro-organizational behavior. In comparison to managers of established organizations, entrepreneurs’ interests are usually closely interwoven to those of their venture. Therefore, the antecedents and the results of unethical pro-organizational behavior should be somewhat context specific and, accordingly, transfers of insights from one context to the other should be taken with caution. Moreover, this research shows that researchers and practitioners alike should take into account the role of the entrepreneurial team for preventing or facilitating unethical pro-organizational behavior. Additionally, while extant research on unethical pro-organizational behavior has identified workplace specific factors like organizational identification (Umphress et al., 2010) or job insecurity (Ghosh, 2017) as well as the personality characteristic Machiavellianism (Castille et al., 2018) as origins of unethical pro-organizational behavior, this dissertation discovers greed as a new and important characteristic for explaining unethical pro-organizational behavior.

### **5.1.2 Contributions to the literature on greed in organizations**

Extant organizational research connects greed with a *short-term orientation* (Haynes, Josefy, et al., 2015b; Seuntjens et al., 2016). For instance, greedy CEOs tend to focus on short-term rather

than long-term decisions and performance (Haynes, Josefy, et al., 2015b). Indeed, as CEOs' compensation tends to be closely linked to organizational performance and as CEOs' tenure tends to be comparably short (Haynes, Josefy, et al., 2015b), focusing on short-term decisions and performance seems to be a suitable way to serve greedy CEOs' self-interest. Yet, my results show that greedy individuals' behavior is not necessarily short-term oriented. On the one side, my results reveal that greedy entrepreneurs engage in unethical pro-organizational behavior accepting potentially negative long-term consequences (Fehr et al., 2019). This reflects well on the view that greed is short-term oriented. On the other side, in order to yield great improvements or successes, greedy entrepreneurs tend to engage in explorative behavior. Explorative behavior, in turn, is long-term oriented (Le Breton-Miller et al., 2011; Mom et al., 2007). Thus, it seems that greedy individuals are keen on maximizing their individual outcome. If necessary, they may accept longer waiting times.

In line with extant research (Bruhn & Lowrey, 2012; Haynes et al., 2017), my research shows that the *social work environment* of greedy individuals has major impact on whether their greed translates into behavior. Previous research shows that greedy executives are more likely to engage in greedy behavior when they work under comparably high managerial discretion and when the power of the board of directors is rather low (Haynes et al., 2017). The study by Bruhn and Lowrey (2012) shows that the organizational culture influences whether greedy individuals engage in greedy behavior. Particularly, when the organizational culture is characterized by low social cohesion and is rather individualistic, individuals' greed is more likely to translate into greed-specific behavior (Bruhn & Lowrey, 2012). Yet, whereas organizational research highlights the importance of the board of directors (Haynes et al., 2017) or the organizational culture in general (Bruhn & Lowrey, 2012) as a greed-facilitating or greed-repressing social environment, I point to the essential role of the members of the management team. In entrepreneurial contexts, the impact of these persons (i.e., the entrepreneurial team) should be crucial because the interaction in entrepreneurial teams is particularly intensive, regarding not only frequency (Lechler, 2001) but also emotionality (De Jong, Song, & Song, 2013). My dissertation shows that the work environmental factor, namely cognitive trust, has an important impact on whether greed translates into explorative behavior. Moreover, it shows that two different work environmental factors, namely cognitive trust and affective trust, affect the translation of greed into unethical pro-organizational behavior in opposite ways. Future studies on dark personality traits in organizational contexts, and in particularly in entrepreneurial contexts, should consider how the team environment influences the translations of these traits into behavior that may potentially harm the organization.

By focusing on an *entrepreneurial setting*, this dissertation's findings further broaden the knowledge on the role greed plays in managerial contexts. Prior research has focused primarily on the context of established organizations where managers predominantly prioritize their own goals and deprioritize or even sacrifice organizational goals (Haynes et al., 2017; Haynes, Josefy, et al., 2015b). For instance, managers try to extract financial and non-financial means from the organization for their own benefit which raises the organization's agency costs (costs that are due to conflicts of interest between managers and other stakeholders), and lowers stakeholders' returns (Haynes et al., 2017). More specifically, as managerial compensation is frequently closely linked to organizational performance and as managers' tenure is usually rather short, greedy managers tend to focus on short-term decisions and short-term performance (Haynes, Josefy, et al., 2015b) in order to serve their self-interest. In *entrepreneurial ventures*, in contrast, organizational interests and the entrepreneurs' individual interests tend to be closely entwined (Bird & Jelinek, 1989; Ruvio et al., 2010; Townsend et al., 2009). Thus, as entrepreneurs' interests tend to match those of their ventures, they will more likely act in the interest of the venture rather than against the interests of their venture. Indeed, this dissertation shows that entrepreneurs tend to show explorative and pro-organizational behavior rather than counter-organizational behavior. These findings show that it is important to be cautious when transferring findings between different organizational contexts. Specifically, when transferring findings from one context to another, scholars must consider potentially contrasting alignments of individuals' and organizations' interests.

### **5.1.3 Contributions to psychological theory**

With this dissertation, I contribute to the ongoing discussion on whether *greed* is a state, a trait, or a combination of both. On the one side, I observe a CES (coefficient of equivalence and stability) of 0.73. Consistent with the conceptualization of traits, this shows that greed is rather stable over time. On the other side, having observed two insignificant main effects of greed on different behavioral outcomes (i.e., no support for Hypotheses 1 and 5) and, at the same time, several significant moderated relationships that shape the relationship between greed and behavioral outcomes contingent on situational conditions, I empirically illustrate that situational conditions determine whether greed translates into specific behavior. Thus, my findings empirically back the most recent opinion of greed being a trait with a situational component (Lambie & Haugen, 2019).

Moreover, psychology and organizational scholars are currently debating whether *greed* is by definition immoral (Lambie & Haugen, 2019; Mussel & Hewig, 2016) or whether immoral behavior may be rather a potential outcome of greed (Bruhn & Lowrey, 2012; Hill & Cassill, 2004; Seuntjens, Zeelenberg, van de Ven, et al., 2015). My dissertation adds to this discussion supporting the latter view that greed is not per se immoral but may lead to immoral behavior. Specifically, as greed does not only translate (contingent on the situation) into unethical pro-organizational behavior but also into (rather moral) explorative behavior, I show that greed does not necessarily lead to immoral behavior. Yet, as this study shows, greedy entrepreneurs do engage in immoral behavior, specifically unethical pro-organizational behavior. Unethical pro-organizational behavior is primarily directed against individuals outside the entrepreneurial team; the entrepreneurial teammates, in contrast, are not meant to be harmed in the first place. As greed is closely connected to self-interest (Seuntjens, Zeelenberg, Breugelmans, et al., 2015; Wang & Murnighan, 2011), one potential explanation is that greedy entrepreneurs primarily serve their own interests, and rather as a by-product, the well-aligned interests of their entrepreneurial teammates. Therefore, in line with Seuntjens, Zeelenberg, van de Ven, et al. (2015), this dissertation suggests that greedy individuals tolerate harming others who have diverging interests in order to serve the self, but the harming of others does not seem to be a characterizing element of the construct greed.

In addition, I contribute to literature on *situational strength theory* (Meyer et al., 2010) by being the first to apply this comparably new theory to an entrepreneurship context. Indeed, this dissertation shows that the theory provides interesting insights into when entrepreneurial traits, here greed, translate into specific behavior, here explorative behavior.

Moreover, this dissertation provides insights into the *operationalization* of an entrepreneurial team member's *situational strength*. Specifically, I use the variables industry experience (Hypothesis 2), cognitive trust towards team members (Hypothesis 3), and venture size (Hypothesis 4) for operationalizing situational strength. Whereas cognitive trust towards team members, with whom entrepreneurs typically engage intensively (De Jong et al., 2013; Lechler, 2001), seems to be an important determinant of situational strength, the results for industry experience and venture size are rather mixed (results on Hypotheses 2 and 4 sensitive to model specification and only marginally significant). Particularly because extant studies on situational strength theory in organizational contexts also find mixed results (Judge & Zapata, 2015; Meyer et al., 2010), my findings suggest that future research on situational strength theory should take into account the work environment as an important situational strength determining factor,

particularly in entrepreneurial contexts. While these findings indicate that the team as immediate context of the entrepreneur shapes his or her situational strength, the findings may also suggest that industry experiences, or experiences in general, and venture characteristics are less situational or more distant such that they only marginally influence entrepreneurs' situational strength. Literature on situational strength would profit from more empirical research on situational strength determining factors.

Besides that, this dissertation highlights another important *personality factor* whose translation into specific behavior is elicited by *situational strength*. Whereas extant research investigates mostly traits like the Big Five traits consisting of extraversion, emotional stability, openness, conscientiousness, agreeableness (Meyer et al., 2009; Smithikrai, 2008) or trait positive and trait negative affect (Meyer et al., 2014) under the framework of situational strength theory, this dissertation shows that situational strength theory provides a promising framework to analyze when dark traits like greed translate into behavior.

## **5.2 Practical implications**

Next to theoretical contributions, this study also provides implications for practitioners. Whereas explorative behavior and unethical pro-organizational behavior initially look like conducive to organizational performance, practitioners including entrepreneurial teammates, employees, or investors should be aware that their final impact on performance may be negative. At an early stage, entrepreneurial ventures should engage largely in *explorative behavior* (Choi et al., 2008; Parida et al., 2016) because they obviously need to explore an opportunity before they can start to exploit it (Choi et al., 2008), and, in contrast to established organizations (Junni et al., 2013; Lubatkin et al., 2006), usually lack the resources needed to engage in explorative and exploitative activities simultaneously (Parida et al., 2016). However, as soon as the entrepreneurs have accumulated sufficient information, they should start to engage in exploitative activities (Choi et al., 2008) in order to avoid the so-called “failure trap” where new opportunities replace existing opportunities before they have paid off (Levinthal & March, 1993, p. 105). This dissertation shows that particularly entrepreneurial team members may confine an important role in preventing greedy entrepreneurs' tendency to focus too much on exploration when this threshold is reached.

Likewise, whereas unethical pro-organizational behavior may have a positive impact on the organization in the short-term, the long-term consequences of this behavior may be negative (Graham et al., 2020; Thau, Derfler-Rozin, Pitesa, Mitchell, & Pillutla, 2015). For instance, the

final costs of Enron's CFO Andrew Fastow's engagement in unethical pro-organizational behavior famously overshoot the behavior's benefits to Enron (Fehr et al., 2019). Similarly, at Volkswagen, employees engaged in unethical pro-organizational behavior producing the famous emission scandal (Castille et al., 2018) that not only results in huge legal costs but also in enormous costs related to the loss of reputation. In sum, even though greedy entrepreneurs' behavior may look promising to other stakeholders with similar interests, like the entrepreneurial team, these stakeholders should be aware of the potentially negative consequences greed-specific behaviors may have.

Indeed, various studies show that greed may have far-reaching consequences. For instance, organizational scholars connect greed to the above-mentioned scandals at Enron (Levine, 2005) or at Volkswagen (Haynes, Josefy, et al., 2015a). Organizational research further shows that it is particularly important to account for greed from early on, because team members or employees perceive a manager's greedy behavior and respond to it. If teammates or employees perceive a leader's greedy behavior, their sense of fairness is likely to be activated and they will either respond to it by trying to restore fairness or by leaving (Haynes, Hitt, et al., 2015). Alternatively, their feeling of unfairness may evoke dissatisfaction and reduce job performance (Haynes, Josefy, et al., 2015b). While these behavioral responses are not likely to emerge in an entrepreneurial context due to the better aligned interests of most involved stakeholder groups and the rather pro-organizational behavior of a greedy entrepreneur, it seems likely that entrepreneurial teammates and employees, too, perceive the entrepreneurs' greedy behavior and react accordingly. One potential behavioral reaction could be mimicry of the behavior. Truly, as entrepreneurs' personality characteristics have an important impact on organizational culture (Schein, 1983), entrepreneurs' greed may emboss the entire organizational culture and behavioral norms. Thus, even though the interests of the entrepreneurial team members and the venture itself are better aligned than in established organizations, it seems important to account and control for greed in entrepreneurial ventures from early on. As I will point out in the following, there are potential measures that may be applicable in order to stimulate or confine greedy behavior.

While this dissertation shows that it is important to account for greed in entrepreneurial ventures, it also discloses the important role of trust that affects the translation of greed into greedy behavior. Specifically, it is important to account for the different dimensions of trust and their respective roles when entrepreneurial team members tend to show greedy behavior. Affective trust facilitates the translation of greed into unethical pro-organizational behavior. In

case the entrepreneurial team members tend to show greedy behavior, it is possible to counteract by limiting or even diminishing affective trust. One potential way is to limit the team's interaction frequency (McAllister, 1995). In contrast to affective trust, cognitive trust prevents the translation of greed into unethical pro-organizational behavior. Thus, promoting the emergence of cognitive trust, for example by stressing the peer's reliability and fairness (McAllister, 1995) or by strengthening the awareness of each other's competencies through joint trainings, are potential ways for preventing greedy behavior.

However, it is important to take into account that cognitive trust suppresses the expression of greed-specific behavior even when the behavioral outcome is mostly beneficial, as is explorative behavior for most early-stage entrepreneurial ventures (Choi et al., 2008; Parida et al., 2016). Hence, when entrepreneurs want to manage the translation of greed into behavior in general, a manipulation of cognitive and affective trust seems promising. This may be the case, for example, when an entrepreneurial team member is very high in greed. But when entrepreneurs want to regulate only some but not all behavioral consequences of greed, other measures as designing suitable contracts or developing an appropriate organizational structure seem to fit better.

### **5.3 Limitations**

Notwithstanding the contributions of this dissertation, there are also some limitations to it. First, there are some remarks and limitations concerning the online survey nature of this dissertation's data that I will address in the following. Second, I point out potential limitations due to self-reported data. Third, I discuss the operationalizations of the measured constructs, particularly considering entrepreneurs' experiences and venture size. Fourth, I highlight remarks on the generalizability of the dissertation's findings. Fifth, I point to the need of examining different types of greedy entrepreneurs' unethical behavior. Finally, I suggest to analyze unethical pro-organizational behavior in entrepreneurial contexts more deeply.

First, the data this dissertation builds upon stems from *online surveys*. Most scholars agree that online surveys represent an efficient and suitable tool for collecting data (Frippiat et al., 2010; Wright, 2005). Yet, online surveys come along with two major challenges: sampling errors and access issues (Wright, 2005). In order to reduce the likelihood of potential biases due to sampling errors and access issues, the BEST team applied several measures following extant research (e.g., Baatard, 2012; Wright, 2005). For instance, we addressed sampling errors following propositions to offer non-financial incentives for participation in order to increase

the response rate (Wright, 2005). Moreover, we followed established guidelines when communicating with our participants or designing the surveys (Baatard, 2012; Rogelberg & Stanton, 2007) reducing the likelihood of both sampling errors and access issues. Additionally, I tested for nonresponse bias, which refers to a problematic situation when the part of invited survey participants who actually participate in a study substantially differs from those who did not participate (Armstrong & Overton, 1977). I found no evidence for biased data. Still, it is possible that for example very successful teams were not attracted by our incentives and therefore did not participate. Similarly, it is possible that teams struggling for survival did not participate due to time constraints. Nevertheless, as the BEST team carefully designed the study and as I could not find evidence for sampling errors, I argue that the online survey data represents a promising data base for this research.

Second, this dissertation bases on *self-reported data* and therefore may be prone to common method variance and socially desirable responding. *Common method variance* refers to a variance that is due to the method of data collection rather than the underlying constructs and may undermine the conclusions about the relationships (Podsakoff et al., 2003). Indeed, particularly in self-reported data, it is important to account for common method variance (Tehseen et al., 2017). In order to reduce the likelihood of common method variance to bias my results, we followed the recommendations by Podsakoff et al. (2003) and temporarily separated the construct measurements, guaranteed the participants a secure handling and anonymity of their data, and stated that there is no wrong or right answer to the questions (see 3.4.3). Finally, I tested for common method variance finding no evidence for it. Despite the fact that there is still potential ground for common method variance in my data, I claim that common method variance should not critically bias my results. Moreover, a *social desirability bias* may be an issue in my data, particularly as I analyze constructs that are socially reprehensible (Grimm, 2010), namely greed and unethical pro-organizational behavior. In order to avoid socially desirable responding, we told our participants that there are no ‘right’ or ‘wrong’ answers. Furthermore, we promised to handle their data with great caution. Finally, I also controlled for social desirability in the statistical models using a short form of Marlow-Crowne’s social desirability scale by Strahan and Gerbasi (1972). Despite those efforts of avoiding socially desirable responding, I cannot fully rule out the possibility of social desirability biasing my data.

Third, scholars may question the operationalization of some constructs. The BEST team applied great caution when choosing scales (see 3.1.1). Nevertheless, one may argue that there are better

operationalizations for some constructs. For instance, for measuring industry experience, we could have applied a more detailed scale rather than asking for the time a participant has already been working in the current venture's industry. Or, as illustrated in 4.2.2, I may have captured venture size based on the ventures' revenues or employees plus the number of entrepreneurial team members, rather than just the number of employees (see robustness tests in 4.2.2).

Fourth, as this research takes place in a homogeneous setting consisting of early-stage ventures from the same geographic region, scholars may raise concerns regarding the *generalizability of this dissertation's findings*. Specifically, this research focuses on *early-stage* entrepreneurs' explorative behavior, rather than their exploitative behavior. While explorative behavior is particularly relevant in young entrepreneurial ventures (Choi et al., 2008; Parida et al., 2016) and at that stage is a reasonable behavioral outcome of greed (see 2.2.2), it is also possible that at a later stage, greedy entrepreneurs rather focus on exploitation and neglect exploration. Similarly, while this research focuses on the translation of greed into venture-focused unethical behavior, it is possible that greedy entrepreneurs engage in self-focused unethical behavior at a later stage. Specifically, at a later stage, when the entrepreneurs' shares get increasingly diluted and entrepreneurs' and ventures' interests move apart, venture-focused unethical behavior is to a lesser extent a way to satisfy the greedy entrepreneurs' desires and self-focused unethical behavior may become more attractive.

Moreover, this research analyzes greed in the specific context of entrepreneurial teams. While the team members represent a key factor of the entrepreneurs' work environment, other stakeholders who are typically coming in at a later stage, like employees or investors, may also impact entrepreneurs' perceived situational strength and their self-control and, thus, play a relevant role in the translation of greed into greedy behavior. Hence, the identified outcomes of entrepreneurs' greed, explorative behavior, and unethical pro-organizational behavior, may not be observable in older, more established ventures. Similarly, in a *different region*, diverging cultural norms or values may impact entrepreneurs' propensity to engage in explorative and unethical pro-organizational behavior based on their greed levels. Therefore, this dissertation's findings may not be one-to-one applicable in a different region. Due to the limited generalizability of this dissertation's findings, future studies on the behavioral outcomes of greed on older ventures and in a different geographical region would provide interesting insights.

Fifth, the second model of this dissertation focuses on the relationship between greed and a specific *type of unethical behavior*, namely unethical pro-organizational behavior. Unethical

pro-organizational behavior refers to a kind of unethical behavior that is meant to serve the venture (Umphress et al., 2010). Though, it is possible that entrepreneurs high in greed are also attracted to achieve instant rewards in order to serve their own momentary interests. For instance, a greedy entrepreneur may buy at the venture's expenses an expensive luxury car rather than a purposeful car that fulfills the utilization requirements in order to serve the own status-oriented desires. Such behavior is rather self-oriented than venture-oriented and may cause financial harm to the venture. Future research may analyze the different types of unethical behaviors greedy entrepreneurs show.

Finally, this research finds that contingent on the prevailing situation, *entrepreneurs* high in greed tend to engage in *unethical pro-organizational behavior*. However, we actually do not know how unethical pro-organizational behavior in entrepreneurial ventures looks like. Qualitative studies that examine actual unethical pro-organizational behavior in entrepreneurial ventures could provide interesting insights. Indeed, even in the context of established organizations where scholars propose that unethical pro-organizational behaviors include an exaggeration of the truth (Castille et al., 2018), hiding unfavorable information about the organization or lying to stakeholders in order to support the organization (Umphress & Bingham, 2011), qualitative studies on the actual behavior are needed.

#### **5.4 Conclusions and avenues for future research**

While I mention some potential avenues for future research in the theoretical contributions, practical implications, as well as the limitations parts, I subsequently highlight those avenues that I perceive to be particularly promising.

First, by being among the first to analyze greed in entrepreneurial contexts and by providing insights on the role of greed in entrepreneurial ventures, this study should represent a beginning in the research on greed in entrepreneurial contexts. Indeed, while this research provides first insights, there are still plenty of unanswered questions about entrepreneurial greed. For instance, while this research shows that greedy entrepreneurs engage in greedy behavior in order to serve their own desires, it would be interesting to understand the role greed plays in individuals' decisions to become entrepreneurs. Moreover, this research finds that entrepreneurial team members play an important role in facilitating or preventing entrepreneurs' greedy behavior. Although most entrepreneurial ventures are founded by teams (Klotz et al., 2014), it is important to investigate the role of single founders' greed in their ventures. Particularly, absent entrepreneurial teammates, future research could analyze the

factors that tilt the balance of a *single* entrepreneur's hot and cool systems to one side or the other. Furthermore, while this research points to the important role of entrepreneurial team members for preventing or facilitating entrepreneurs' greedy behavior, future research could study how these team members actually perceive their colleague's greed. Additionally, research on entrepreneurial greed would profit from studies investigating the role of external stakeholders like investors or customers. It would be interesting to understand if they have an influence on the translation of entrepreneurs' greed into behavior. Moreover, it could be relevant to understand how they perceive entrepreneurs' greed and whether entrepreneurs' greed influences investors' decision to invest in the venture and customers' decision to buy a product. Finally, the impact of entrepreneurs' greed on venture performance could be assessed. Certainly, there is plenty of opportunities for intriguing studies on greed in entrepreneurial contexts using both qualitative and quantitative study designs.

Second, most studies on the entrepreneurial personality focus on personality characteristics from the bright side, as proactivity (Yan, 2010), innovativeness (Mueller & Thomas, 2001; Utsch & Rauch, 2000), and passion (Baum & Locke, 2004; Cardon, Wincent, Singh, & Drnovsek, 2009). However, this dissertation illustrates the importance and the distinctiveness of studying dark entrepreneurial traits. First, it shows that entrepreneurs' dark personality traits, here greed, impact different types of entrepreneurial behavior, here explorative behavior and unethical pro-organizational behavior. Second, this dissertation shows that the entrepreneurial setting is somehow unique and that findings on dark personality traits from the context of established organizations cannot necessarily be applied to an entrepreneurial context. Therefore, and in line with Shepherd (2019), I encourage scholars to pay more attention to the dark side personality traits in entrepreneurial contexts. Further examination of yet rather disregarded dark personality traits in entrepreneurial contexts, as spitefulness, egoism, or greed, would help us to get a more holistic understanding of the entrepreneurial personality and entrepreneurial behavior.

Third, while situational strength theory (Meyer et al., 2010) and the hot/cool systems approach of self-control theory (Metcalf & Mischel, 1999) prove to be suitable frameworks for analyzing the behavioral outcomes of greed, trait activation theory (Tett & Burnett, 2003; Tett & Guterman, 2000) seems to be another promising theoretical lens for analyzing behavioral outcomes of greed. In contrast to situational strength theory, trait activation theory postulates that the emergence of trait-based behavioral outcomes is not determined by situational strength but rather by specific "*trait relevant* situational cues" (Tett & Guterman, 2000, p. 398). Since

the trait relevant situational cues for greed were unknown when I started my research, analyzing outcomes of greed under the framework of trait activation theory was impossible. However, as my research shows that the translation of greed into different types of behavior, specifically explorative behavior and unethical pro-organizational behavior, heavily depends on the work environment, work environmental factors may represent greed-specific situational cues that may activate the emergence of greedy behavior in work contexts. Accordingly, I encourage future studies on behavioral outcomes of greed to apply trait activation theory and, particularly, consider work environmental factors like trust towards team members, as trait-relevant situational cues.

Fourth, this dissertation finds that entrepreneurs may engage in unethical pro-organizational behavior. However, apart from anecdotes we lack understanding on the actual materialization of unethical pro-organizational behavior not only in entrepreneurial ventures, but also in established organizations. Therefore, qualitative studies that examine actual types of unethical pro-organizational behavior and their impact on organizations and on different stakeholders like teammates, customers, and investors, could provide important insights. Specifically, a contrasting view on unethical pro-organizational behavior in entrepreneurial ventures and established organizations seems valuable. Additionally, a quantitative study could provide insights on whether entrepreneurs whose interests tend to be closely linked to those of their venture (Bird & Jelinek, 1989; Ruvio et al., 2010; Townsend et al., 2009) are more likely to engage in unethical pro-organizational behavior than managers of established organizations.

Fifth, I conduct this research in a comparably homogenous setting of early-stage ventures from the same geographical region. First, it would be interesting to gain insights from studies on later stage ventures. Specifically, future studies could examine whether greedy entrepreneurs at a later stage continue to explore new opportunities seeking for maximizing their individual outcome or whether they start exploiting on a previously identified opportunity in order to extract desired financial and non-financial means from the venture. Similarly, scholars may investigate whether increasing conflicts of interest between greedy entrepreneurs and their ventures appear as the shares usually get more diluted at a later stage and therefore prompt the greedy entrepreneur to shift from venture-focused unethical behavior to rather self-focused unethical behavior. Second, the conduction of a similar study like the one of this dissertation in a different regional setting could yield interesting insights on whether the outcomes of greed depend on specific cultural norms and values. It appears possible that cultural norms play an important role in whether individuals are constantly looking for new opportunities or show

unethical behavior. Moreover, diverging cultural norms may affect the importance of the work environment for the translation of greed into behavior. For instance, in some cultures the social environment outside the venture, e.g., family and friends, could play a more important role in preventing or facilitating greedy behavior.

Sixth, next to explorative behavior and unethical pro-organizational behavior, there are other behavioral outcomes that may result from greed. For instance, while explorative behavior in this dissertation relates to a search for new opportunities, innovation and creating variation *for the venture* (March, 1991; Mom et al., 2007) and indeed seems to be a suitable behavior for greedy entrepreneurs to achieve their desires, future studies may elaborate if greedy entrepreneurs simultaneously also engage in *individual* exploration activities like looking for jobs with higher incomes. Similarly, it is possible that greedy entrepreneurs not only engage in unethical pro-organizational behavior in order to fulfill their desires and simultaneously their ventures' desires, but also in unethical behavior that is *not meant to support the organization*. For instance, greedy entrepreneurs may try to exploit the ventures' (usually quite limited) resources for their own sake, or they may use the venture as a tool to evade personal taxes. Moreover, it would be interesting to know if greed affects entrepreneurs' leadership style. For instance, do greedy entrepreneurs rather engage in *transactional leadership*, where leaders motivate their followers catering on followers' self-interest, for instance by promising rewards for good work or by sanctioning if they make a mistake, than on a *transformational leadership* style, where leaders represent a rather moral, charismatic role model to followers (Bass, 1999; Bass & Steidlmeier, 1999)?

In sum, this dissertation extends the understanding of dark personality traits, and in particular greed, in entrepreneurial contexts. It shows that greedy entrepreneurs engage in specific behavior in order to serve their own interests. However, whereas greedy managers' behavior in established organizations works due to conflicts of interest against organizational interests, greedy entrepreneurs' behavior tends to support both individual and ventures' interests. Importantly, this research shows that greedy entrepreneurs do not always engage in greedy behavior but only under certain conditions that are primarily shaped by the work environment. In general, this study does not only illustrate the important role greed plays in organizational contexts, but also opens a broad variety of avenues for future research that can build on this dissertation's findings.

## 6. References

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# 7. Appendix

## 7.1 Webpage of the BEST-Study

Entrepreneurship Research Institute  
TUM School of Management  
Technical University of Munich



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Home »<sup>[1]</sup> Research »<sup>[2]</sup> Entrepreneurial Team Project (BEST) »<sup>[3]</sup> BEST VI

### BEST VI

BE PART OF  
**(BEST)**  
BUILDING  
ENTREPRENEURIAL  
SUCCESS TEAMS <sup>[4]</sup>

*Scroll down for the English version.*

#### Nehmen Sie Teil an der größten Studie zu Gründungsteams im deutschsprachigen Raum! <sup>[4]</sup>

[Klicken Sie hier, um sich zu registrieren.](#) <sup>[4]</sup>

Ziel: Einsichten zum Umgang mit Stress sowie zu Persönlichkeitsfacetten und Kultur in Gründungsteams

Bonus:

- Zugang zu kostenfreier Unterstützung durch Studierende der TUM (3-monatige Vollzeit-Projektstudien, Bachelor- oder Masterarbeiten)
- Prominente Platzierung Ihrer Stellenausschreibung auf unserer Webseite
- BEST Workshop-Event mit 1:1 Coaching und Breakout Sessions sowie Keynotes mit führenden Entrepreneurship Professor:innen & C-Level der UnternehmerTUM
- Wertvolles Zertifikat zur Teilnahme, insbesondere für potentielle Investoren & Recruiting
- Auf Wunsch handlungsorientierte Analyse der Ergebnisse des Teams & Vergleich mit 100+ Gründungsteams

#### Wer kann teilnehmen?

Die Teilnahmebedingungen sind:

- Ihr Gründungsteam<sup>1</sup> besteht aus mindestens 2 Mitgliedern
- Es sind weniger als 5 Jahre seit der Gründung Ihres Unternehmens vergangen

<sup>1</sup>Unter Gründungsteam verstehen wir die Gruppe von Personen, die hauptsächlich für die strategische

**p. 1**

Prof. Dr. Nicola Breugst<sup>[5]</sup>  
Prof. Dr. Holger Patzelt <sup>[7]</sup>  
Carolin Feldmeier <sup>[8]</sup>  
Fritz Tacke <sup>[9]</sup>  
Aishwarya Kakatkar <sup>[10]</sup>  
Max Haase <sup>[11]</sup>

In Zusammenarbeit mit [UnternehmerTUM](#) <sup>[12]</sup>



*English version:*

#### Be part of the biggest study on entrepreneurial teams in the German-speaking region! <sup>[4]</sup>

[Click here to register.](#) <sup>[4]</sup>

Purpose: Gain insights into coping with stress, as well as the facets of personality and culture in founder teams.

Bonus:

- Access to free support from TUM students (3-month full-time project studies, Bachelor or Master theses)
- Prominent placement of your internship/job advertisements on our website
- BEST Workshop Event with 1:1 Coaching and Breakout Sessions, as well as Keynotes from leading Entrepreneurship Professors & C-Level speakers from UnternehmerTUM
- Valuable certificate of participation, especially for potential investors & recruitment
- Upon request, actionable analysis of the results of the team & comparison with 100+ founder teams

#### Who can participate?

The criteria for participation are:

- Your founder team<sup>1</sup> consists of at least 2 members
- It has been less than 5 years since the founding of your venture

**p. 3**

Entscheidungsfindung und den laufenden Betrieb des Unternehmens verantwortlich sind.

#### Wie genau läuft die Studie ab?



Die Studie besteht aus drei Teilen: (1) Einem Interview mit einem/r Doktorand:in des Entrepreneurship Research Institute zu Beginn, (2) einer Online-Fragebogenserie über 2,5 Monate mit flexiblem Start sowie (3) einem weiteren Interview am Ende der Erhebung.

Die Interviews dienen dem gegenseitigen Kennenlernen sowie der Reflexion und finden entweder bei Ihnen vor Ort oder telefonisch statt. Die Fragebogenserie umfasst einen allgemeinen Fragebogen am Anfang und Ende der Erhebung sowie wöchentliche Kurzfragebögen. Alle Fragebögen können Sie bequem auf Ihrem Laptop, Tablet oder Smartphone ausfüllen.

Nach dem Interview und ersten Fragebogen können Sie als ersten Bonus Ihre Stellenausschreibungen platzieren. Nach erfolgreicher Teilnahme (d.h., Sie haben nicht mehr als zwei Kurzfragebögen innerhalb der Umfrage verpasst), erhalten Sie den zweiten Bonus. Dieser besteht aus einem Zugang zu Studierenden der TU München, einem BEST Workshop-Event, einem wertvollen Zertifikat zur Teilnahme sowie – auf Wunsch – einer handlungsorientierten Analyse der Ergebnisse Ihres Teams.

#### Was sagen bisherige Teilnehmer zu der Studie?

*"Die Zusammenarbeit im Rahmen der BEST Studie war auch für uns immer sehr spannend und wir waren insbesondere von dem professionellen Ablauf beeindruckt."* Gründer & Geschäftsführer eines Consumer Start-ups

*"Uns hat die Teilnahme Spaß gemacht und die Ergebnisse haben uns dabei geholfen, mehr über unser Team zu lernen."* Gründerin & Geschäftsführerin eines IT Start-ups

#### Sie möchten an der Studie teilnehmen oder haben Fragen?

[Registrierungsformular](#) <sup>[4]</sup>

Bei Fragen kontaktieren Sie uns bitte unter: [best\\_ent@wi.tum.de](mailto:best_ent@wi.tum.de)<sup>[5]</sup>

Wir freuen uns darauf, Ihre Fragen zu beantworten und Sie ein Stück auf Ihrem spannenden unternehmerischen Weg begleiten zu dürfen!

**p. 2**

<sup>1</sup>By founder team we mean the group of people who are primarily responsible for the strategic decision-making and day-to-day operations of the company.

#### How exactly will the study work?



The study consists of three parts: (1) A one-hour interview with a doctoral student from the Entrepreneurship Research Institute, (2) an online questionnaire series, and (3) a further interview at the end of the data collection.

The interview is intended for us to get to know each other, as well as for reflection, and will take place either at your office or over the phone. The questionnaire series includes a general questionnaire at the beginning and end of the series as well as weekly short questionnaires. All questionnaires can be conveniently filled out on your laptop, tablet, or smartphone.

After the interview and the first questionnaire, you can already receive the first bonus of being able to post your job postings on our website. After successful participation (i.e., if you did not miss more than two short questionnaires in the series) you will receive the second bonus, which consists of access to support from students of TU München, a BEST workshop event, a valuable certificate confirming your participation in the study and - upon request - an actionable analysis of the results of your team.

#### What do previous participants say about the study?

*"The cooperation within the scope of the BEST study was also always very exciting for us and we were particularly impressed by the professional workflow."* founder and CEO of a consumer startup

*"We enjoyed participating and the results helped us to learn more about our team."* founder and CEO of an IT startup

#### You want to participate in the study or have questions?

[Registration form](#) <sup>[4]</sup>

In case of questions, please contact us at: [best\\_ent@wi.tum.de](mailto:best_ent@wi.tum.de)<sup>[5]</sup>

We look forward to answering your questions and accompanying you part of the way along your exciting entrepreneurial journey!

**p. 4**

Figure 18: Webpage of BEST-Study pages 1 to 4; First German version, second English version; p. = page.

Prof. Dr. Nicola Breugst <sup>[13]</sup>  
 Prof. Dr. Dr. Holger Patzelt <sup>[7]</sup>  
 Carolin Feldmeier <sup>[8]</sup>  
 Fritz Tacke <sup>[9]</sup>  
 Aishwarya Kakatkar <sup>[10]</sup>  
 Max Haase <sup>[11]</sup>

In partnership with: UnternehmerTUM <sup>[12]</sup>

**unternehmertum**  
 Center for Innovation and Business Creation at TUM

---

**TUM Entrepreneurship Research Institute**

Prof. Dr. Dr. Holger Patzelt  
 Prof. Dr. Oliver Alexy  
 Prof. Dr. Nicola Breugst  
 Prof. Dr. Hana Milanov

Visiting Address:  
 Lichtenbergstraße 6  
 85748 Garching

Postal Address:  
 Technical University of Munich  
 Avorsstr. 21  
 80333 München  
 Germany  
 Tel: +49 89 289 52803

**p. 5**

Figure 19: Webpage of BEST-Study page 5; Final page in English; p. = page.

## 7.2 Leaflet of BEST-Study

BE PART OF  
**(BEST)**  
 BUILDING  
 ENTREPRENEURIAL  
 SUCCESS TEAMS

Nehmen Sie Teil an der größten Studie zu  
 Gründungsteams im deutschsprachigen Raum!

**Ziel** Einsichten zum Umgang mit Stress sowie zu Persönlichkeitsfacetten und Kultur in  
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**Bonus**

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- Wertvolles Zertifikat** zur Teilnahme, insbesondere für potentielle Investoren & Recruiting
- Auf Wunsch **handlungsorientierte Analyse der Ergebnisse** des Teams & Vergleich mit 100+ Gründungsteams

**Zeitaufwand** Zwischen 30-40 Min. pro Monat über insgesamt ca. 6 Monate

**Neugierig?** Weitere Informationen befinden sich auf der Rückseite bzw. online (Website kann über den QR-Code anbei oder unter [www.ent.wi.tum.de/best](http://www.ent.wi.tum.de/best) erreicht werden)



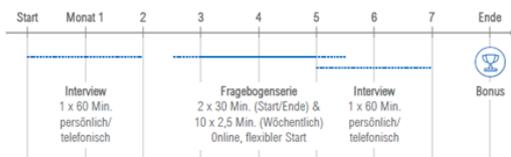
Entrepreneurship Research Institute  
 TUM School of Management  
 Technical University of Munich

**unternehmertum**  
 Center for Innovation and Business Creation at TUM

**TUM**

**p. 1**

WIE GENAU LÄUFT DIE STUDIE AB?



Die Studie besteht aus drei Teilen: (1) Einem Interview mit einem/-r Doktorand/-in des Entrepreneurship Research Institute zu Beginn, (2) einer Online-Fragebogenserie über 2,5 Monate mit flexiblen Start sowie (3) einem weiteren Interview am Ende der Erhebung.

Die Interviews dienen dem gegenseitigen Kennenlernen sowie zur Reflektion und finden entweder bei Ihnen vor Ort oder telefonisch statt. Die Fragebogenserie umfasst einen allgemeinen Fragebogen am Anfang und Ende der Erhebung sowie wöchentliche Kurzfragebögen. Alle Fragebögen können Sie bequem auf Ihrem Laptop, Tablet oder Smartphone ausfüllen.

Nach dem Interview und ersten Fragebögen können Sie als ersten Bonus Ihre Stellenausschreibungen platzieren. Nach erfolgreicher Teilnahme (d.h., Sie haben nicht mehr als zwei Kurzfragebögen innerhalb der Umfrage verpasst), erhalten Sie den zweiten Bonus. Dieser besteht aus einem Zugang zu Studierenden der TU München, einem BEST Workshop-Event, einem wertvollen Zertifikat zur Teilnahme sowie – auf Wunsch – einer handlungsorientierten Analyse der Ergebnisse Ihres Teams.

**WAS SAGEN BISHERIGE TEILNEHMER ZU DER STUDIE?**

*"Die Zusammenarbeit im Rahmen der BEST Studie war auch für uns immer sehr spannend und wir waren insbesondere von dem professionellen Ablauf beeindruckt."*  
**Gründer & Geschäftsführer eines Consumer Startups**

*"Uns hat die Teilnahme Spaß gemacht und die Ergebnisse haben uns dabei geholfen, mehr über unser Team zu lernen."*  
**Gründerin & Geschäftsführerin eines IT Startups**

**SIE MÖCHTEN AN DER STUDIE TEILNEHMEN ODER HABEN FRAGEN?**  
 Kontaktieren Sie uns per E-Mail ([best.ent@wi.tum.de](mailto:best.ent@wi.tum.de)) oder besuchen Sie unsere Website (über den QR-Code oder unter [www.ent.wi.tum.de/best/](http://www.ent.wi.tum.de/best/))









Prof. Dr. Nicola Breugst  
 Prof. Dr. Dr. Holger Patzelt  
 M.Sc. Carolin Feldmeier  
 M.Sc. Fritz Tacke  
 M.A. Aishwarya Kakatkar  
 M.Sc. Max Haase

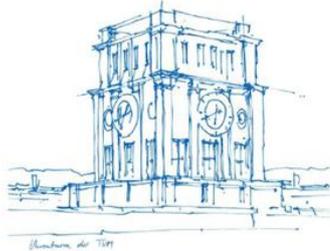
**p. 2**

Figure 20: Leaflet of BEST-Study, front and back page; Leaflet in German only. For internationals, link to information in English via QR-code; p. = page.

## 7.3 Report for BEST-Study participants

### Building Entrepreneurial Success Teams –

#### Individualized Team Report 2019



**Axel Roitzsch, Agenturmatching**

This research has been generously supported by the Joachim Herz Stiftung.



October 10, 2019

### Purpose and Structure of the BEST Study

#### Motivation and Purpose

*"We believe that ideas are easy, execution is everything, and in anything worth doing, it takes a team to win."* (John Doerr, Venture Capitalist)

Startups, especially those based on complex technologies, are in most cases founded not by individuals, but rather by teams. Entrepreneurship researchers and practitioners agree that a central building block for a young company is the founding team. Moreover, in order to deal with the challenging, and oftentimes stressful, process of starting a venture, founding teams bring together varied attitudes, personalities, and cultures.

In November 2018 the Entrepreneurship Research Institute of the Technical University of Munich launched the BEST study to gain insights into how entrepreneurs and founding teams cope with stress, bring together diverse personalities, and build a joint team culture.

#### Study Structure

Over the last year, we interviewed and surveyed 307 entrepreneurs from 143 founding teams from all over Germany – all thanks to your participation! The study consisted of:



287 hours of interviews



2748 questionnaires



12 months of study

#### Findings

In the following pages we have summarized the first findings of the study. You will find descriptive statistics on study participants, as well as personalized results for your team on a variety of topics, including team dynamics, stress, work-life balance, personality, and more.

3

### Letter to our participants

Dear **Name of participant**

You as part of the founding team of **Venture name** participated in the "Building Entrepreneurial Success Teams" (BEST) study. Since November 2018, the Entrepreneurship Research Institute of the Technical University of Munich has conducted this study to gain a better understanding of the development and success factors of entrepreneurs and their founding teams. The BEST team is particularly interested in entrepreneurial team culture (Aishwarya Kakatkar), work-life balance (Carolin Feldmeier), entrepreneurial stress (Max Haase), and entrepreneurial personality (Fritz Tacke).

We asked for your assessment regarding different individual and team dimensions using both qualitative methods, i.e., interviews, and quantitative methods, i.e., with twelve surveys. Thanks to your incredible engagement and participation, the BEST study has turned out to be the biggest data collection in the field of entrepreneurship in Germany – thank you very much!

With this report we would like to express our gratitude. We hope to use this report as an opportunity for us, as researchers, to pass on our knowledge to practitioners and to support you on your entrepreneurial journey. Based on your answers during the study, you will receive venture-specific feedback. Before that, we would like to provide you with some brief information on the BEST study, as well as regarding the use and interpretation of the study results. We are very grateful that **Venture name** took part in our study. Thank you very much.

Best regards,

Aishwarya Kakatkar, Carolin Feldmeier, Max Haase, and Fritz Tacke



2

### Information about the report

#### Table of contents

1. Descriptive statistics	
• Venture level	p. 5
• Individual level	p. 6
2. Individual level	
• Weekly figures	p. 7-8
• Personality traits	p. 9
• Attitude	p. 10
• Working behavior	p. 11
• Correlations	p. 12
3. Team level	
• Team culture	p. 13-14
• Venture progress	p. 15
• Correlations	p. 16

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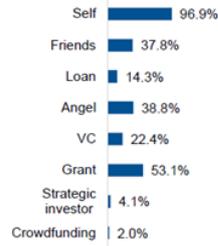
Figure 21: Report for BEST-Study participants, pages 1 to 4

### Descriptive statistics: Venture-level

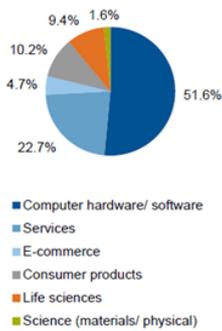
128 ventures participated in the BEST surveys

- Average founding team size: 2.6 members
- Percentage of ventures that are already founded: 94.0%  
Average age of ventures (as of Oct 2019): 2.6 years
- Percentage of ventures with employees: 93.0%  
Average number of employees: 6.3
- Percentage of ventures making revenues: 73.4%

#### Sources of Financing



#### Industries



Percentage of ventures using the respective source (multiple answers possible)

1. Descriptive statistics  
2. Individual level  
3. Team level

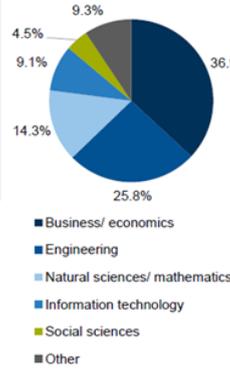
5

### Descriptive statistics: Individual-level

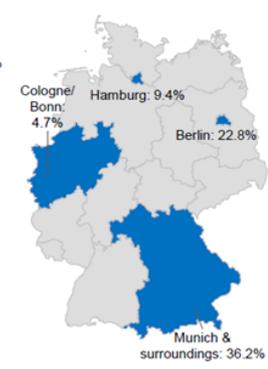
276 persons participated in the BEST surveys



#### Field of education



#### Top 4 founding locations



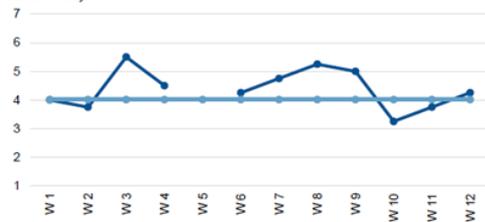
1. Descriptive statistics  
2. Individual level  
3. Team level

6

### Individual level statistics: Weekly figures

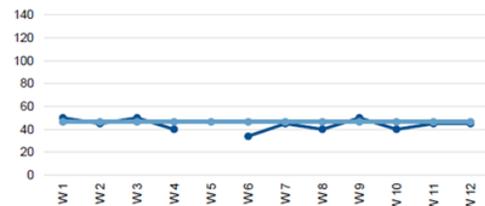
#### Stress

The graph shows the average level of stress of all participants over all weeks (W 1 - W 12) in comparison to your own stress level per week. Stress was measured on a weekly basis using items like "I felt a great deal of stress because of my work in the last 7 days".



#### Effort

The graph shows the average level of effort of all participants over all weeks in comparison to your own effort level per week. Effort was measured by asking for the estimated hours of work time per week.



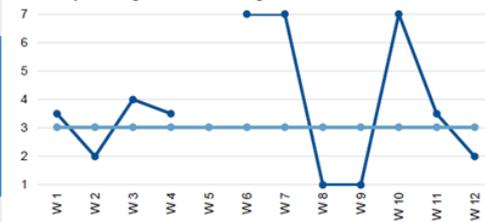
1. Descriptive statistics  
2. Individual level  
3. Team level

7

### Individual level statistics: Weekly figures

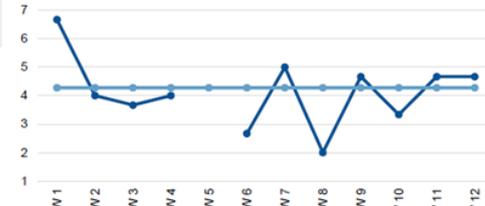
#### Psychological detachment

The graph shows the average level of psychological detachment of all participants over all weeks in comparison to your own psychological detachment per week. Psychological detachment was measured with items like "During non-work time in the last 7 days, I forgot about work". Psychological detachment is conceptualized as mentally switching off from work during non-work time.



#### Creativity

The graph shows your weekly level of creativity compared to the overall average level of creativity of all participants. Creativity was measured with items like "During my work in the last 7 days, I generated original solutions for problems".



1. Descriptive statistics  
2. Individual level  
3. Team level

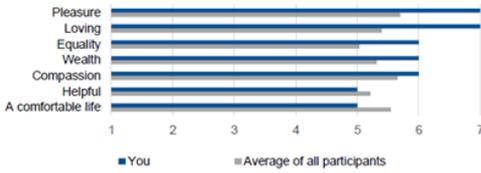
8

Figure 22: Report for BEST-Study participants, pages 5 to 8

### Individual level statistics: Personality traits

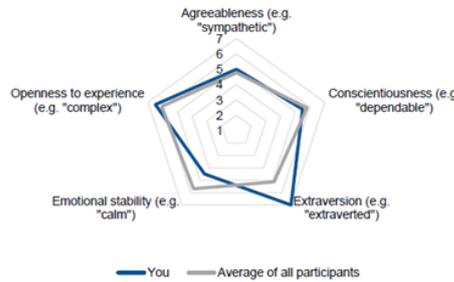
#### Values

The graph shows your personal values. A comparison of your values to the values of all participants is illustrated in the following graph.



#### Personality

The graph shows your self-assessed personality in comparison to that of all our participants. For example extraversion is measured asking "To what extent do you perceive yourself as (1) extraverted, enthusiastic, and (2) reserved, quiet".

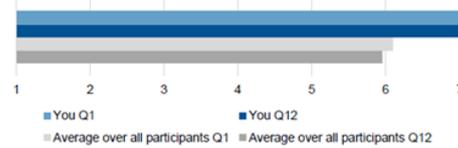


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### Individual level statistics: Attitude

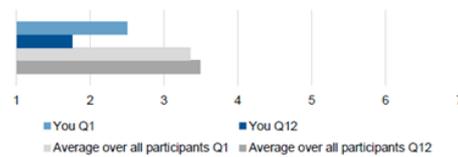
#### Entrepreneurial self-efficacy

The graph shows your level of entrepreneurial self-efficacy (ESE) in the first questionnaire (Q1) compared to the last questionnaire (Q12), as well as the average level of ESE of all participants across all questionnaires. An exemplary item for ESE is "I am confident that I can successfully think creatively". ESE is comparably stable over time and refers to your self-belief in your ability to successfully identify, develop and commercialize new business opportunities.



#### Impression management

The graph shows how often you try to manage others' impressions of you when meeting people outside of your work environment. For example impression management is measured asking how often you "make people aware of your talents or qualifications". Impression management refers to how people try to influence the impression or image others have of them.

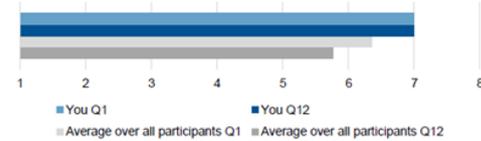


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### Individual level statistics: Working behavior

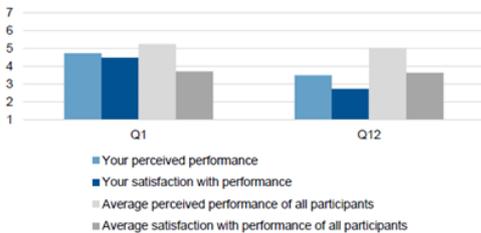
#### Team satisfaction

The graph shows how satisfied you are with working in your team, as well as the average value of team satisfaction of all participants. For example, participants indicated to what extent they were "happy working with this founding team".



#### Perceived performance & satisfaction with performance

The graph shows how you perceived the performance of your venture and how satisfied you were with it at two points in time: once at the beginning (Q1) and once at the end (Q12) of the questionnaire series. Moreover, it compares your perceived performance (e.g., "We are very satisfied with the progress of this venture") and satisfaction with specific performance measures (e.g., sales or market share) to that of all participants.



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### Individual level statistics: Correlations

#### Impact of different dimensions

Dimension	Team satisfaction	Perceived performance	Satisfaction with performance
Stress	-	-	
Psychological detachment			+
Entrepreneurial self-efficacy	+	+	+
Impression management	-		

Note: ++ stands for strong positive correlation (>0.2), + for positive correlation (0.05 to 0.2), - for negative correlation (-0.05 to -0.2) and -- for strong negative correlation (<-0.2). Correlations are based on 287 answers from Q1.

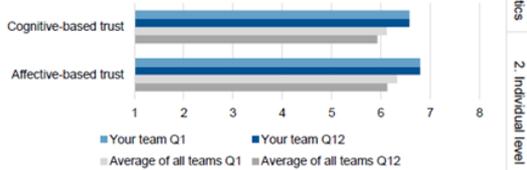
12

Figure 23: Report for BEST-Study participants, pages 9 to 12

### Team level statistics: Team culture (1)

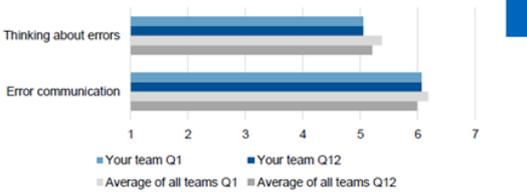
#### Trust

The graph shows two components of trust, namely, affective and cognitive. We measured affective trust with items like "We have a sharing relationship and can all freely share our ideas, feelings, and hopes" and cognitive trust with items like "Our team approaches the work with professionalism and dedication".



#### Error culture

The graph shows to what extent teams communicate and think about errors. Error communication is measured with items like "When I make a mistake at work, I tell my founding team members about it in order that they do not make the same mistake". Thinking about errors is measured with items like "After a mistake has happened, in our founding team, we think long and hard about how to correct it".

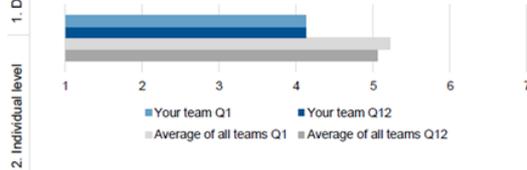


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### Team level statistics: Team culture (2)

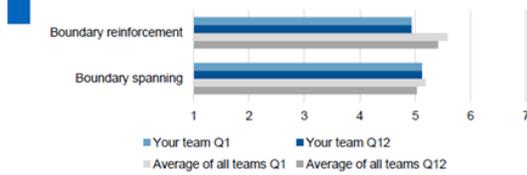
#### Task reflexivity

The graph shows task reflexivity. We measured this through items such as "The founding team often reviews its objectives". Task reflexivity is conceptualized as the extent to which teams reflect on and adapt their common objectives, strategies, and processes.



#### Boundary work

The graph shows boundary work consisting of boundary reinforcement and boundary spanning. We measured boundary reinforcement with items like "To what extent has your founding team tried to create a clear sense of its identity and purpose?" and boundary spanning with items like "To what extent does your founding team encourage its members to solicit information and resources from elsewhere beyond the venture?". Boundary work comprises the extent to which teams establish, maintain, and enforce boundaries.

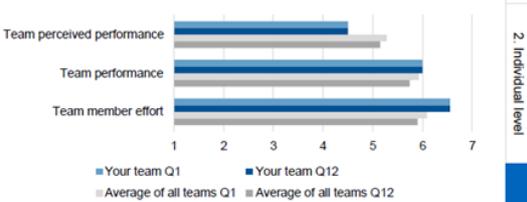


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### Team level statistics: Venture progress

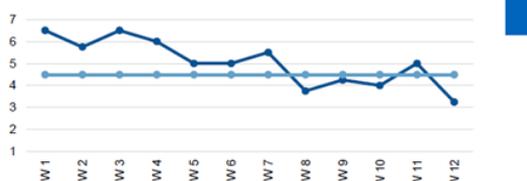
#### Performance

The graph shows team member effort, team performance, and perceived venture performance. Team member effort was measured with items like "Since our start, the members of my founding team have worked as hard as they could to achieve the founding team's objectives". Team performance was, for instance, measured with asking for your rating of "Quality of work". Perceived venture performance was measured with items like "I am very satisfied with the progress of our venture".



#### Goal progress

The graph shows goal progress. It was measured using items such as "We have made a great deal of progress concerning our venture goal in the last 7 days".



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### Team level statistics: Correlations

#### Impact of different dimensions

Dimension	Team satisfaction	Perceived performance	Satisfaction with performance
Trust	++	++	
Error communication	++	++	
Thinking about errors	+	++	
Task reflexivity		+	++
Boundary spanning			
Boundary reinforcement	++	++	

Note: ++ stands for strong positive correlation (>0.2), + for positive correlation (0.05 to 0.2), - for negative correlation (-0.05 to -0.2) and -- for strong negative correlation (<-0.2). Correlations are based on Q1 averages from 128 teams.

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Figure 24: Report for BEST-Study participants, pages 13 to 16

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**Figure 25: Report for BEST-Study participants, pages 17 to 18**