

# **The role of fear for entrepreneurial venture creation - causes of failure before and after foundation**

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## Abstract

If a potential entrepreneur refrains from founding a company, from the perspective of venture creation he/she already failed even before starting. Based on an empirical survey, this study identifies fear of failure as the major cause hindering potential entrepreneurs from founding companies. It explores the reasons, why they think they would fail and shows that many of those reasons do not match actual observations why startups fail in reality. Further, the study measures the amount of fear and its components and their development along time for different groups of entrepreneurs. Here, the impact of a potential failure is more important than its perceived probability throughout the process, except immediately before foundation, when due to a “cold feet” effect (Epstein & Kopylov 2007) the probability suddenly gets more important. The study reveals the association between the personal attributes of individual entrepreneurs and the fear they experience. The attributes *intrinsic motivation* and *leadership experience* can explain most of the perceived fear of founding a venture. A comparison of the personal attributes with the attributes associated with higher probabilities of actually founding a company and making it successful mostly shows a match. That means certain attributes are as well favorable for coping with fear, taking the foundation decision and making a venture successful. However, there are certain exceptions. Overconfidence for example supports the foundation decision but has a negative effect on making the venture successful. The study concludes with concrete recommendations to improve the entrepreneurial activity in a country.

Keywords: aspiring/nascent entrepreneurs; new business/startup; entrepreneurial process; foundation decision, business failure; entrepreneurial failure, emotions, fear, anxiety

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# List of Abbreviations

abs.	absolute
C	Celsius
c.f.	confer (compare)
ca.	circa
CbTF	Competence-based Theory of the Firm
CEO	Chief Executive Officer
dpa	Deutsche Presse-Agentur
e.g.	exempli gratia (for example)
esp.	especially
et al.	et alii (and others)
etc.	et cetera
EUR	Euro
Fig.	Figure
GEM	Global Entrepreneurship Monitor
GfK	Gesellschaft für Konsumforschung
HR	Human resources
i.e.	id est (that is)
IAF	Interaktions-Angst Fragebogen
IM	Impression management
IT	Information technology
K	Kelvin
KfW	Kreditanstalt für Wiederaufbau
kg	kilogram
LfA	Landesanstalt für Aufbaufinanzierung
MAS	Manifest Anxiety Scale
MBA	Master of Business Administration
MCS	Marlowe-Crowne-Scale (also SDS)
N	Number/ sample size
n/a	not applicable
NLP	Neuro Linguistic Programming
OEM	Original equipment manufacturer
p	statistical significance
p.	page(s)
p.a.	per annum (per year)
PANAS-X	Positive and Negative Affect Schedule; X stands for 10
QWERTY/ QWERTZ	keyboard layouts (named after the first six keys appearing on the top left letter row of the keyboard)
R&D	Research and development
SD	Social Desirability
SDE	Self-deceptive Enhancement
SDS	Social Desirability Scale (also MCS)
SME	Small and medium enterprises
SPSS	Product name of a statistical software product
SSRN	Social Science Research Network
STAI	Stait Trait Anxiety Inventory
STD	Standard deviation
US(A)	United States (of America)
USD	US Dollar
VHS	Video Home System (video cassette standard)
vs.	versus

# **1. Concept of the research endeavor**

At latest since Schumpeter's (1883-1950) theories, entrepreneurship is widely recognized as a major driver for economic development through innovation. Especially developed countries, like Europe or the United States heavily rely on entrepreneurship and innovation to secure their competitive position (Brixy et al. 2011; European Commission 2012). Not surprising, a critical part in entrepreneurship is the entrepreneur as a human being himself/herself. Generally, innovations are created by the creativity and visions of individuals and are not always the result of a rational, well planned process (Bull & Willard 1993; Kelley et al. 2011; Sánchez López 2012; Bhawe 1994). They are therefore often more of an art than a science. Besides having the abilities to develop ideas and to imagine and envision the future, being human includes having emotions. These can be supportive to develop new ideas, as for example passion, or counterproductive, as for example fear (Welpel et al. 2012; Cardon et al. 2009). It lays in the nature of the human being, to envision chances and risks and evaluate them both with a rational mind and an emotional heart (Gohm & Clore 2002).

However, the emotional and cognitive processes of human beings making entrepreneurial decisions are not well-researched (Welpel et al. 2012). Fear seems to play an important role in taking these decisions. Many potential entrepreneurs refrain from founding a company, because of the fear of failure – especially in Germany (Brixy et al. 2011). This could explain the very low rate (5.6%) of total early-stage entrepreneurial activity in Germany, which ranks the fourth lowest of 23 innovation driven economies (average 14.1%) (Kelley et al. 2011). Moreover, the amount of fear increased in the last years (2009-2011) (Brixy et al. 2011). It is often discussed in research as well as in the entrepreneurial scene that Germany is missing a culture of failure and that failure is often considered a stigma of the failed entrepreneur, rather than an honor of having been venturous (McGrath 1999; Ullrich 2013; Landier 2006; Röttger 2013). Even though, failure seems to be a normal part of entrepreneurship. About 30% of the startups are terminated three years after foundation (Hagen et al. 2011), about 50% after five years (Fritsch et al. 2006; Fritsch & Weyh 2006). The CTO of Amazon, Werner Vogels, points out the differences between the entrepreneurial culture in the US and Europe in an interview: while it happens all the time, that startups go bankrupt, but it is much harder in Western Europe to recover from it (Röttger 2013). It is little surprising, that the statistically high failure probability and the perceived hardness of recovering from a potential failure lead to fear and hence hesitation to start a venture. To encourage entrepreneurship and innovation, it

is therefore essential to understand the potential founders' fears and to take counteracting measures.

This study will investigate the role of fear on entrepreneurial decision-making, especially the decision to found a company. In particular, it will address fear of failure as an assumed root cause of the fear to found a company. To do so, the study will research, what the phenomenon of fear is and what the different aspects and components of fear are. It will detail where fear comes from and how it affects different types of individuals.

## **1.1 Research focus**

The central research object fear will be illuminated from different angles. It will be shown when in the entrepreneurial process fear is relevant, what fear actually is, what the causes for fear are and which entrepreneurs experience fear.

The first part of the study will focus on understanding what the emotion of fear actually is. A starting point to get a better understanding of fear will be a literature review of existing research on emotions in general and fear in particular across different research disciplines. It will then be investigated, whether fear of failure is indeed a major driver for fear of founding a company. Then the abstract emotion of fear will be quantified and decomposed into its components. Doing so helps to find out, whether the amount of fear can be rationally explained or if there are mainly irrational aspects to it. Furthermore, the importance of each single component will be measured and investigated whether it shifts along the entrepreneurial process.

The second part of the study will focus on understanding the entrepreneurial process, guided by the question: "Where is fear relevant?" To get an understanding of the role of fear in the entrepreneurial process, first the process itself, from having a rough business idea, over founding a company to making it successful, has to be illuminated in detail. This is, because fear might be a phenomenon that is linked to different steps in the process, for example when it comes to fear of founding (before the company exists) due to fear of failing (after the company started). Therefore, this will be the starting point of this dissertation. After reviewing existing literature describing processes of starting a venture, a guiding framework, the *Entrepreneurial Funnel* will be derived. The following research will be structured along this framework and its single steps. It will be investigated, how the mechanisms to proceed from

one step to the next work. Potential entrepreneurs, who do not proceed to the next step, represent leaks in the process, reducing the overall number of successfully founded companies. It will be investigated if there are reinforcing mechanisms, for example path dependence, which lead to the subsequent process step or, even the opposite, to drop out of it. Then, the reasons for success and failure in each step in the funnel will be explored. The step that actually leads to the gestation of the business will be in particular focus. It is especially interesting in the entrepreneurial context, as it is the last hurdle before actually starting. The prerequisites are completed: the general willingness to start a venture is there, a business idea is already generated and evaluated, and even steps of planning and setting up the business are often already performed. Not daring to found at this point in time seems to be a huge dissipation of potential and therefore an excellent starting point for future research aiming to foster entrepreneurship. It is likely that fear plays an important role in this process step (Welpel et al. 2011a; Brixey et al. 2011), therefore the emotion of fear will be in strong focus here.

The third part of the study will focus on identifying the underlying causes of fear of failure. It should be found out, which reasons potential entrepreneurs anticipate and hence fear, that would lead their businesses to failure. Once these anticipated reasons are understood, the real failure causes from empirical observation of actual business failures will be assembled. A comparison of the two, the anticipated and actual causes of entrepreneurial failure will then show in a “reality check”, if the nascent entrepreneurs have a realistic anticipation of the most likely pitfalls. It is supposed that there is no perfect match and that there are various potential failure causes, which are feared but do not commonly happen in reality and vice versa, which are not feared *ex ante* but better should be, since they often are accountable for business letdowns in reality.

Finally it will be investigated in depth, if all entrepreneurs generally face the same amount of fear and anticipate the same potential pitfalls, or if there are differences between certain types of entrepreneurs. Such types will be identified and distinguished from each other based on the individual attributes and characteristics of the individual entrepreneur. It is of key interest, how each of these types is performing in the subsequent steps of the entrepreneurial process. It should be found out, if there are certain characteristics of entrepreneurs, which are typical for high fear in the time before foundation and if these are different from the characteristics of entrepreneurs, who typically actually found companies and make them successful. An exemplary question here could be: “Are the entrepreneurs who have the most fear to found the

ones who would actually get successful with their companies, if they overcame their fear and actually founded?”

## **1.2 Research gap**

While there is significant research on entrepreneurial success, studies on entrepreneurial failure are quite rare in general, especially on the causes of entrepreneurial failure (Freiling et al. 2010; Bruno & Leidecker 1988; Cope et al. 2004). Studies dealing with entrepreneurial failure usually lay particular focus on an ex-post view on entrepreneurs who failed with the companies they founded (Hall 1992; Stokes & Blackburn 2001; Bates 1990; Saridakis et al. 2008). However, it is also important to understand the failure reasons potential entrepreneurs face *prior* to founding a company (Stam et al. 2010), especially reasons which hinder them from actually doing so in the first place. Up to now no detailed research was conducted on these failure reasons with particular focus on the role of fear. This time perspective on entrepreneurial activity is highly relevant, as obviously a company can only get successful once it is founded. If certain entrepreneurs fail to found a promising company, its value creation potential is lost. Therefore it is important to understand why potential entrepreneurs refrain from founding companies. To close this research gap, this thesis will take a holistic view, taking the time perspective of entrepreneurial activity into account.

While there are various attempts to sketch the entrepreneurial process (e.g., Bhawe 1994; Sánchez López 2012; Kelley et al. 2011), existing frameworks have two basic gaps, which are closed in the Entrepreneurial Funnel framework. The first one is that most of the existing process diagrams just focus on particular steps of the process and are particularly tailored to them. Therefore it is not easy to expand these structures to other situations or to get a holistic view of entrepreneurial venture creation. The second gap is the lack of quantification attempts of the existing frameworks. Most of them are purely conceptual and do not aim to measure the activity in the process steps. Others, like the framework used by Kelley and colleagues for the Global Entrepreneurship Monitor (Kelley et al. 2011), do measure a snapshot view of the number of potential entrepreneurs in each step of the process, however they do not allow to determine, how likely it is for a potential entrepreneur to proceed to the next funnel step. However, only this figure allows evaluation of the hurdles and churn for potential entrepreneurs and hence derivation of starting points to encourage entrepreneurial activity.

The framework of the Entrepreneurial Funnel will contribute to closing these gaps in the existing structures.

The field of emotions in general and fear in particular in business economics and especially in entrepreneurship research is clearly under-researched. There are hardly any empirical studies in this area. In fact, understanding the role of emotions in the entrepreneurial context is highly relevant and so many scholars call for research in this study area. Friman et al. (1998) calls to study emotions, especially anxiety, and their effect on decision-making and behavior. "Historically, anxiety has been a dominant subject in mainstream psychology but an incidental or even insignificant one in behavior analysis." (Friman et al. 1998). They dedicate an entire study paper to the topic, "[w]hy behavior analysts should study emotion" (Friman et al. 1998). Other scientists emphasize the importance of the research area and call for studies to investigate the role of emotions in entrepreneurial decision-making – especially empirically (e.g., Goss 2008; Cardon et al. 2009; Shepherd 2004). Welp et al. (2012) call for further research to understand and differentiate emotions in more detail and reveal their components and structure. This research study follows these calls and contributes to closing the gaps mentioned above, focusing on the emotion of fear. It contains empirical research and aims to quantify the amount of fear and its composition in a very detailed way. It also derives the influence of fear on entrepreneurial decision-making and behavior. Additionally to the questions what fear is and how it affects entrepreneurial actions, it is not understood yet, what the source of fear is. This study will shed light into this field and identify the causes of fear of foundation and fear of failure.

While there is a vast research field investigating the influence of certain personal characteristics of entrepreneurs on foundation activities (e.g., Markman & Baron 2003; Davidsson & Honig 2003; Lazear 2004; Reynolds 1997; Rotefoss & Kolvereid 2005) and entrepreneurial success (e.g., Freiling et al. 2010; Bates 1990; Brüderl et al. 1992; Jo & Lee 1996; Markman & Baron 2003), there is no research about the influence of those characteristics and personal attributes on the amount of fear a potential entrepreneur faces. This research study will not only help to close this gap, but also aim to illustrate a holistic view of the connection of certain attributes to the feeling of fear, the foundation of a company and the achievement of making it successful.



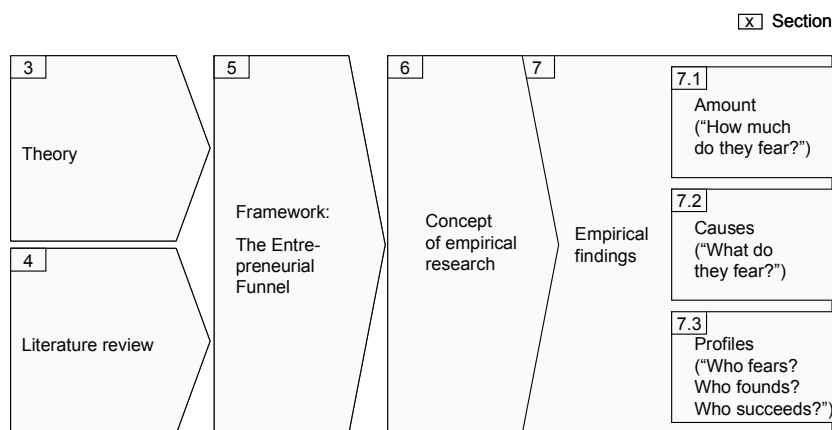
### **1.3 Relevance of research**

The research topic of this study is highly relevant for both academia and practice as it helps to understand entrepreneurial activity and especially entrepreneurial failure in greater depth. For 79% of Germans fear of failure is an obstacle for founding a company. This is one of the highest values in international comparison (Meissner & Welppe 2013). Understanding the matter is a necessary prerequisite for influencing it targeted to improve entrepreneurship in both quantity and quality with the overall aim to foster innovation and entrepreneurship in Germany. The European Commission emphasizes that “Europe needs more new enterprises and more innovation” (European Commission 2012, p.21). To do so, first of all the process of entrepreneurial activity has to be understood to identify leaks in the whole pipeline and to understand what kind of potential founders are susceptible to drop out through one of those leaks. It could for example be, that self-regulation mechanisms are in place here which cause potential founders, who would not have sufficient skills to run company, to drop out of the process before even founding a company. Vice versa, it could be that potential entrepreneurs who have a promising profile to build a successful company drop out of the funnel without even starting the business, because of fear or other reasons. To understand these mechanisms lays the ground for interventions from policy makers, academic educators, etc. to improve the quality of entrepreneurs founding companies and hence the quality of the businesses themselves and to reduce entrepreneurial failure. It should be the aim for influencers of environmental conditions to encourage promising entrepreneurs to move through the process and to actually found companies and maybe even to discourage others who are not capable of making a business successful. Therefore, it is essential to investigate how the mechanisms to move from one step of the process to the next work and what the natural path through the process is - that means, which forces are in place keeping potential entrepreneurs in the funnel or driving them out. The process step before actually founding the company plays a crucial role here, as it is the last filter before the amounts of investments, be it money or time, are getting really significant. Especially for potential entrepreneurs with promising profiles, it would be a huge waste of economic potential not to take this hurdle. A major component of this hurdle is assumed to be fear (Brixey et al. 2011; Welppe et al. 2011a). To influence the rate of entrepreneurs overcoming this hurdle, it is important to understand if fear really plays a major role and is actually capable of hindering promising foundations. To understand, if such a prevented entrepreneur would have been promising, it is important to research which entrepreneurs have a profile qualifying them to build a successful company and if these are

those, who refrain from founding because of fear. Furthermore, it is important to understand what exactly people fear and if the sources of fear are reasonable or overrated, so that the causes of fear can be specifically addressed by politics and academia.

## 1.4 Structure of research

The basement of the structure of this dissertation will be an examination of relevant entrepreneurial theories. A literature review will then take a closer look at entrepreneurial success and failure, with specific focus on failure factors, and the role of emotions in general and fear in particular. Building on the theoretical basis and the findings from prior research, the entrepreneurial activity over time will be studied and a framework of the entrepreneurial process will be developed. The framework will help to concept the empirical study according to the research question about the role fear of entrepreneurial failure before and after foundation. This phase-differentiated approach will focus on the time before the entrepreneur actually founds a company, so the “pre-seed” phase. The research question will be addressed from three different viewpoints, in one section of the empirical findings each, to get a holistic picture. The first of these sections will focus on the amount of fear potential entrepreneurs experience and the second will explore the causes of this fear. The third section will investigate the characteristics of the entrepreneurs who experience fear and compare these characteristics of those of entrepreneurs who actually found companies and who succeed with those companies, to identify similarities and differences, showing the consequences of fear before foundation. In short, it will be investigated, who fears, how much and why. The final chapter will give recommendations to apply the findings of this study and give an outlook for future research.



**Fig. 1:** Structure of this research study

## **2. Methodology and cognitive approach of the research endeavor**

Research should choose philosophy of science as an orientation framework for building and testing models and insights (Kornmeier 2007; Chmielewicz 1994). This chapter will illustrate which view is taken in this research study. First, the choice of the epistemological concept will be presented. The theoretical concepts of Logical Empiricism (c.f. e.g., Schlick 1918) versus Critical Rationalism (Popper 2005; 1959) and Radical Constructivism (Glaserfeld 1997; 1987) versus Naïve and Scientific Realism (c.f. e.g., Hartmann 1966), as well as Pattern Predictions (Hayek 2007; 1964) will be briefly portrayed and the choice of approaches for this study will be selected. Then, the applied paradigm will be presented, after portraying the paradigms Radical Humanist, Radical Structuralist, Interpretive and Functionalist (Burrell & Morgan 1979). Finally the unit of analysis focused in this study will be illustrated.

### **2.1 Epistemological approach**

According to Popper (2005; 1959), the aim of science is to find satisfying explanations to everything that we think it needs one. This aim structures the research activities. As a first thing, the research area has to be described precisely. Then boundary conditions, determining factors and hypotheses, which help to describe the research are to be identified and transferred into a theoretical model that describes the complex reality. In a last step, this model has to be proven with empirical tests. Building on this approach, Popper developed the fundamental orientation system of the *Critical Rationalism*. It is based on the falsification principle, which states, that empirical proof can never lead to ultimate verification of a hypothesis but only to potential falsification and hence suggests a deductive approach and preliminary validity. While the falsification of a hypothesis, for example through a refuting case, is ultimate, the verification generally can only be preliminary. It can be regarded preliminarily valid, as long as no falsification could be achieved. Therefore, researchers are called to formulate their hypotheses falsifiable (Popper 2005; 1959; Chmielewicz 1994; Kornmeier 2007). The Critical Rationalism in social sciences and economics is challenged by scientists for various reasons (Luhmann 1990; Deshpande 1983; Kubicek 1975). Critics argue, that in reality it is not possible to certainly falsify a hypothesis without any doubt due to the vast number of influence factors (Deshpande 1983; Kubicek 1975; Vollhardt 2007). Others criticize that too

many exciting research findings are seen as established, even though they are just out of the printing press (Luhmann 1990).

An opposing view to Critical Rationalism is represented by *Logical Empiricism* (c.f. e.g., Schlick 1918; Kornmeier 2007). Empiricism generally bases on the thought that the perception and experience is the primary source of human knowledge. Scientific theories summarize the insights from these experiences. Induction gains a particular importance in this field. According to Empiricism, researchers should aim to find general principles from a limited number of observations (Kornmeier 2007). This pure form of Empiricism is widely declined, as critics argue, that any number of singular observations can never derive and justify a generally valid principle (Chmielewicz 1994; Kornmeier 2007). An enhancement of the general view leads to the concept of *Logical Empiricism* (also Logical Positivism) (c.f. e.g., Schlick 1918 and other members of the “Vienna Circle”/“Wiener Kreis”; Kornmeier 2007). Here, additionally to the importance of empirical observations, the role of human consciousness in structuring observations and deriving causalities and rules is included (Kornmeier 2007).

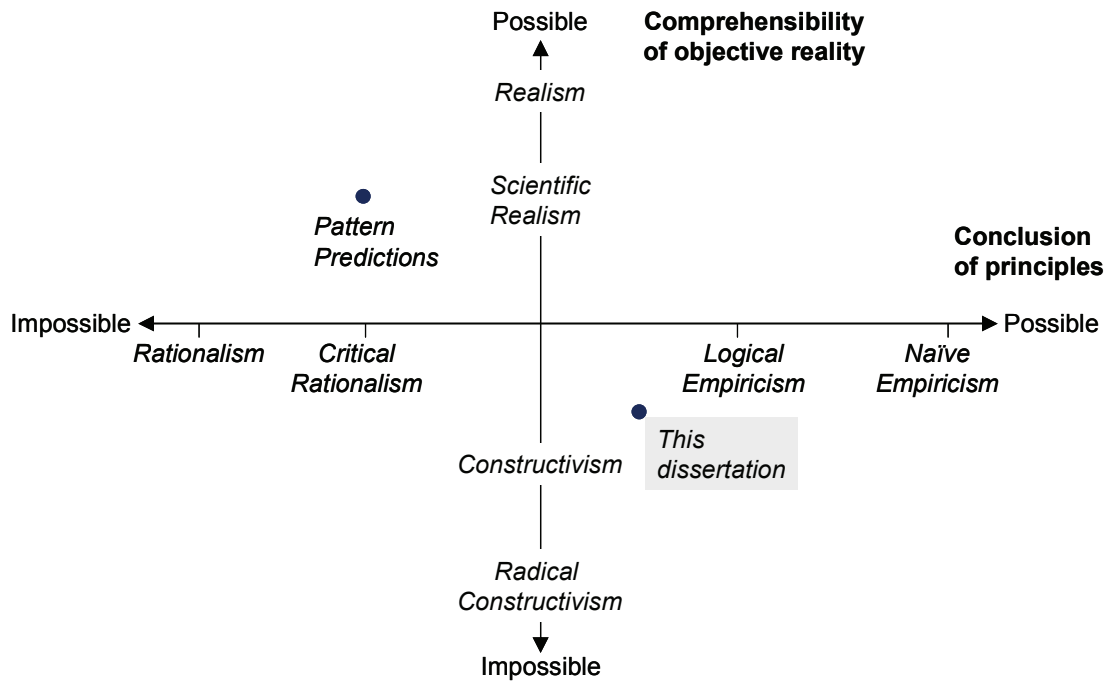
Another dimension of epistemological approaches deals with the question of the existence of an objective reality (Kornmeier 2007). Supporters of the school of thought of *Radical Constructivism* (Glaserfeld 1997; 1987) reject the possibility of formulating universal regularities strictly in general. Supporters of this view argue that perception is always just a subjective construct of senses and cognitive processing, built in consciousness and can never match reality. Hence, every perception and therefore every aspect of reality is completely subjective. Knowledge can therefore not be seen as a metaphysic concept describing reality, but instead solely as a practical tool, that has to be judged by its usefulness (Glaserfeld 1997; 1987; Luhmann 1990; Kornmeier 2007; Chmielewicz 1994). Developed theories are rather useful fictions than reality (Kornmeier 2007).

The concept of *Realism* takes an opposing view and argues that an objective reality does exist and can be, at least in major parts, recognized through perception and thought (Kornmeier 2007). In its most radical form, the *Naïve Realism*, distortion of perception is generally refused and instead it is assumed that reality is just like it appears to the observer (Bauer 2010). A more realistic view is represented by *Scientific* or *Critical Realism* (c.f. e.g., Hartmann 1966). Here, it is assumed that an objective reality does indeed exist, however it is usually not directly observable for human perception. Researchers can nevertheless make it

accessible to them by direct or indirect perception and cognitive processing (Hartmann 1966). The concept of Scientific Realism suggests that testing a hypothesis in reality can be achieved, even though the results do not imply universal truth. However, they can be seen as a hint to the existence of a certain connection and through repetition of empirical evidence, it allows a step-by-step approximation to the truth. However, the absolutely certain truth cannot be reached (Hunt 1994; Greenwood 1989; Leplin 1981; Kornmeier 2007; Vollhardt 2007).

The epistemological concepts described above are extreme points of views and border a spectrum of approaches in between. Such an approach is the concept of pattern predictions (Hayek 2007; 1964). It represents a rather pragmatic view, taking the realistic boundaries of complex phenomena into account. Hayek argues that the source of scientific inquiry is impelled by wonder and by need of mankind. He considers wonder as a driver as more fruitful, because it implies an already underlying question, which helps to structure research in a complex and chaotic environment. Due to the degrees of complexity and incomplete data, precise explanations, especially quantitative predictions are to be considered methodologically problematic. Scientific research should therefore rather focus on finding general principles of patterns to explain causal chains (Hayek 1964; Hayek 2007; Paqué 1990).

This research study bases on a set of hypotheses aiming for preliminary validation and could hence principally follow the epistemological approach of Popper's Critical Rationalism. However, the research on fear of entrepreneurial failure and the role of fear is not yet deeply understood. It is a complex matter, as it includes emotions, as a subjective explanandum. Due to this, this research endeavor will require – at least in parts – an inductive approach, which will be based on empirical observations. Therefore, this study will apply the thoughts of logical empiricism, while being aware of the criticism of rationalism, that the generated hypotheses can only be preliminarily valid and have to withstand attempts of falsification. The orientation of this work will tend towards Constructivism, rather than Scientific Realism, mainly due to the subjectivity of the explanandum, and therefore the generated knowledge will be seen rather as a useful practical tool than objective reality. However, this study will not take a radical view according to this orientation either.



**Fig. 2:** Categorization of dissertation in (simplified) illustration of major epistemological views

## 2.2 Sociological Paradigm

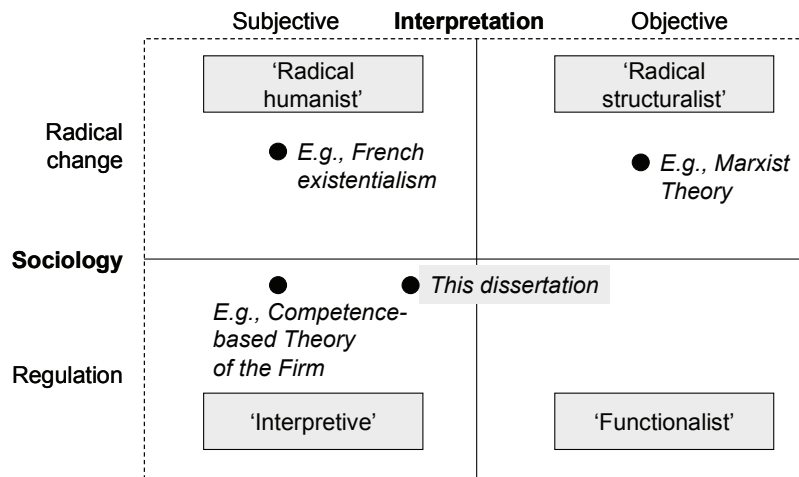
The development of social theories is based on different underlying paradigms, determining the view on the world. Burrell and Morgan (1979) created a taxonomy of organization theories, that is widely used to classify the underlying paradigms in today's research. They categorize the different clusters into a 2x2 matrix with two dimensions. The first dimension differentiates between a subjective or objective interpretation view. Ontologically, nominalism reflects a position of subjectivism, whereas realism reflects objectivism (Burrell & Morgan 1979; Freiling et al. 2008). The second contrasts the sociological dimension of regulation and radical change. The earlier assumes organizational structures, which determine or at least influence an individual's behavior. The latter sees society in a constant situation of change and crisis (Burrell & Morgan 1979). According to these two dimensions, four diametral paradigms can be derived. The view of the *Functionalist* is defined by a subjective view in a regulated society. It is a common paradigm used as well in academia as in business, especially in business studies and organization theories (Burrell & Morgan 1979). Supporters claim, that there is a science of society, which can be investigated just like laws in natural sciences, by applying "models and methods of natural sciences to study human affairs" (Burrell & Morgan 1979). Scientific methods like empirical observations and derivation of causalities are accepted as legitimate scientific approaches. The paradigm assumes rational observers, who

can draw the same objective conclusions of observed circumstances. The social context is seen as generally regulated. Change can happen, but the subjects of investigation are acting within and hence are restricted by a certain organization and environment and a given historicity of prior events and decisions. The *Interpretive* paradigm bases on a subjective interpretation in a regulated society. It suggests that observations and expressions are subjective, but however through exchange, a shared reality can be created by the human mind (Burrell & Morgan 1979). "It seeks explanation within the realm of individual consciousness and subjectivity" (Burrell & Morgan 1979) and views knowledge to come from human experience. In research, the observer has to be seen both as subject and object of investigation (Burrell & Morgan 1979). Subjectivism implies certain methodological consequences, for example the tendency towards qualitative research, to capture the full nature and characteristics of the investigated entity (Freiling et al. 2008). The sociology is generally characterized as regulated, just like in the functionalist's view (Burrell & Morgan 1979), however uncertainty and innovation can be included in the paradigm, to enable the view that individuals or firms can shape their environment to a certain extent (Freiling 2009b). The paradigm of the *Radical Structuralist* goes back to Karl Marx (1818-1883) and follows an objective view, just like the functionalist does, but with the difference that society is seen as not stable and radical changes are possible. It is committed to concepts of conflict, emancipation, domination, etc. (Burrell & Morgan 1979). In the context of entrepreneurship, innovation can be seen as a source of change and potentially radical disruption of the established social order. The *Radical Humanist* paradigm fosters the subjective interpretation in sociology of radical change. It focuses on human consciousness and regards visions and ideas as source of change. This school of thought goes back to the roots of Hegel (1770-1831) and Kant (1724-1804) (Burrell & Morgan 1979).

It is not easy to sharply assign this research study to a paradigm cluster, as it takes a very mild view in both of the two dimensions.

It falls into the category of the interpretive paradigm in a mild form. It accepts the role of subjective matters, like feelings and emotions, and builds on theories from subjective interpretations, like the Competence-based Theory of the Firm. However, the interpretation takes the objective approach into account and applies quantitative research methods and principles of natural sciences. Therefore, its position is subjective, but close to the border of objectivism.

According to the sociology, the study takes a mild position as well. It generally takes the view of a regulated society, but however accepts entrepreneurship as a source of change. Nevertheless, the entrepreneurial activity takes place in an established order as a basis, which sets certain restrictions and conditions. Individuals and firms are strongly influenced by their environmental context and historicity.



**Fig. 3:** Categorization of dissertation in overview of major sociological paradigms (based on Burrell & Morgan 1979)

## 2.3 Unit of analysis

The focus of this research is to identify which reasons hinder potential entrepreneurs from founding companies and which role the fear of failure and the perceived causes for this failure play as a reason. Goals of this research endeavor are to describe which individual characteristics of entrepreneurs are related to higher or lower perception of fear of failure, to the probability of actually founding a company and finally to making it successful. Therefore, this study mainly takes a business rather than an economics perspective. The focus within the area of business studies will be strongly on the individual person. Objective characteristics of individuals, like their education, as well as subjective characteristics, like their emotional state, will be investigated. Also the influence on the gestation and success of a venture will be examined from the perspective of the individual founder. When it comes to anticipated failure causes and the comparison to actual failure causes of companies, the study will employ a higher level of the research subject and will focus on the organization. Finally the study will conclude in a macro-economic outlook, reflecting on the generated insights, and a discussion of their application by policymakers.



### 3. Theoretical foundation of the research endeavor

This research endeavor will be based on a selection of scientific theories, which will be introduced in the following chapter. First, the selection and commensurability of theories to be applied will be discussed. Then, the different theories and their application on this specific research endeavor will be presented.

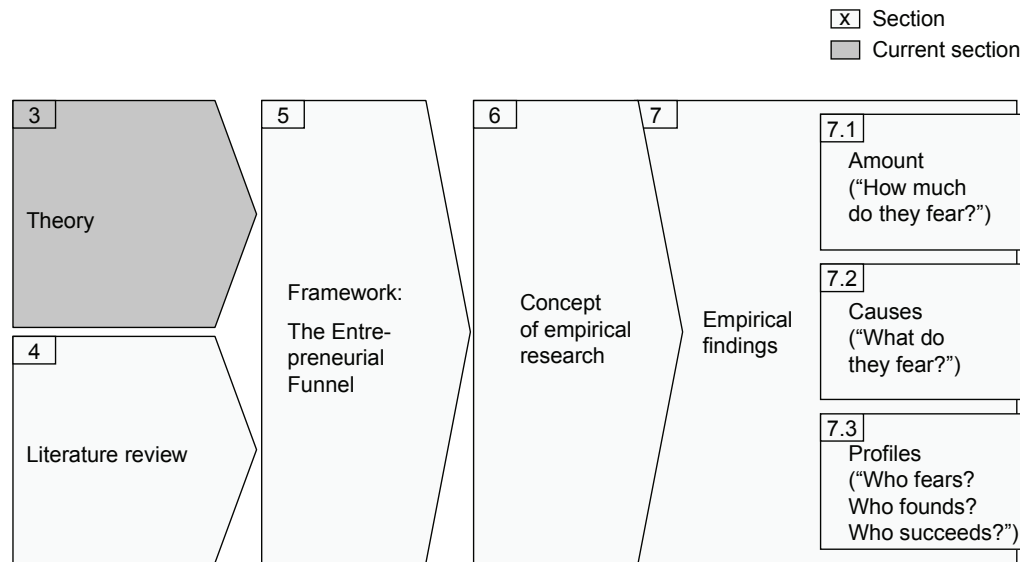


Fig. 4: Structure of this research study with highlighted current section

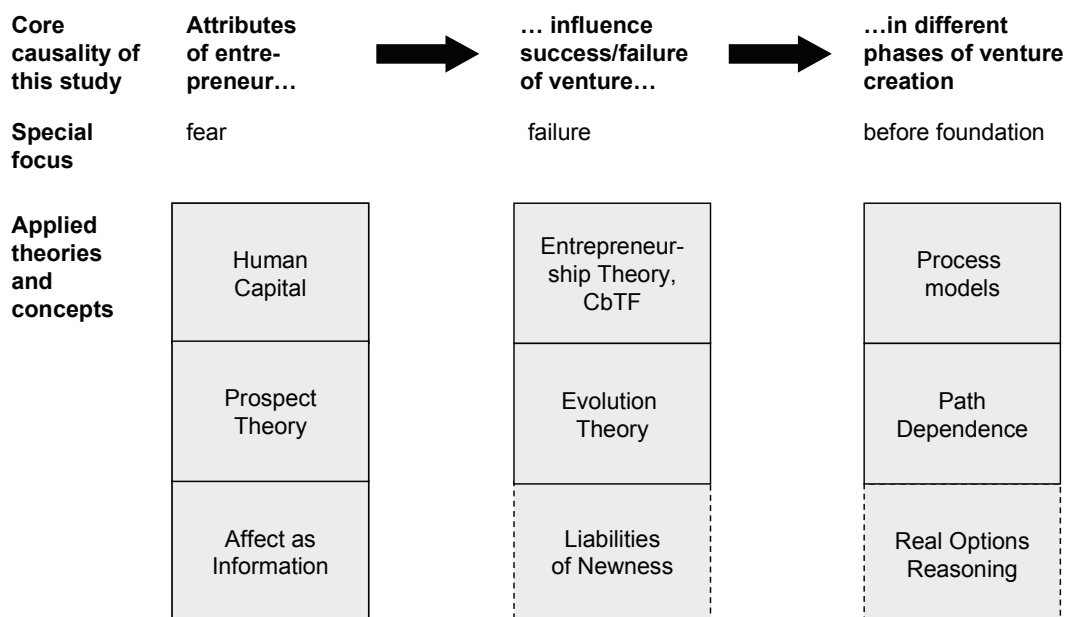
#### 3.1 Selection and commensurability of theories

According to Kerlinger (1973) a theory is defined as “a set of interrelated constructs (concepts), definitions, and propositions that present a systematic view of phenomena by specifying relations among variables, with the purpose of explaining and predicting the phenomena” (Kerlinger 1973, p.9). The complex research area on factors of entrepreneurial success and failure is not easy to capture with theories and accordingly there are rarely any holistic theories which can be easily applied to this topic (Fallgatter 2005). Research studies with the attempt to apply aspects of entrepreneurship theory often failed to explain relations among variables (Bull & Willard 1993). Due to this early state of research, empirical approaches which are initially not theory-guided are required (Fallgatter 2005). Therefore, there is no one single guiding theory, which this whole study follows, but instead different aspects of entrepreneurship theories are facilitated as theoretical frameworks.

### 3.2 Introduction of relevant theories and their application

The selection of appropriate theories to investigate the research questions is based on the research content and scientific theory (Lierow 2006). Before investigating the adequacy from the perspective of scientific theory, it has to be evaluated, if the theory is capable of describing the required content and deducting a logical argument to explain the causalities of the research question (Lierow 2006).

As presented in chapter 1, the main research question is how the attributes of the entrepreneur (especially fear) influence the performance of a venture (especially failure) in the different phases of venture creation (especially before foundation). According to this research question, theories and concepts have been selected which can contribute content-wise to this research question. The following sections will summarize the chosen theories and concepts in detail. Before that, this section will give a brief overview of them to illustrate why they were selected.



**Fig. 5:** Selection of theories and concepts as foundation for the research endeavour

According to the attributes of the entrepreneur, the selected theories can provide the following (simplified) core causalities:

- Human Capital Theory: Investments in education and experience of an individual can increase his/her productivity and hence the performance of his/her organization (Werner 2011).

- Prospect Theory: Certain structural cognitive biases influence decision-making and hence actions of an individual (Kahneman & Tversky 1979).
- Affect as Information: Emotions influence decision-making and hence actions of an individual (Gohm & Clore 2002; Clore et al. 2001).

The three theories on the influence of the individual attributes have been selected, because they provide different viewpoints according to the rationality of decision-making and action. Human Capital is a rather rational view based on certain skills (Werner 2011), Prospect Theory adds aspects of certain structural cognitive biases (Kahneman & Tversky 1979) and Affect as Information adds the quite irrational aspects of emotions (Gohm & Clore 2002; Clore et al. 2001). Fear is in focus of this study, however it is important to distinguish this emotional effect from other effects and furthermore build connections between other attributes of the individual and fear, to understand which factors can cause individuals to be particularly fearful or fearless.

According to the question of explaining success or failure of ventures, Entrepreneurship Theory and Competence-based Theory of the Firm (CbTF) (Freiling et al. 2006) were applied together with Evolution Theory (Campbell 1965; Staber 2002). Aspects of the discussion on Liabilities of Newness (Kale & Ardit 1998) were included as delimitation.

To explain success and failure of ventures, the selected theories can provide the following (simplified) core causalities:

- Entrepreneurship Theory, Competence-based Theory of the Firm (CbTF): Competences of the organization (esp. according to innovation, coordination, arbitrage and risk management) cause competitiveness and hence firm performance (Freiling et al. 2006; Freiling 2008).
- Evolution Theory: Processes of variation, selection and retention cause organizational survival (Campbell 1965; Staber 2002).
- Liabilities of Newness: Certain attributes (“liabilities”) of new companies can increase the probability of failure (Stinchcombe 1965; Brüderl & Schüssler 1990; Henderson 1999; Thornhill & Amit 2003).

The concept of Liabilities of Newness was rather used to build on the findings which particular attributes of new ventures can lead to failure. The main backing for the causal reasoning of this research study is Entrepreneurship Theory, CbTF (Freiling et al. 2006) and

Evolution Theory (Campbell 1965; Staber 2002). As will be shown in section 3.2.3, both theories can be fruitfully aligned (Hodgson 1998).

Further concepts were regarded to take the time perspective of the entrepreneurial venture creation process into account. First of all, existing process models of venture creation models (Kelley et al. 2011; Sánchez López 2012; Bhave 1994) were used as a basis to develop a structuring framework for this research (c.f. the Entrepreneurial Funnel, chapter 5). The research on Path Dependence (David 1985; David 2001; Arthur 1989; Arthur 1990; Stack & Gartland 2003; Sydow et al. 2009) was used as concept to investigate general forces supporting success or failure along the venture creation process. The ideas of Real Options Reasoning (McGrath 1999) were used as an explanation why individuals might abandon their current venture and turn to other more promising options.

After the content-wise evaluation of potentially applicable theories, an evaluation from the perspective of scientific theory should ensure that the selected theories allow answering the research question with coherent reasoning (Lierow 2006, p.19). If multiple theories should be combined, it has to be assured that the central terms and conditions are comparable from a viewpoint of the applied cognitive approach (Kornmeier 2007; Chmielewicz 1994). The respective employed epistemological approach, sociological paradigm and unit of analyses are highlighted in chapter 2.

The following sections will introduce the applied theories in more detail. The description will start with theories explaining entrepreneurship and organizational performance to get an overall understanding of the matter.

### **3.2.1 Entrepreneurship Theory and definition of central terms**

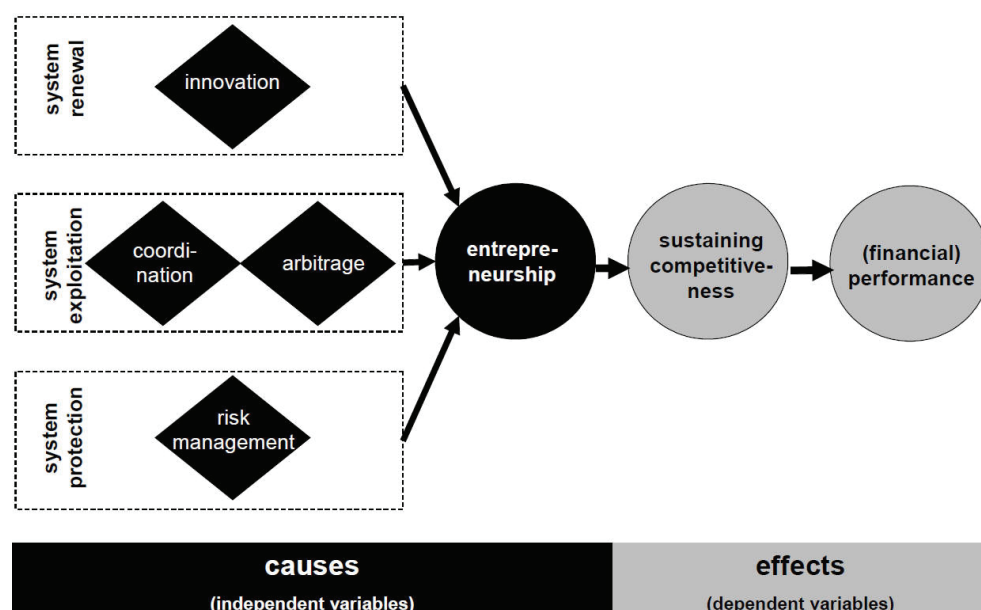
The efforts to develop entrepreneurship theories have an over 200 years long history in business and economics research (Bull & Willard 1993; Freiling et al. 2010). However, “no generally accepted theory of entrepreneurs has emerged” (Bull & Willard 1993). According to Bull and Willard (1993) existing theoretical research in the area can be broadly grouped into five categories: (1) the definition of the term “entrepreneur” (which is not a theory), (2) the study of psychological traits of entrepreneurs, (3) success factors for entrepreneurial activity and new ventures, (4) the formation of new ventures and (5) the influence of environmental factors. (1) There is a vast amount of conceptual research contributions about the definition of the term “entrepreneur”. Bull & Willard (1993) present

an overview of the history of the definition of the term and provide sources for further overviews of this research field. In this work, a slightly constricted adaptation of the rather traditional definition of the term “entrepreneur” according to Schumpeter (1934) is used. According to the original definition, an entrepreneur is an individual who carries out new combinations, causing discontinuity. Following this definition, the entrepreneur does not necessarily have to be a business founder, he/she could also be a sufficiently innovative manager in a corporation (Schumpeter 1934; Bull & Willard 1993). Since a major focus of this research study is the investigation of founding activities and the connected emotional phenomena of fear, this definition was used in a constricted adaptation and includes only those entrepreneurs who are founders of businesses or self-employed. (2) The traits approach focuses on the entrepreneur as an individual and tries to explain and forecast entrepreneurial behavior based on his/her psychological traits. The approach basically deals with the question who the entrepreneurs are (Bull & Willard 1993). This aspect is central in this study as well, as fear is a highly subjective perception of an individual. While the traditional traits approach tries to find connections between individual attributes and characteristics of entrepreneurs and entrepreneurial activity, this study will investigate the connection to fear. However, there are also critics of this research branch. Low and MacMillan (1988) suggest that the typical entrepreneur cannot be profiled, since “[t]here is no “typical” entrepreneur” (Low & MacMillan 1988). This criticism bases on psychological attributes of founders. When other attributes, like socio-demographics are included, various empirical studies support the assumption that there are indeed differences between entrepreneurs and non-entrepreneurs (e.g., Baron 2004; Lazear 2004; Reynolds 1997; Davidsson & Honig 2003; Rotefoss & Kolvereid 2005). (3) Theories about success strategies aim to explain entrepreneurial success based on causal relationships with various areas. This research study will partly take this perspective as well and investigate connections between attributes of the individual entrepreneur and - besides his/her fear - his/her chances to succeed with his/her venture, once founded. (4) Theories on the formation of new ventures are applied in the chapter on the Entrepreneurial Funnel, a framework of the entrepreneurial process, which was developed as a guiding structure for this work. (5) The influence of environmental factors does not represent the major focus of this study. However, in the last chapter the study will give recommendations to shape the environmental context to foster entrepreneurship, based on the research findings.

According to the person of the entrepreneur, two dimensions are of highest relevance, when developing theories. One is, to understand, explain and predict (a) what entrepreneur has to

do, to found a company and make it successful. The other is, (b) what an individual has to *be* like, to become an entrepreneur or to become successful with his/her entrepreneurial activity.

(a) An entrepreneur has to fulfill various business functions to become competitive and hence successful. Freiling (2008) describes this research area and gives an overview of existing studies. He summarizes four functions with highest relevance for entrepreneurship, according to the explanandum venture competitiveness and survivability: innovation, coordination, market making (arbitrage) and risk management (Freiling 2008). Since the existing research theories are heterogeneous, according to the included functions, Freiling applies a multi-functional approach. It bases on the process theory of the Austrian School (c.f. e.g., Von Mises 1949), with the key assumption that information in the market is incomplete, asymmetrical and uncertain. Therefore, the decisions of the market players base on expectations and are adapted based on trial and error. Consequently, the outcomes of their decisions often deviate from their expectations, which leads to adapted expectations for the subsequent decisions (Freiling 2008).



**Fig. 6:** The Multi-Functional Approach and its Cause and Effect Structures (Freiling 2008, p.16)

Freiling (2008) categorizes the four most relevant functions in to the areas system protection, exploitation and renewal. System protection refers to ensuring the exploitation options of the venture for the future. Basically every change can potentially be a threat, solely because of increased uncertainty. Changes could come from outside, for example changed market conditions, or from inside the organization, for example through innovations. The system protection function reacts on these changes and adapts the organization accordingly. The

category system exploitation takes an internal perspective and includes the functions, which assure effective and efficient value capturing of entrepreneurial processes – mainly the coordination function and the arbitrage function. Coordination takes an internal perspective and refers to the activation, motivation, allocation and use of all assets and resources available to the organization, with a special focus on human resources. The arbitrage function is understood according to Kirzner (1973) and takes an external perspective. It refers to identifying opportunities and selling profitable products and services. The category system renewal refers to the innovation function, according to Schumpeter (1934). It includes major improvements of the organization, for example the invention or improvement of products, processes or structures. Radical renewals can result in “creative destruction” (Schumpeter 1934), where old systems become obsolete and have to make room for, or adapt to new innovations. The system renewal and system protection areas can require mutual actions in the organization and therefore have to be closely aligned. Innovations can for example be used for system renewal or expansion but also to protect the current business, because without innovation, others might catch up and endanger the competitive position of the company. Since entrepreneurial performance results from a combination of all the functions described above, each and every one of them is critical for success (Freiling 2008). Even though, an organization is strong in one function, it can still fail due to shortfalls in another. An example could be the current situation of Blackberry, which had a strong exploitation system, but missed out on new innovations, particularly the boom of touchscreen smartphones.

The presented above primarily focused on an organization, rather than an individual. In the entrepreneurial context, at least in the very beginning, the line between the organization and the founders is blurred. Usually, at the moment of foundation, all the organization consists of are the founders. Therefore, the theory an execution of the critical entrepreneurial functions can be applied on individuals or founder teams as well and can therefore be used in this study. Additionally, further theories focusing primarily on the individual can be used to complement the view presented above.

(b) Rather than the execution of the functions (what an entrepreneur or organization *does*) other entrepreneurship theories focus on who an entrepreneur *is* and try to define founders by their individual attributes. According to Bull and Willard (1993), an entrepreneur, defined as a person, who “will carry out a new combination, causing discontinuity” (Bull & Willard 1993), does that under four conditions: (1) task-related motivation, (2) expertise, (3) expectation of personal gain and (4) a supportive environment. The entrepreneur is hence defined by and



distinguished from non-entrepreneurs by his/her motivation to achieve a certain vision. This motivation is supported by an expectation of personal gains, be it in the form of economic or psychic benefits. He/she also has the necessary know-how and expertise to achieve his/her vision, or at least the confidence to acquire further essential know-how. His/her environmental situation can be critical for the implementation of his/her enterprise. A supportive environment can increase the comfort or reduce the discomfort of a foundation. This support can be in various different ways. It could be dissatisfaction with the previous occupation, which makes the idea of becoming self-employed more appealing, it could be the presence of role models in the entrepreneurial community, or it could be new technological developments which are opening up new attractive opportunities, just to name a few examples (Bull & Willard 1993).

### 3.2.2 Competence-based Theory of the Firm (CbTF)

There are three basic approaches in resource- and competence-based research: the knowledge-based, the resource-based, and the competence-based view (Freiling et al. 2006). Freiling et al. (2006) give a good overview of the temporal development in their research paper. The Competence-based Theory of the Firm (CbTF) is built on the competence-based view, but also includes resource-based aspects.

asset	homogeneous external or internal factors, serving the firm as input for value-added processes
resource	result of successful asset refinement processes, producing sustainable heterogeneity of the owning firm in competition and enabling the firm to withstand competitive forces
competence	organizational, repeatable, learning-based and therefore non-random ability to sustain the coordinated deployment of assets and resources enabling the firm to reach and defend the state of competitiveness and to achieve the goals

**Fig. 7:** Definitions of central terms according to the Competence-based Theory of the Firm (Freiling 2004, p.30)

The *knowledge-based view* is focused on the knowledge within a firm. Its core research area is the handling of data, information and knowledge. Approaches from learning theory are applied as foundation (Freiling et al. 2006).

The core assumption of the *resource-based view* is “that specialised, scarce and valuable resources/services yield rents” (Foss 1998). The resource-based view was criticized in literature, besides others, because of its basic objections. A part of the research community



does not find the approach fruitful, as it “does not presently appear to meet the empirical content criterion required of theoretical systems” (Priem & Butler 2001). Freiling (2008) argues that the resource-based view has to be solidly grounded in the philosophy of science to resolve its problems (Freiling et al. 2008).

The *competence-based view* takes another perspective. It explains firm performance by the existence of certain competences of teams (or individuals) within the firm. These competences can be made of skills or knowledge and, even though they are often implicitly carried by individuals, are “in some way fostered and maintained by that organization” (Hodgson 1998). Hodgson (1998) sees the roots of this view to go back to Adam Smith (1723-1790) and Karl Marx (1818-1883), as they emphasized the importance of the division and management of labor and according skill building for the performance of organizations. The competence-based view does not deny the influence of resources on performance, but sees the key difference to the resource-based view in “the chain of causality” (Freiling 2004). The resource-based view sees the superior resources as the sufficient root cause of firm performance. The competence-based view however, takes into account, that “[t]he firm itself has to be in a position to make use of these resources in a goal- and market-oriented way. This is only possible in case of available action-related competences” (Freiling 2004). The competence-based view sees firms as open systems, which are involved in exchange processes with their environment, for example customers, suppliers, technologies, the labor market, etc. (Sanchez 2004; Heene & Sanchez 1997). These constant interactions require certain competences. Sanchez (2004) distinguishes five modes of competences, which are required and associated to firm performance: the strategic logic, management processes, intangible and tangible assets, operations and product offers.

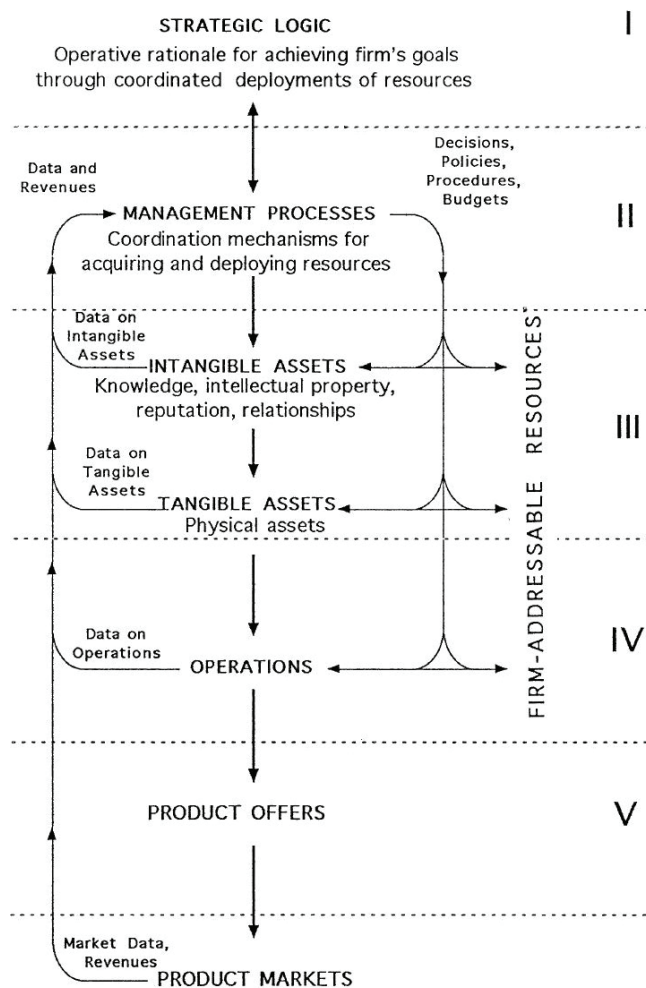


Fig. 8: The Firm as an Open System (competence modes I – V labeled) (Sanchez 2004, p.520)

The top mode, which controls the entire system, is the strategic logic, which is also often referred to as the dominant logic (Prahalad & Bettis 1986). It refers to a certain mind set, which provides the strategic direction and is the base for decision in the organization (Prahalad & Bettis 1986). It represents a view of the world and the business concept in all areas of the venture, from used technologies, over development and production to advertising and distribution. It defines “how things are done” in a company and determines how management makes critical resource allocation and human resource decisions. The Dominant Logic also includes the problem solving and decision-making behavior in the organization. It is an intangible force that is stored in a cognitive map and a set of schemas and is operationalized by the use of administrative tools and processes, like planning and budgeting, setting organizational and incentive structures and controlling them. Of major importance is the selection of key employees, who think alike. Especially for top management the Dominant Logic is of high importance. It is very difficult for managers, when a new Dominant Logic

has to be learned, for example because the manager switches to a new company, or if an existing logic has to be changed, for example due to the acquisition of a new business (Prahalad & Bettis 1986). In the entrepreneurial context the Dominant Logic is an intangible resource, which has to be built from scratch for a new company. This requires a certain skillset of the entrepreneur and it also creates pitfalls, if it is not achieved to install a suitable dominant logic. The Dominant Logic is usually based on previously learned mental models. However it has to be flexible enough to question the hitherto existing bases of decision-making and adapt to new contexts and changed environmental conditions. This is required to contribute to fulfilling both the renewal and the risk management function, as described in entrepreneurship theory (Heene & Sanchez 1997). The strategic logic gets operationalized through managing processes in the organization. It fulfills an internal coordination function, which is similar to the exploitative functions in entrepreneurship theory (Freiling et al. 2010).

The further modes are in constant exchange with the firm-addressable resources in the environment. To execute the according functions sufficiently, a certain resource endowment, especially knowledge, is required. However, usually this resource endowment is in a constant fluctuation and critical bottlenecks have to be constantly overcome, either by internal adaptations or acquisition of external resources (Heene & Sanchez 1997; Freiling et al. 2010). This constant adaptation of the resource endowment is critical for success. The extent to which an organization manages to adjust its resource equipment is referred to as its “absorptive capacity” (Cohen & Levinthal 1990) and is linked to economic performance. The recognition, integration and application of external knowledge play a key role here (Cohen & Levinthal 1990), but it can be other tangible or intangible assets as well, which need to be acquired (Freiling et al. 2010). If an organization fails to close the critical gaps in its resource endowment, it might not be able to sufficiently execute functions and hence fail (Freiling et al. 2010). These aspects are important for this study, as they can help to understand the root causes of entrepreneurial failure and differentiate between internal and external causes. Insufficient capital equipment could for example not only be seen as an external cause of failure, but instead as a lack of internal capabilities to acquire sufficient funding.

The *Competence-based Theory of the Firm (CbTF)* represents the competence-based view described above, but takes the role of resources into account. It is “[e]xploiting the potential and tackling the problems of resource-based and competence-based research” (Freiling et al. 2008). The required constant adaptation to new resource endowment necessities, stresses “the role of entrepreneurship, dynamic capabilities and competences” (Freiling et al. 2008). While

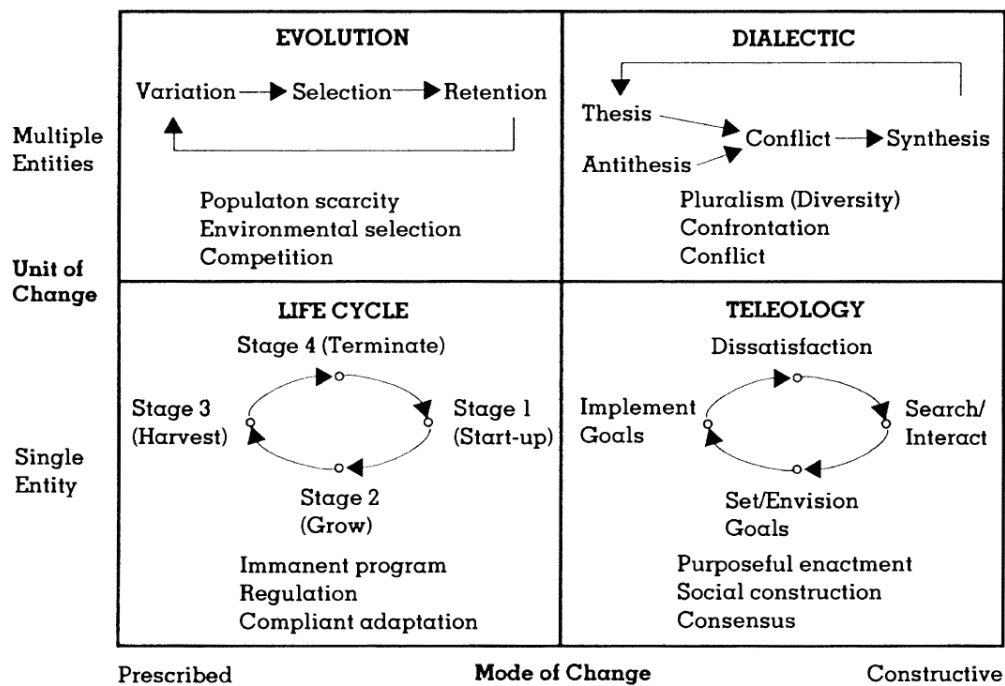
the competence-based view aims to explain competitive advantage, the Competence-based Theory of the Firm explains survival of the organization and the nature of the firm (Freiling et al. 2008).

Freiling and colleagues (2006) define six fundamentals for the hard core (paradigm) of the Competence-based Theory of the Firm (CbTF). The first is methodological individualism, which sees single actors as decision makers. The second one is subjectivism, which assumes different knowledge, motivation and abilities of the single actors. The third stresses the importance of time and takes the determination by historic events and potentially path dependence into account. The fourth fundamental condition is radical uncertainty in the actions of the actors. The fifth assumes the “Homo Agens” as basis for decision-making. The actors are seen as economic decision makers, even though rationality is limited, who are alert according to available options of action, creative in finding new alternative options and bold in their decision-making. The sixth paradigm presumes that the developments are not generally determined and that the individual actor has at least a limited influence on them (Freiling et al. 2006).

This study applies the view of the Competence-based Theory of the Firm (CbTF), as its main focus is the entrepreneur as an individual and his/her attributes, characteristics and competencies. The influence of fear on entrepreneurial activities, especially foundation, should be investigated based on the attributes of the individual. In a further step, it will be investigated if these attributes also have an influence on firm performance. The Competence-based Theory of the Firm (CbTF) is focused on explaining firm survival (Freiling et al. 2008). Therefore it matches the explanandum of this study – the reasons for success or failure. The theory argues based on the competences of an organization, which can be back-tracked to the competencies of the actors within the organization. Therefore the explanans of the theory can also be aligned with the aim of the study, to explain firm survival by the person of the entrepreneur. However, it has to be kept in mind that the theory originally focusses on the competencies of the organization and not specifically on the attributes of the founder (e.g., his/her fear). Therefore a logical argument has to build a connection between the attributes of the founder, their influence on the actions and competencies of the founder and the subsequent competences of the organization. Human Capital Theory can help to build this connection (Becker 1975; Davidsson & Honig 2003; Bates 1990; Werner 2011; Hatch & Dyer 2004; Pennings et al. 1998; Cooper et al. 1994) (c.f. section 3.2.5).

### 3.2.3 Evolution Theory and further theories of social change

There is a number of different theories, which describe social change. Van de Ven and Poole (1995) give a good overview of the different theories in their publication *Explaining development and change in organizations*. They focus on four theory families of social change and compare them. (1) Theories on *Life Cycle* see the development of an organization as an immanent sequence of the life cycle stages startup, grow, harvest and terminate. Each life cycle is a linear and irreversible process and the adaptation only occurs between the life cycles. Pioneers of this approach are Comte (1798-1857), Spencer (1820-1903) and Piaget (1896-1980). (2) Theories on *Teleology* propose that all actions are oriented towards a certain purpose. Organizational patterns follow a sequence of searching goals, setting goals and implementing goals. After a state of dissatisfaction with the achievement of the goals settles in, the process starts over again. Originators of this field are Mead (1863-1931), Weber (1864-1920) and Simon (1916-2001). (3) *Dialectic* theories argue that the origin of social change is opposition and conflict. The logic of development is that a thesis and an antithesis of rivaling forces result in a conflict. Out of this conflict arises a synthesis as new state. The next change process starts over, when a conflicting antithesis arises against this new state. This family of theories builds on the thoughts of Hegel (1770-1831), Marx (1818-1883) and Freud (1856-1939). (4) The family of *Evolution* theories compares the development of organizations with biological organisms. The origin of change is seen in competitive survival. A natural selection among competitors either causes adaptation of the less fit organizations or their extinction. Organizational change is explained by a cycle of variation, selection and retention. These theories are grounded on evolution theories by Lamarck (1744-1829) and Darwin (1809-1882) and genetics theories by Mendel (1822-1884) (Van de Ven & Poole 1995).



**Fig. 9:** Process Theories of Organizational Development and Change (Van de Ven & Poole 1995)

Especially Evolution Theory (Campbell 1965; Staber 2002) provides a helpful theoretical foundation for this study. Campbell (1965) applied the evolution theories of Darwin et al. (1859) on organizations and drew parallels between the evolutionary processes of variation, selection and retention between biology and economics. Brösel et al. (2007) further detail this view and compare biological organisms with corporations and with products and identify many metaphorical similarities.

The manager of an established company or the founder of a startup have to fulfill their roles as entrepreneurs and need to actively manage the evolution of their organization and products. Miner (1994) proposes certain processes in the evolutionary phases of variation, selection and retention. *Variation* requires, for example, institutionalized experimentation and a certain “playfulness” to stay innovative. Direct and indirect incentives should encourage entrepreneurial behavior. *Selection* processes should set guiding goals and values and track them with defined project criteria and checkpoints. Competition also influences the selection process. *Retention* processes aim to manifest the selected processes by formalizing and controlling them and supporting them through a system of social values (Miner 1994).

While this study agrees with Miner’s (1994) view on *variation* and *retention*, it takes a different perspective according to the *selection* phase. This study differentiates between variation and retention as *internal* processes and selection as an *external* process. An

organization has to re-invent itself and its products constantly and can well influence this innovation internally. The same applies for retention of successful strategies, processes and products. However the organization has little influence on the selection mechanisms, as they come externally from the outside market. The market environment selects which processes and products become successful. This depends on customer acceptance, competitive reactions and environmental conditions, like technological developments or regulatory conditions. The organization can – and should – try its best to anticipate the success chances of an innovation in the external selection process and design its variation processes accordingly. However the decision about success or failure lies with the market. Eventually the market will judge, which variation will prevail. It is then up to the organization again, to retain a successful variation.

Parallels between aspects of Evolution Theory (e.g., Campbell 1965) and Entrepreneurship Theory (e.g., Freiling 2008) can be drawn (Hodgson 1998). *Variation* processes of Evolution Theory refer to *system renewal* in Entrepreneurship Theory, as both are about innovation. *Retention* processes of Evolution Theory refer to *system protection* in Entrepreneurship Theory. In both theories, a successful fulfillment of these functions leads to performance of the organization. Since Evolution Theory primarily deals with organizational change and development, the *system exploitation* aspects are not in primary focus.

Evolution Theory and the basic idea of variation, selection and retention is an important foundation for this work, as it can be applied on the entrepreneurial context and especially on the concept of the Entrepreneurial Funnel, which was developed in this study. Also the parallels between biological organisms and organizations and products can be extended to entrepreneurs as individuals (Brösel et al. 2007). They perform variation processes in developing new ideas and take part in the selection process of their ideas in the market, just like a biological species would struggle to dominate or at least survive (Brösel et al. 2007). Once they founded their venture, they have to retain both the organization they founded and their position within the organization, as situations are not rare, that founders of companies get replaced, for example by their investors or their co-founders.

### **3.2.4 Liabilities of Newness**

The research direction of population ecology of organizations (Hannan & Freeman 1977) investigates the failure causes of companies, especially startups, independently of their business idea or model and of their founders. According to this, companies carry certain common liabilities which are independent of their individual situation. Of particular relevance



for startup companies are the “Liabilities of Newness” (Stinchcombe 1965; Brüderl & Schüssler 1990; Henderson 1999; Thornhill & Amit 2003). This phenomenon is different but related to the concept of “Liabilities of Smallness” (Freeman et al. 1983; Aldrich & Auster 1986), which refers to the size of the company and mainly argues with drivers like the disadvantages due to economies of scale for smaller companies, for example for scale-dependent newspaper companies (Freeman et al. 1983). There are further liabilities discussed in research, which could be relevant for entrepreneurship, but are not in focus of this study. These include “Liabilities of Foreignness” (Zaheer 1995) for international startups, “Liabilities of Serviceness” (Freiling & Estevão 2005) for service oriented ventures or “Liabilities of Obsolescence” (Henderson 1999) for startups in environments with rapid technological changes.

The basic insight from research on “Liability of Newness” is that new companies have a higher probability of failure, just because of the fact that they are new due to a number of reasons (Stinchcombe 1965; Brüderl & Schüssler 1990; Henderson 1999; Thornhill & Amit 2003) which will be presented in the following sections. There is a number empirical studies which confirm this phenomenon, from various industries, like manufacturing, semiconductor electronics and newspaper publishing (Freeman et al. 1983).

There are multiple reasons causing this phenomenon. One major reason is about internal *coordination problems* in new companies. Stinchcombe (1965) argues, that building up a new organization with new formal roles and tasks causes initial learning costs, which are an additional burden for a young company. Furthermore informal structures and the according normative basis are not in place yet, decreasing the efficiency and effectiveness of the early organization (Stinchcombe 1965). This challenging establishment of organizational structures is not comparable with the change of the structures in mature companies. The latter does not influence failure rates of companies, even when fundamental changes, like the replacement of a CEO occur (Singh et al. 1986). A further handicap of new companies is the lack of *competences and resources*. It takes time for an organization to identify the necessary skills and knowledge and to acquire them. Deficiencies with a particular influence on the early-company hazard rate are general management skills, financial management skills and market development skills (Thornhill & Amit 2003). Just like competences, also resources have to be built up over time. Since early-stage enterprises usually start with a very limited capital endowment, they have much less power of endurance in times of crisis than established ones (Thornhill & Amit 2003). A further weakness of young companies is related to the *market*



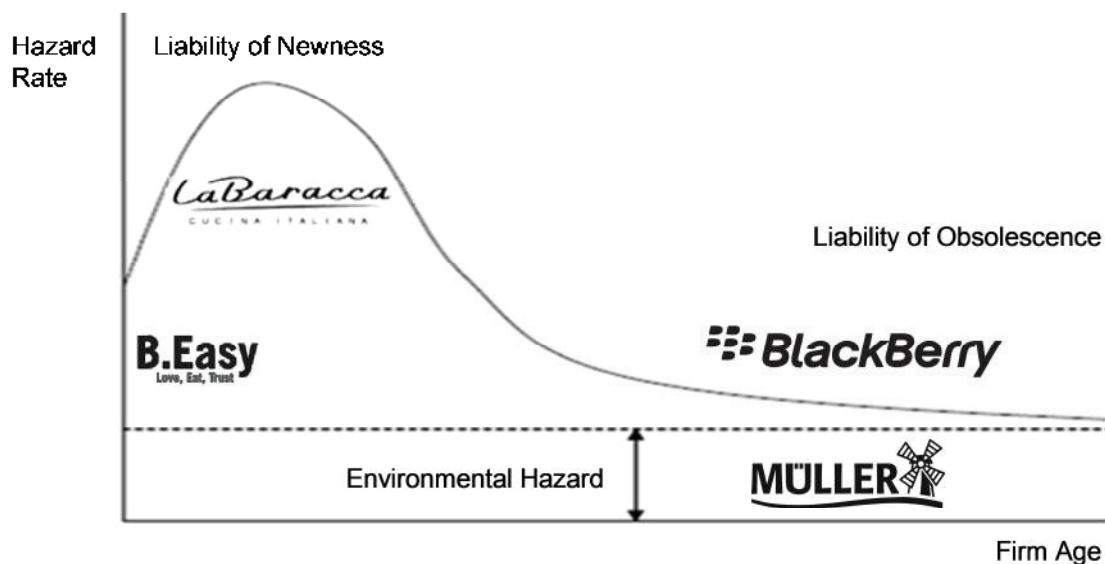
*demand*. New companies naturally do not have a customer base and market reputation yet. “Stable links to clients, supporters, or customers are not yet established when an organization begins operation” (Stinchcombe 1965, p.148). This situation has a double drawback: first of all, it requires a high investment to build up a customer base and secondly the company has to go through the dry spell of initially low revenues. This puts both pressure from the cost and the revenue side on the new venture. Furthermore, building up a new customer base is more demanding for a new company than for an established one, since it has no brand or reputation to leverage (Freiling et al. 2010) or initially lacking external legitimacy, for example a Charitable Registration Number, a Community Directory Listing, etc. for voluntary social service organizations (Singh et al. 1986). Taking the initially less developed marketing skills mentioned above into account, gives an understanding of the challenge to build up a solid revenue stream.

While all of the above reasons make sense and are to an extent supported by empirical findings, this study argues, that at least a part of this effect can be explained solely by a selection bias. Companies with structural deficiencies that could potentially cause failure, be it in their team of entrepreneurs, the business model, the market, or any other reason which is fairly constant over time, will fail due to that in a very early stage – unless they have an extremely high capital endowment, which is not very likely for a startup company and which would probably only delay the failure for a limited amount of time. Since all those companies are filtered out in the early stages, only the promising companies remain in the sample. Therefore, the simple reason could be that bad companies will fail, while good companies will not – and the bad companies will fail early, if they are bad right from the beginning. If a good company fails later on, then because something has changed that causes the company to be less competitive. This assumption is supported by research, which finds that older companies tend to fail due to changes in the competitive environment (Thornhill & Amit 2003).

There are also criticisms of the “Liabilities of Newness” approach in existing literature. Various researchers doubt the hypothesis and argue for a death rate peak in the middle of a company’s life cycle instead (Brüderl & Schüssler 1990; Fichman & Levinthal 1991; Kale & Ardit 1998). Brüderl and Schüssler (1990) support a hypothesis of “Liabilities of Adolescence” instead and propose that the mortality hazard follows an inverted U-shape risk pattern and peaks between one and fifteen years after foundation. Kale and Ardit (1998) support this view but, however, still consider the companies in the peak of the U-shaped

mortality curve young and hold the typical challenges of newness as presented above (lack of legitimacy, lack of organizational learning, etc.) accountable for their failures.

Overall this study generally supports the view of “Liabilities of Newness”, however with a certain offset in time. Because new companies anticipate that it will not be easy, they take measures to withstand the initial dry spell for some time. Investors have most likely taken ramp-up costs for the early years into account. This might explain the lower mortality rate in the very beginning. Once these funds run out or the “burn rate” of the company is higher or longer than expected and no additional financing round can be closed, the company fails. It is not implausible that this process takes some time and therefore the mortality rate peak is reached only after some years. The following figure illustrates this view.



**Fig. 10:** Firm age and mortality risk (Thornhill & Amit 2003) with case study examples

The above argumentation can be supported by case studies. In the case of the food concept B.Easy, the initially lacking market demand paired with high operative costs, especially the property rent, lead to an early bankruptcy only after a few weeks (Food Service 2013a). Obviously, there was either no perspective for long term profitability or no sufficient funding to bear the dry spell. In the case of the food concept La Baracca, the situation was similar but different. Both had similar starting conditions, as they were founded by an experienced entrepreneur (Mark Korzilius, the founder of the successful restaurant chain Vapiano) and

with a high amount of investments (Food Service 2013a; Food Service 2013b). The concept did not run well initially, but the investors had deep enough pockets and the willingness to keep the concept alive and modify it, to make it successful. This delayed the failure of the concept for a couple of years, but could not stop bankruptcy (Food Service 2013b). Since investors plan with initial ramp-up costs and would most likely not tend to write off the investments right away without taking the chance of a turn-around, this seems to be the more common case and would explain the inverted U-shaped hazard rate. In the later stages of a firm's life cycle, companies face "Liabilities of Obsolescence", like the smartphone pioneer Blackberry experienced. Due to new technological developments and the resulting possibilities to include an email function in any mobile phone, the original value proposition became obsolete (Jacobides 2013) – and with it, the whole company, since it failed to re-invent its value proposition. In the case of the bakery chain Müller Brot, an environmental hazard lead to failure. After a routine check, the authorities shut down the central production of the bakery due to long known hygiene deficiencies and did not permit re-opening even after massive investments in cleaning and renovation (Riedel 2012). Since the authorities were familiar with the hygienic conditions before, the situation could have found another end, depending on the actions of the officers, for example a final warning with terms to renovate or rebuild the production facilities. Therefore, even though the hygienic conditions are an internal problem, one can argue for an external influence causing the sudden bankruptcy.

Henderson (1999) argues that time is not the only effect, instead there are interactive effects between age and the technology strategy of a company. In an empirical study of the US personal computer industry, He shows that for companies the age dependence varies based on the selected technological strategy. While companies which apply a standards-based technological strategy are more exposed to the "Liabilities of Adolescence" in their failure rates, companies which apply a proprietary technological strategy are more exposed to the "Liabilities of Obsolescence".

The concept of "Liabilities of Newness" is an important background for this study, as it includes the discussion of failure reasons for young companies, which is in focus of this research. Especially lacking competences and organizational structures as challenges for new companies are closely linked to the entrepreneurs' as individuals and therefore of major interest in this research endeavor.

### **3.2.5 Human Capital Theory**

Human capital theory delivers the reasons why it is important to investigate the founder as an individual. The theory draws parallels between investments in companies and in human beings. The core proposition is, that investments in education of people cause higher productivity and hence a higher income for the individual and for the organization, he/she works in (Becker 1975; Davidsson & Honig 2003; Bates 1990; Werner 2011; Hatch & Dyer 2004; Pennings et al. 1998; Cooper et al. 1994). The focus of human capital theory therefore is on learnable skills, not the giftedness or the unswayable attributes of the founder. The latter would fall into the research area of the traits approach in behavioral sciences (Werner 2011).

Becker (1975) differentiates two types of human capital: the general human capital, which refers to qualifications that are helpful in any situation, for example the years of schooling, years of work experience, etc., and the specific human capital, which refers to skills that are particularly required for a specific task. In the context of entrepreneurship, the specific human capital can be further divided in the two sub-categories industry-specific human capital and entrepreneur-specific human capital (Preisendörfer & Voss 1990; Brüderl et al. 1992). Industry-specific human capital is a crucial success factor in entrepreneurial situations, because it enables the entrepreneur to identify profitable niches in market and to increase productivity (Brüderl et al. 1992). Entrepreneur-specific human capital refers to qualifications and experiences in leadership, general management and self-employment (Brüderl et al. 1992). It seems, entrepreneur-specific human capital is mainly learned by experience and not in school. This could be direct experience, for example in a management role, or indirect experience, for example through self-employed parents or relatives (Brüderl et al. 1992). Generally, studies show that human capital approaches can explain firm failures (Pennings et al. 1998).

Since this study focuses on the entrepreneur as an individual and business failure, human capital plays an important role in understanding which kinds of entrepreneurs fear to found a company, fear to fail with it, actually do found a company and finally make it successful. Human capital theory suggests a strong link between the individual competencies and entrepreneurial success. However, the theory is only focused on learnable skills and does not include the role of intrinsic skills and emotions, which are emphasized in this study as well.

### 3.2.6 Prospect Theory

Prospect Theory induced a new view on decision-making under uncertainty. Before, the neoclassical theory prevailed, which postulated “that preferences between two goods are independent of the consumer’s current entitlements” (List 2004). Prospect Theory broke with this neoclassical view and took the psychological effects of human decision makers into account (List 2004). There are many behavioral, cognitive dimensions of decision-making, since human beings are subjective and have individual interpretation schemes in great variety. Nevertheless, especially in decisions under uncertainty there are certain predictable commonalities between individuals (Freiling et al. 2010). Some of these systematic biases are well-researched and build the basis for Prospect Theory (e.g., Kahneman & Tversky 1979; Kahneman & Lovallo 1993; Baron 1998; Zacharakis & Shepherd 2001).

Kahneman and Tversky (1979) developed the Prospect Theory coming from criticism of the expected utility theory and argued for a replacement of probabilities with decision weights. Generally, “[d]ecision weights are lower than the corresponding probabilities, except in the range of low probabilities” (Kahneman & Tversky 1979). This overweighting of low probabilities could explain the success of gambling and insurances. There are also distortions according to certainty. For example, “people underweight outcomes that are merely probable in comparison with outcomes that are obtained with certainty” (Kahneman & Tversky 1979). This certainty effect leads to risk aversion in situations with sure gains and risk seeking in situations with sure losses. Also, Kahneman and Tversky (1992) found differences in the weighting of losses and gains. These decision weights were expressed in a typical value function with certain attributes shared across individuals. Typically, this value function is steeper and convex for losses and gentler and concave for gains (Kahneman & Tversky 1979).

Many studies in different areas (finance, consumer goods, etc.) applied Prospect Theory and provided according empirical examples to prove it with evidence from the field (Camerer 2004; List 2004). The success of the Prospect Theory can be explained by the fact, that it allows predictions and interpretations, which are “both tractable and psychologically realistic” (Wakker 2010).

In the context of entrepreneurship, Prospect Theory plays an important role, since entrepreneurial decisions are usually taken under uncertainty, due to limited available information, information overload or the complete novelty of the situation. Also decision-making is often under time pressure and therefore highly affected by cognitive biases (Baron

1998). Also, even though entrepreneurs are not generally more cognitively biased than other people, literature points out particular differences in certain biases compared to non-entrepreneurs. These differences can be in both directions, with entrepreneurs being more susceptible for some biases and less for others (Burmeister & Schade 2007). For example, successful founders are less susceptible to the bias of sunk costs (Baron 2004). Literature often emphasizes the importance of “overconfidence, which refers to holding beliefs with excessively high precision, and over-optimism, which refers to overestimating the mean of a distribution“ (Eisenbach & Schmalz 2013) in the context of entrepreneurs. Both biases can lead to wrong decision-making and planning, excessive commitment, lock-in effects and eventually to entrepreneurial failure (Freiling et al. 2010). Especially nascent and first time entrepreneurs are affected by overconfidence (Koellinger et al. 2007), judge their skills and current situation too positive (Forbes 2005) and believe that difficult situations will come to a good end (Baron 2004). This bias can lead to “escalating commitment” (McCarthy et al. 1993; Baron 1998) and potentially to entrepreneurial failure (Freiling et al. 2010). Over-optimism can lead to “planning fallacy” (Baron 1998; Forbes 2005) and is hence negatively related to business success (Hmieleski & Baron 2009) and nascent entrepreneurial survival chances (Koellinger et al. 2007). A further biases highlighted in literature to affect entrepreneurs, is the self-serving bias, which describes the phenomenon of attribution success to oneself or internal factors and failure to external ones (Baron 1998). As this bias constrains learning, it is potentially threatening for new ventures. The attribution bias hinders entrepreneurs to relate effects to causes and obstructs entrepreneurs from leaving a critical path or from learning to make better decisions (Silvia & Duval 2001).

Since the focus of this study is human decision-making under the influence of fear in the highly uncertain situation of starting a new business, Prospect Theory provides a solid grounding for this work.

### **3.2.7 Affect as Information**

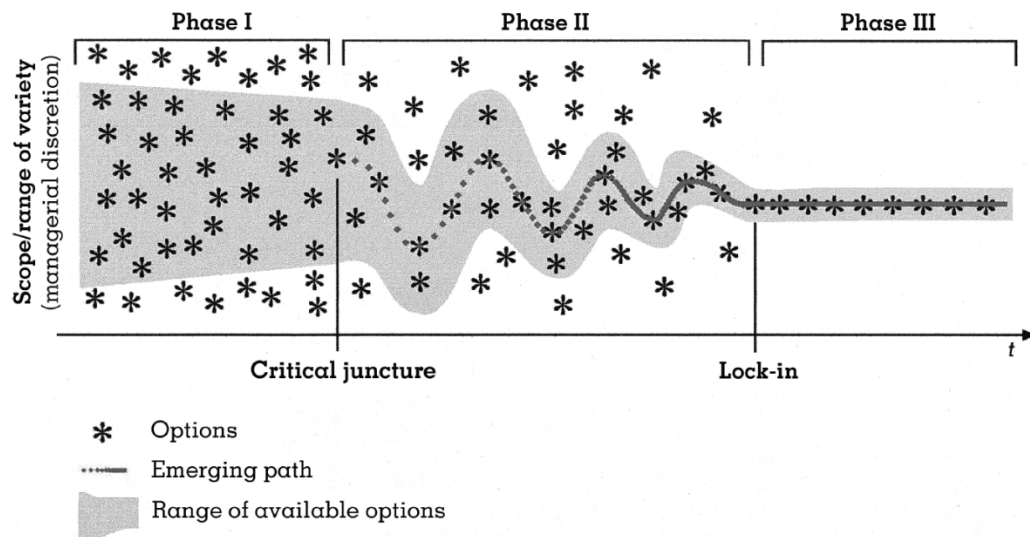
The Affect as Information theory (Gohm & Clore 2002; Clore et al. 2001) provides a general guideline about the influence of emotions on behavior and decision-making. It suggests that individuals routinely take their feelings into account, when making judgments and decisions. In practice, decisions can usually be evaluated by asking oneself: “How do I feel about it?” (Gohm & Clore 2002). These influences of affect on judgment and thought directly lead to changes in behavior, as they empower responses (Clore & Huntsinger 2009; Clore &

Huntsinger 2007; Clore & Palmer 2009). The mechanism also works contrariwise and thought can transform affect accordingly. Generally the influence of affect on behavior depends on the object, which causes the affect. This object causing the affect stimulus, does not necessarily have to be actually currently existing, but can also be an imagination or perception (Clore & Huntsinger 2009; Clore & Huntsinger 2007; Clore & Palmer 2009). In reality, “the hopes and fears that dominate human lives often involve things only imagined” (Clore & Huntsinger 2009). This fundamental view of emotion and affect influencing decision-making and behavior dominates the entrepreneurial research in the field of emotions and is also applied in this study.

### **3.2.8 Path Dependence**

A powerful concept that can help to better understand the process of venture creation and causal chains that lead to success or failure is the concept of path dependence (David 1985; David 2001; Arthur 1989; Arthur 1990; Stack & Gartland 2003; Sydow et al. 2009). According to Sydow et al. (2009), the concept of path dependence provides a framework which explains the process how organizations can get into a situation, where their operating range tightens and eventually predicts their destiny. Originally, the organization starts with a wide scope of possible options to choose from (Phase I). The process of becoming path dependent starts with certain events as a root cause. Under certain circumstances, these events can develop a self-reinforcing dynamic, due to a number of economic and social patterns. As these dynamics get stronger and stronger, a critical juncture is reached, where the operating range of the organization narrows (Phase II). When this juncture is passed, the organization inevitably ends up in a lock-in situation with a “corridor of limited scope of action that is strategically inefficient” (Sydow et al. 2009). In this state (Phase III), decisions and commitments taken in the past cannot be undone anymore and trigger follow-up decisions and eventually a lock-in situation (Freiling et al. 2010; Sydow et al. 2009). The organization then finds itself in a state of inertia and suffers from the effect that its “history matters” (Sydow et al. 2009; Freiling et al. 2010; Teece et al. 1994). Usually the path, the organization is doomed to follow at this point in time is not the most favorable one.





**Fig. 11:** The Constitution of an Organizational Path (Sydow et al. 2009, p.692)

To distinguish path dependence from other phenomena, Sydow et al. (2009) characterize the process by four differentiation properties. The first one is *nonpredictability*. The historic events functioning as root causes for developing path dependence do not allow estimating the future outcomes. Even more, it can usually not be foreseen, which types of events can lead to a lock-in situation at all. The second property of the process is *nonergodicity*. This means that the destiny of the organization was not determined before, so it could develop in multiple ways and hence reach different outcomes. However, the historic events limit the flexibility and determine the path towards one specific outcome out of all the previous alternatives. This leads to the third property of the path dependence process, the resulting *inflexibility*. The process is defined by the eventual situation where the actors are locked-in and restricted in their decision-making. At this point in time, it is not possible to switch to other options outside of the predetermined path. Since path dependence describes a concept of becoming trapped in a suboptimal situation, the process is also defined by *inefficiency*. Usually the path does not lead to a superior position in the market (Sydow et al. 2009). Apart from the fact that not the best alternative of the previously possible outcomes occurred, it is a disadvantage by itself to be limited in decision-making and the choice of options. In today's dynamic environment, flexibility to react on changes in the market can distinguish between success and failure.

To gain a better understanding which historic events can lead to path dependence, it is important to investigate how the self-reinforcing mechanisms work. These mechanisms in Phase II of the path dependence process “mean more than the mere existence of timeworn



routines, cognitive rigidities, or structural inertia” (Sydow et al. 2009) and will be detailed further in the next section.

### **Self-reinforcing effects triggering path dependence**

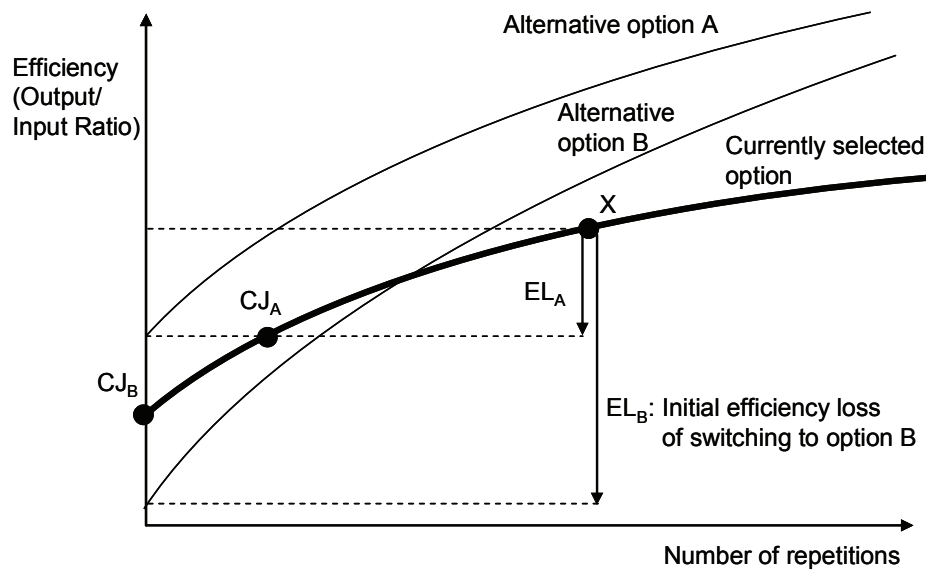
Sydow et al. (2009) identify four major self-reinforcing effects that can potentially trigger states of path dependence in organizations: learning effects, adaptive expectations, coordination effects and complementary effects.

#### **Learning effects**

Learning effects describe the phenomenon of efficiency gains by repetition. With each iteration of an operation, learning effects occur which allow performing the subsequent operation with increased efficiency (Sydow et al. 2009). This is a universal concept that applies to most actions requiring a common skill or experience set, not only to exactly repeating actions like operations on a conveyor belt. It can also occur with unique events, as long as they share a common underlying pattern, for example certain decision-making rules or approaches to deal with an unknown situation. The concept of decision-making grounded in heuristics also bases on increased efficiency by repeating patterns of previous decision-making. Even complex decisions are often taken on the basis of „mental models and dominant logics“ (Prahalad & Bettis 1986) to increase efficiency and reduce complexity (Prahalad & Bettis 1986). Learning effects can create self-reinforcing situations (Sydow et al. 2009). Once certain actions were taken for some time in the past, accumulated skills due to learning effects cause efficiency gains and enable to either perform the operation with lower resource inputs or higher or better outputs. This makes the choice to perform the operation the same way again in the future more attractive. This phenomenon prevents considering other options that could in the long run prove to be superior (Sydow et al. 2009).

The following figure (Fig. 12) will illustrate this situation. In this example, an organization initially chose a particular option for action which was at this point in time neither superior nor inferior to all other available options. Due to various reasons like incomplete information, intransparency or random effects, it is usually not the absolutely superior option that is chosen right away. It could also be, that at the starting point, this option was indeed the dominant one, but over time the environmental conditions changed and new options arose. Through a number of repetitions in performing actions according to this option, the organization learned new skills and increased the efficiency of this operation. Hence, the output to input ratio

increased. At a certain time, the organization reached point X in the graph and considers switching to other options. Alternative A generally is dominant over the currently selected option. However, since the currently selected option for action was already performed numerous times, and subsequently learnings and hence efficiency gains were realized, switching to option A decreases efficiency momentarily. This is because the organization has to start at another point in the curve – right at the beginning, with no learning occurred yet. The instant efficiency loss of switching to option A is marked with  $EL_A$ . This illustrates, that it would take an additional investment in learning when switching to another option. The further the progress with the current choice of action is, the higher the investment and hence the barrier to switch options gets. This is similar to an option that is initially inferior but superior in the long run. In this example, alternative option B has a lower efficiency at the first iteration. However it has a steeper learning curve and therefore soon after a certain amount of repetitions gets more efficient than the currently selection option. However, option B has the barrier of required investments in learning compared to the currently selected option right from the start. Again, the further the progress on the current option of action is, the higher the switching costs ( $EL_B$ ) get. This example illustrates that there is no single critical juncture, but instead a single critical juncture for each of the potential alternatives. In the example, the critical juncture for option B is reached right away ( $CJ_B$ ), the one for option A after a number of repetitions of the currently selected option ( $CJ_A$ ). As the learning progresses, more and more critical junctures of potential options are passed and subsequently the number of available choices with acceptable switching costs narrows down.



**Fig. 12:** Conceptual illustration of switching costs of other alternative options (own illustration based on concepts of the learning curve: Yelle 1979; Spence 1981; Adler & Clark 1991)

The higher the previous investment in building skills through learning are, the higher the barrier to switch to another option and re-invest in the initial learning are. This investment in building up skills is particularly high if the learning to build up these skills occurred with a very low pace and hence a high time investment. This can lead to a vicious circle of increasing path dependence (Prahalad & Bettis 1986; Freiling et al. 2010) that restricts the organization's flexibility and ability to adapt to its dynamic environment (Freiling et al. 2010). Additionally to the efficiency gains due to repetitions there might be general challenges according to organizational learning. Schön and Argyris (1997) describe cognitive limitations in their learning model which prevent reflection on the learning and hence effective skill and experience building. Challenges in this context are “single-loop learning”, instead of “double-loop learning” and neglecting of “unlearning” of skills which do not prove to be favorable (Schön & Argyris 1997; Freiling et al. 2010).

### **Adaptive expectations**

Sydow et al. (2009) describe the concept of adaptive expectations as the adaption of behavior based on the experiences and expectations of other persons' reactions on the behavior. Preferences can “vary in response to the expectations of others” (Sydow et al. 2009). This behavior can be explained by the uncertainty people face according to their decisions and the reduced complexity and feeling of security if other people show similar decisions or behaviors or at least appreciate them. Cause of this behavior is the human “need for social belonging

and the desire to end up on the winning side” (Sydow et al. 2009). As opposite, individuals are subconsciously afraid of breaking out of the mainstream and being stigmatized as “outsiders” (Kulik et al. 2008). Since expectations are influenced by others, it can become a self-fulfilling prophecy if everybody does, what everybody else does (Sydow et al. 2009). This can result in a self-reinforcing system. If an individual takes a decision to meet the expectations of a group, the group feels confirmed with its expectations and tends to strengthen them. This increases the pressure on subsequent decision makers to behave in a way that is conform to these expectations (Sydow et al. 2009). Due to the resulting determination of decisions, the organization gets more and more path dependent. In the context of entrepreneurship, the founders and their organizations are in constant exchange with other entities and exposed to their behaviors and expectations. Founders adopt behaviors they observe with others and consider them “best practices” without reflecting if this is the best solution for their individual situation (Freiling et al. 2010). Human beings are also influenced by cognitive biases when estimating expected behavior. For example, people tend to rely more on negative than on positive information (Baron 2004). This fact can lead to distorted reactions of entrepreneurs which are more targeted to the negative information, e.g., the risks, than the positive, e.g., the chances. Subsequently entrepreneurs can take exaggerated „defensive actions“ (Freiling et al. 2010). Since resources are generally, but especially in the entrepreneurial context scarce, this exaggerated behavior is not efficient and can in extreme cases be a barrier to success (Freiling et al. 2010)

### **Coordination effects**

A further effect which can lead to path dependence is the coordination effect (Sydow et al. 2009). It describes the influence of predicted reactions on the decision-making behavior. In environments where the actors know each other well and play in well-rehearsed teams, the reactions of the other actors to the own decisions can be predicted. There are implicit or even explicit codes of conducts that lead to rule-guided behavior. By using these rules the reactions of the other actors can be predicted and hence uncertainty can be reduced. This decreases complexity and facilitates decision-making (Sydow et al. 2009). Similar to network effects, using these rules gets more attractive, the more other actors use these rules as well. Coordination effects allow “more efficient interaction among these actors” (Sydow et al. 2009) and hence “coordination costs can be significantly reduced” (Sydow et al. 2009). In the context of entrepreneurship, coordination effects can cause escalating commitment and organizational rigidities (Freiling et al. 2010). These can cause inappropriate adherence to

current behaviors and ways of decision-making due to previous experiences of affirmation by various stakeholders, like co-founders or investors. It can also distort the evaluation of previous investments of time or other resources. They are no longer considered sunk costs which are irrelevant for future decision-making, but show a path of historic approval that seems appropriate to be continued – regardless if they were efficient or not. These coordination effects restrict appropriate reactions and adaptation to the market, competition and changing environmental conditions (Freiling et al. 2010). When own decisions follow the rules a group, this code of conduct gets more and more cemented and triggers further decisions following it. This causes a self-reinforcing effect, that narrows down the scope of future decisions and can lead to path dependency (Sydow et al. 2009). An example that radically illustrates this effect is right-hand traffic. Since the reaction of the other actors – in this case, the side of the road they are going to use - can be predicted from historic experiences and rules, it determines the choice of the side of the road, the actor will use. Not only makes it the decision less complex, it also increases efficiency when performing the action of the chosen option because of the coordination with others (Sydow et al. 2009). Another example could be working-time regimes. While in Germany a 5-day week is standard, it is the natural choice of most organizations to follow it – without even evaluating if it is the most appropriate choice for their individual situation. In other countries, like India, a 6-day week is standard, with hardly an organization questioning it (Sydow et al. 2009). Should there be a dominant option between a 5-day and a 6-day week, one of the two economies would be path dependent and stuck with a choice that is not the optimum one due to path dependence.

### **Complementary effects**

Sydow et al. (2009) also hold complementary effects accountable for developing path dependency. These effects are similar to the concept of Economies of Scope, which describes that two or more goods or services have lower average costs when developed, produced or marketed together instead of separately (Panzar & Willig 1981). This effect can also apply to efficiency gains through a combination of production resources. An example in the entrepreneurial context could be the setup of incubator ventures of media companies, like ProSiebenSat.1's incubator Epic Companies. It seems likely that such an incubator of a media company supports its venture with its own media channels. Therefore the venture benefits from the complementary effects to cooperate with the media company and is likely to focus on according marketing. The more the company aligns its resources towards this strategy, the

less flexible it will become to change to alternative partnerships, for example more on the production side than on marketing. Prahalad & Hamel (1990) show examples of such cooperation between divisions within one company. For example, companies could combine their marketing skills and R&D capabilities to form their core competence (Prahalad & Hamel 1990). An example that comes to mind when thinking of such a company is Apple. Due to the synergies that can be achieved by different entities working together as an established dream team, deviation from this state involves switching costs (Prahalad & Hamel 1990). The concept of complementary effects illustrated by production synergies also applies to the products as well. Complementary effects might make a combination of certain goods and/or services or just a combination of particular features within a product very beneficial. An example could be the combination of hardware and software in one product from the same company in the early day of smartphones (Lin & Ye 2009; Kenney & Pon 2011; West & Mace 2010). Sticking to this combination, Nokia found itself in the unfavorable position of high investments in the in-house development of operating systems for their different product models additionally to the hardware development, while traditional software houses like Microsoft and open source movements like Android started developing operating systems only and others like Samsung focused on solely hardware development (Lin & Ye 2009; Kenney & Pon 2011; West & Mace 2010). In the long run, giving up the efficiency gains from the complementary effects might have proved wise. Apple took another approach and leveraged their complementary effects of combined software and hardware development in the personal computer segment to enter the phone market to introduce revolutionary new ways to think about mobile phones and introduced the era of today's smartphones (Lin & Ye 2009; Kenney & Pon 2011; West & Mace 2010).

The previous example illustrates a dilemma businesses can face according to complementary effects. Leonard-Barton (1992) highlights the paradox of companies which want to leverage their own strengths and build on best practices, but at the same time be innovative. “[T]raditional core capabilities have a down side that inhibits innovation, here called core rigidities” (Leonard-Barton 1992). This rigidity is a sign for the path dependency the company is stuck with. Since the established way of doing things is working so well or at least worked so well in the past, new behaviors, routines and rules are only introduced, when they are in line with the current *modus operandi* and hence further complementary synergies may be expected (Sydow et al. 2009). The more of these informal rules are established additionally, the more the incentives grow to choose system conform behavior again. This leads to a self-reinforcement of the complementary effects and supports becoming path

dependent. The challenge for companies is to benefit from the efficiency given by their core capabilities but at the same time staying flexible enough to be innovative (Leonard-Barton 1992).

### **Self-reinforcement**

The four effects described above can develop a self-reinforcing mechanism and lead to path dependence. The reasons for these dynamics partly lie in human behavior and decision-making. Emotional reactions, like uncertainty avoidance, the need to feel belonging to a group or to be politically correct and to act according to social desirability play an important role (Sydow et al. 2009). Just like in all human decision-making, cognitive biases like selective perception or confirmation biases are an important factor here as well (Sydow et al. 2009; Kahneman & Tversky 1979). The phenomena adaptive expectations, coordination effects and complementary effects fall into these categories. As opposite, learning effects represent a more objective, economical reason to be stuck in the current path. In the short run, sticking to the current practice is indeed more efficient – independently of potential cognitive distortions. This is similar to other resource-based lock-in situations with high switching costs (Sydow et al. 2009). An example is the use of today's standard keyboards with QWERTY/QWERTZ key layout (David 1985). It is not the most ergonomic and efficient way to type and solely results from historic typewriters to prevent the letter levers from jamming. Since generations of people were used to type with this layout, it was maintained in the electronic age. Switching to a more ergonomic keyboard layout would have been technically possible then and way more efficient, but at the price of switching costs with according initial inefficiency (Sydow et al. 2009). Another example would be the video recording standard VHS, which won over the superior format Beta (Arthur 1990). Due to network effects, the value of a recorder of certain format increases with the number of available tapes in this format (and vice versa). Due to this effect, one system (in this case VHS) reached a tipping point and got on a path towards market domination (Arthur 1990). This example shows how not only a single organization but the whole society is caught in path dependence. An example of path dependency of an organization is the hardware store Praktiker. After running successful "20% discount on everything" campaigns the company started relying on this marketing campaign and repeated it over and over again. Unfortunately, with each repetition the revenue effect decreased as customers got used to the campaign. This had the negative effect that sales outside the campaign started declining and the company got more under pressure to repeat the campaign.



Being stuck with on this path, the company eventually went bankrupt (Handelsblatt & dpa 2012; Kaiser 2013).

In their research Sydow et al. (2009) also distinguish the concept of path dependence from related concepts. These concepts are institutionalizing, reactive sequences, structural inertia, escalating commitment, self-justification, fears of losing face and imprinting. For further detail see the according study by Sydow et al. (2009).

### **Breaking the path**

To regain the flexibility according to the available choices, the path dependent organization in Phase III has to break the path (Sydow et al. 2009). The aim can be either to return to the full set of choices of Phase I, to just broaden the corridor of available choices, or to generally accept the path dependency but at least try to switch to another, more favorable path. Breaking the path means leaving the current patterns of decision-making and actions behind. This is not an easy endeavor, as the causes are often emotional and cognitive barriers, as describes above, which are hard to overcome (Sydow et al. 2009). It might be that external impulses are required to change the lens of looking at things and evaluating the current situation. For organizations, this outside impulse could for example be advice from external consultants or newly hired management staff. For individuals, this could be mentors or coaches (Kets de Vries 2006). To cope with emotional barriers, individuals might need psychological and psychoanalytical approaches (Sydow et al. 2009; Kets de Vries 2006), such as Neuro Linguistic Programming (NLP) tools like reframing (Bandler et al. 1982) or psychoanalytical leadership coaching (Kets de Vries 2006).

The concept of path dependence is important for this study to understand whether the process of becoming an entrepreneur can be seen as a dependent path as well (c.f. section 5.3.1).

### **3.2.9 Real Options Reasoning**

Real Options theory (McGrath 1999) transfers the principles of trading with financial options to entrepreneurial investments. In financial markets, the purchase of an option gives you the right, but not the obligation to buy the underlying asset. The same applies, when taking investing decisions in a startup. After each round of investments the entrepreneur can decide based on the achieved performance, to increase his/her investments or to withdraw. These investments could be in resources, primarily financial resources, and time commitment. Such

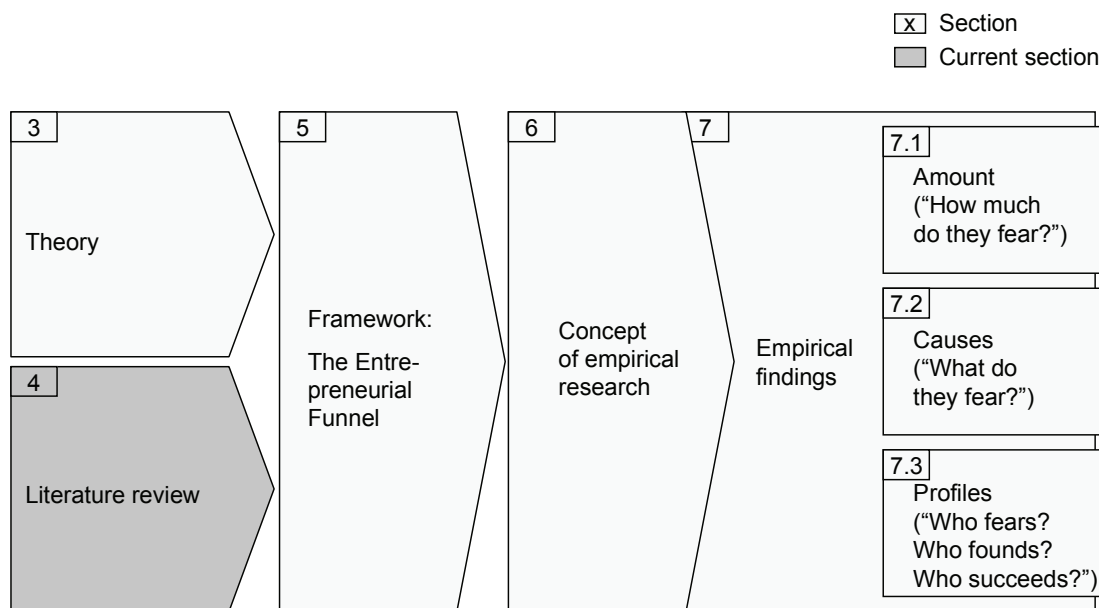


an option is particularly valuable in highly volatile situations, as the downside is limited to a maximum of the total loss of the investment, but the upside is disproportionately high. This makes the option highly valuable. In financial markets, this high expected value would already be priced into the option. However in startup situations, due to the missing transparency, the situation could be different (McGrath 1999). This view changes the evaluation of entrepreneurial failure: “Real options reasoning suggests that the key issue is not avoiding failure but managing the cost of failure by limiting exposure to the downside while preserving access to attractive opportunities and maximizing gains” (McGrath 1999). However, this reasoning requires a rational evaluation of the performance of the startup. In reality, it is likely that this evaluation is rather subjective. Entrepreneurs are often reluctant to abandon a bad project and restart with another (Landier 2006). This behavior undermines the advantages of real option thinking, as it does not limit losses up to the initial investments, but forces entrepreneurs into a path of irrational re-investments.

The concept of Real Options Reasoning is important for this study to understand failure situations where an entrepreneur might abandon his/her venture to seize a more promising opportunity.

## 4. Overview of existing research

This chapter will present an overview of existing literature as a foundation for this research on fear of failure. To do so, this chapter will investigate previous research about failure, about fear and finally the connection of the two in three consecutive sections. The first one will give an overview of the research field of entrepreneurial success and failure in general and will then narrow down to research of factors for entrepreneurial failure in particular. It will start with a literature review to give an overview of the discipline and the according challenges. Here, the focus lays on introducing the field of research but not the single success and failure factors. The latter will be introduced in an according literature review in chapters 8 and 9. The second part will introduce the research field of emotions and fear. First, an overview of literature about the role of emotions in general will be given, then the focus will be set on the emotion of fear in particular. To do so, the phenomenon of fear will be illuminated from the perspective of psychological as well as of economic research. In the third and last part of this chapter, the understanding of fear of failure to be used in this study will be distilled and the components of this fear will be introduced.



**Fig. 13:** Structure of this research study with highlighted current section

#### **4.1 Overview of existing research on entrepreneurial success and failure factors**

Management research only began to become strong in the field of entrepreneurship as late as in the 2000s (Davidsson & Wiklund 2007; Freiling & Wessels 2010). Even though today entrepreneurship research is already a manifold research area with many empirical studies highlighting various topics of entrepreneurship. Most studies on entrepreneurial success and failure can be roughly categorized in to one of the following three areas: (1) the entrepreneur as an individual, (2) the environment of the venture or (3) the activities undertaken by the entrepreneur (Rotefoss & Kolvereid 2005). This research study falls into the first category and highlights the role of the person of the entrepreneur.

The following sections will give an overview of existing literature about entrepreneurial success and failure, which is relevant for this research endeavor. First, an overview of the research field on success and failure factors with a focus on startup companies but also enterprises in general will be presented. Challenges and areas for critique in the research field will be highlighted. Then the focus of the literature review will be narrowed down to failure factor research only and to studies concentrating on startups rather than enterprises in general. An overview of the limited existing research will be given but the focus lies on describing the challenges of the research area, as it could be an explanation for the restricted number of existing studies. The main challenges suggested by this study are the separation of causes and effects, the attribution of causalities in systems of causes and effects, the differentiation of success and failure factors, the time period of the company and specific systematic challenges in empirical research.

This section will focus on research on entrepreneurial success and failure in general. Detailed results from the present studies which particularly concern certain steps in the entrepreneurial venture creation process (c.f. e.g., Kelley et al. 2011; Sánchez López 2012; Bhawe 1994), for example findings on which kind of individuals actually do found companies or make them successful, will be presented in separate literature review sections in the corresponding sections 7.2 and 7.3 together with the empirical findings of this study to allow a direct comparison.

#### **4.1.1 Overview and critique of the research area of entrepreneurial success factors**

Even though there is a lot of literature covering this topic, it is not an easy task to accurately determine the factors that cause entrepreneurial success. Fallgatter (2005), Freiling and Estevão (2005) and Nicolai and Kieser (2002) give an overview of arguments, which criticize this research area and its approach in general. According to this overview, research of success factors for enterprises is currently critically discussed in literature, especially for young companies (Freiling & Estevão 2005; Meyer 1999, p.143; March & Sutton 1997; Nicolai & Kieser 2002). There are multiple reasons for this critique. When taking a look at a single study on this topic, its results appear to be quite reasonable and seem to explain factors for entrepreneurial success. However, an overview of various studies reveals that for every theoretically possible success factor a supporting study can be found. This fact undermines the existence of a limited number of success factors with special importance (Fallgatter 2005). While existing research seems to cover all thinkable factors in a collectively exhaustive way, they are not mutually exclusive. In overlapping areas, literature review also reveals contradictions between different studies (Fallgatter 2005). One reason for this could lie in the definition and measurement of the performance indicator (Freiling & Estevão 2005; Meyer 1999, p.143). Since success can be manifold, it is often not tangible and not easy to measure. If at all, only the 'lower boundary' of success can be clearly defined: the avoidance of insolvency (Fallgatter 2005), anything above that gets blurry. An example could be the growth of a company. Is a fast growing company really more successful than a slowly and steadily growing company? It could well be that the founder of a slower growing company just has a different ambition level according to growth, another attitude towards risk, the aim to increase profitability first before growing, etc. Different entrepreneurs have different ambition levels of terminating or continuing their respective businesses, e.g., based on their opportunity costs (Gimeno et al. 1997).

Additionally to the fact that it is already difficult to define and measure success, it is also very difficult to build a causal chain from success factors to success. Two sub-problems make this endeavor especially hard. One is the isolation of the effect of a particular success factor as cause (Freiling & Estevão 2005). Startup companies are very dynamic entities with impactful events happening with high frequency. Because of that, a certain development can hardly be assigned to a single one of these events. A classical approach in such a setting would be to compare different companies which show a similar development and analyze which group of events occurred, that could have possibly lead to this effect. By treating these events as input

factors, correlation can be determined to give indications for certain causalities. However, to do so, the different attributes or events would have to be (a) comparable (e.g., “strong marketing focus” in company 1 is comparable to company 2) and (b) from an identical set of basic population. Both prerequisites are hard to achieve, especially with startup companies. Since these companies are highly dynamic and innovative, it is very likely that certain events are of very individual character and so unique to a single venture that they cannot be compared to another one. This is why Nicolai & Kieser (2002) generally consider it naïve to transfer success factors from one company to another (Nicolai & Kieser 2002, p.588; Fallgatter 2005). Because these events are so distinct, it is also very hard to build a common set of potential root cause events as a basic population to draw from. In the end, new ventures can reach success in countless different ways (Freiling & Wessels 2010). Another sub-problem of assigning causes to effects is the time reference (Freiling & Estevão 2005). The time lags between a cause and its corresponding effect can be very long and also very different from company to company. The duration of this development could make it especially hard to research, because a certain company would have to be analyzed over a very long period of time. The variation in the duration between cause and effect makes could make it even harder to identify a causal connection. For example, in a comparison of different companies that all experienced a certain event in their development, only some of them could face a corresponding effect. For the other companies it would then be difficult to determine, if the event would not lead to the effect at all, or just not yet.

The discussion shows challenges in the research of entrepreneurial success factors, especially in defining success, defining comparable success factors and building causal chains between them. As presented above, current research findings are partially criticized to be trivial or contradictory (Freiling & Estevão 2005; Fallgatter 2005). Therefore, for future research, this study suggests to refrain from the ambition to discover universally valid success factors for startup companies. Instead, research on success factors should be divided in a much more granular way, based on (a) different definitions of success and (b) different types of startup enterprises. The definition and measurement of the success of a company should follow its individual goals and function as cluster criterion for different companies. For example, for a well-financed e-commerce startup with a long-term perspective, fast revenue growth could be the main success criterion (c.f. “get big fast” strategy: Oliva et al. 2003). Profitability could be of minor or even of no importance at all. The reason for that is that in a high competitive market with huge economies of scale, a “winner-takes-it-all” situation could arise. Players in this market would not aim for profits in the development phase, but for the high risk bet to be

the winner in the market (Oliva et al. 2003). Other startup companies, for example an uprising restaurant chain, would aim for early profitability. Here, the investments might be incremental (one restaurant opening after the other) and would either be financed organically from the cash flows from other restaurants or from external investors, who would require high profitability of existing stores as a proof of concept (c.f. valuation approaches: Declerck 2003). These different perspectives are also reflected in the typical evaluations of those different companies. While the mentioned e-commerce startup would be evaluated by its number of users, user growth, growth perspective, revenues, etc., a restaurant chain is usually valued by a turnover or cash flow multiple (Declerck 2003). This illustrates the different success definitions that, in the opinion of this study, cannot be compared. Hence, further research should not struggle to find a common all-embracing success definition for startups in general, but differentiate success factor research by different success measures. This study suggests the same for different types of startups – additionally to their success measure. It can be assumed, that the success factor for high-tech companies in the 1980s are different from an e-commerce company in the 2010s. However, research overviews on entrepreneurial success factors aim to find overarching success factors for all these different types of companies and different times. Fallgatter (2005), Freiling & Estevão (2005) and Hansen (2009) each present an overview of the current state of research on entrepreneurial success factors. All three studies (and actually this study as well) mention a study by Roure and Keeley (1990) which bases on empirical data of startups from 1974-1982 (Fallgatter 2005; Freiling & Estevão 2005; Hansen 2009). If this study identifies different success factors, than a study that investigates companies after the year 2000, it could merely be owed to the year of their startup phase. A similar argument as time can be made for location. While, for example, Honjo (2000) investigates success factors for companies in Japan, Colombo and Grilli (2007) do so for companies in Italy (Honjo 2000; Colombo & Grilli 2007). The locations of these ventures could also influence their success factors. This lacking differentiation in current research could explain the partly contradictory and trivial results that are criticized in the current discussion.

While it is not the focus of this study to develop a framework the differentiation of success factors should follow, it should however raise the discussion of more distinct analyses of success factors in entrepreneurial research. The following figure illustrates that success factors could differ by different types of ventures and different success measures.

		Success measure		
		Fast revenue growth	Early profitability	...
Type of venture (industry, country, year, ...)	E-Commerce (Europe, 2000-2013)	Success factors a1	Success factors b1	...
	Food retail stores (Europe, 2000-2013)	Success factors a2	Success factors b2	...
	...	...	...	...

**Fig. 14:** Differentiation of success factor research by types of ventures and success measures

#### 4.1.2 Overview the research area and findings about entrepreneurial failure factors

The previous section highlighted some of the challenges in determining causal chains of factors that lead to entrepreneurial success. The following section will take a closer look at the existing research especially of failure factors of startup enterprises. It will show that up to now there are only limited research findings available on this topic and will suggest an explanation why this is the case. Towards the end of this section, an overview of research results on failure causes will be presented.

In existing research an asymmetry between studies on success and failure factors can be observed, especially in the context of entrepreneurship research (Zacharakis et al. 1999; Freiling & Estevão 2005; Shepherd 2003; Freiling & Wessels 2010; McGrath 1999). There seems to be more literature and empirical studies dealing with success factors than failure factors. Even though it has a high economic significance, entrepreneurial failure is not well-researched (Freiling & Wessels 2010). Thornhill and Amit (2003) note, that “the mechanics of firm failure remains an understudied phenomenon” (Thornhill & Amit 2003, p.498). In fact, there is not even consensus about the definition of entrepreneurial failure (for an overview of definitions see Watson & Everett 1993). It can be argued that researching failure factors does not necessarily have to be more difficult than success factors. Freiling and Wessels (2010) assume the opposite and suppose that while success can be reached through countless ways, failure probably shows more homogeneous patterns in its causes.

However, researching entrepreneurial failure factors also is still full of challenges. Following, an overview of the most important challenges for researchers will be illustrated. Some of them are similar to the challenges of research on success factors. This overview is important for this research study as a basis for interpretation of the prior research findings about failure factors of ventures (c.f. section 7.2.2.1), for example in terms of understanding the separation between cause and effects. Furthermore, analyzing the challenges of prior empirical research is important to take advantage of the learnings for the empirical part of this study.

### **Separation of causes and effects**

A challenge for research is the separation of causes and effects of failure, especially in the context of entrepreneurship. Often, research findings tend to identify symptoms rather than root causes of problems (Freiling et al. 2010). For example, a shortage of liquidity leads to insolvency – by definition alone. However, it cannot necessarily be concluded that a lack of financing functions as the root cause of the bankruptcy. It is more likely that factors, like previous crises, lead to the shortage of liquidity. These crises could for example be of strategic manner, identifying unfavorable strategic decisions as the true root cause of the failure (Freiling & Wessels 2010). It could also be that one root cause becomes manifest in different symptoms. If the value creation process of a product or service is not aligned with the market needs, it can have different consequences based on the strategic decisions, i.e. the choice of the entrepreneur. Either the decision maker raises the price for the respective product and hence has to cope with potentially over-proportionally declining quantities and hence decreasing revenues. In this case, lacking market demand seems to be the cause of the failure. Or the decision maker keeps the price low and unsuccessfully tries to increase the efficiency of the value creation processes and thus to decrease the costs. If this decision leads to a failure, increasing prices of the input factors (labor, raw materials, energy, etc.), inefficient processes, etc. could seem to be the failure causes. However, in this example, the deficient value creation processes were the root cause of the failure, the decision of the entrepreneur a moderator and the lacking market demand or excessive costs only symptoms. The differentiation between symptoms and root causes gets even more difficult in late phases of crises. At this point in time, strategic problems often developed into operative problems (Hansen 2009; Freiling & Wessels 2010). Unfortunately there is very few literature available on early phases of entrepreneurial failure (Hansen 2009; Freiling & Wessels 2010). This is little surprising: since the explanandum is failure, it lies in the nature of this research that the observed company already failed and thus is in a late phase of a crisis.



## **Attribution of causalities in systems of causes**

It is difficult to identify causal chains of causes and effects of entrepreneurial failure (Freiling & Wessels 2010). Usually a root cause does not directly and instantly lead to failure, but through a series of events, representing the causal chain. The causes for failure are therefore usually very complex. Often there are different causes at once, which come from different sources and build upon each other. The different causes can be interdependent and can form self-reinforcing cause-effect-systems (Freiling & Wessels 2010; Bergauer 2003). An example to illustrate the difficulty to attribute specific causes to respective effects is about the founder and the company. The company and its founder are interwoven – or sometimes even more: they are identical in a very early phase of the startup. Therefore it can be very hard to differentiate between causes originating from the person of the founder and the rather abstract organization. Typical problems of the entrepreneur could lie in his/her abilities and experiences. Typical problems of the enterprise could lie in the industry it operates in, its finance structure, its legal form, etc. Problems which cannot be easily assigned to one of the two are the strategic direction and its organizational structures. Even the causes that can be assigned to one of the two entities are interdependent. The finance structure of the company results from the efforts and decisions of the entrepreneur, and vice versa the efforts and decisions of the entrepreneur will be based on the existing finance structure of the enterprise. This example shows that it is already very challenging to determine, if a problem has its root cause in the person of the entrepreneur or in the company itself. It is even more difficult to attribute an effect to a certain cause, because often there are opportunities to compensate a certain weakness with an according strength, or vice versa dilute a certain strength through a specific weakness (Roure & Keeley 1990). Colombo and Grilli (2007) showed, that founders of technology oriented startups often have lacking skills, but compensate for this fact by choosing team members with asynchronous abilities and experiences to close the qualification gaps. These could be reasons, why existing research is very heterogeneous and pertains to different elements in the causal chains of failure (Freiling & Wessels 2010). The heterogeneity can also be seen in the methodology applied (Low & MacMillan 1988). Early efforts of research in the fields were focused on data collection of a "'census-taking' type" (Low & MacMillan 1988, p.153). Further studies aimed at formal testing of a priori hypotheses to identify causal linkage between different variables and worked towards development of theory with formal methods and models (Low & MacMillan 1988). The different studies also come from a vast variety of backgrounds, for example economics, psychology, sociology, education, etc. (Low & MacMillan 1988).

### **Differentiation of success and failure factors**

Distinguishing characteristic success from failure factors is another challenge in this field of research. Many studies do not explicitly investigate failure factors, but instead see failure factors just as mirror-inverted success factors (Freiling et al. 2010; Hansen 2009). However, this is not necessarily valid. Nicolai and Kieser (2002) challenge the basic logic of this approach. Even though, in some cases it might be meaningful indeed, to explore the success factors in order to better understand factors for failure, it would generally be more fruitful to directly investigate the causes for failure (Freiling & Wessels 2010; Sitkin 1992). One obvious reason for this is, that research of success factors always suffers a “survivor bias”, since only companies which are still existing are part of the investigation (Nicolai & Kieser 2002; Fallgatter 2005). Another argument is, that while success can be reached on numerous ways, failure factors are supposed to have clearer patterns (Freiling & Wessels 2010). Therefore, research should either clearly focus on success factors or on failure factors, and precisely distinguish between those two.

### **Time period of the company**

Since the startup community is a very dynamic environment with rapid developments and changes (Fallgatter 2005) it is important to compare only companies in the same time period. As mentioned before, a high-tech company in the 1980s might face completely different challenges than one in the 2010s. Many meta-studies seem aim to identify all-embracing, everlasting truths about failure factors. However, it is very likely that those change in the different time periods, especially in highly dynamic industries like high-tech. As discussed, the currently available literature reviews of success and failure factors does not explicitly differentiate between those eras. The studies include empirical surveys from all the way back to the 1970s (e.g., Roure & Keeley 1990) up to the current days (Fallgatter 2005; Freiling & Estevão 2005; Hansen 2009). Many market changing events occurred in the last decades, like the e-commerce bubble in the 1990s, its burst in the 2000s, the financial crisis in the 2010s, etc. Therefore failure factors can only be compared within the same time frame.

## **Systematic challenges in empirical research**

Compared to success factors, failure factors are particularly difficult to research for different reasons. There are systematic challenges in practical implementation of empirical research on failure causes for companies. One important challenge is the subject of investigation itself. If failure of a company is defined as its liquidation, then once a company failed, it does not exist anymore – by definition. In this case the research object dissolves once it becomes interesting for investigation. So it can only be analyzed historically but not observed live. The historic analysis can be based on available explicit or implicit data. Easily available, but not very detailed historic data is for example available from excerpts from the commercial register. Other potentially more insightful explicit information, like data about the detailed cost structure, information on the team members or background facts about crises is harder to find and usually requires access to insiders – at best the founders themselves. The same applies for implicit information which does not exist in a documented form. This can be gathered from persons who were directly involved in the company, for example suppliers, investors or again the founders themselves. However access to failed founders is not easy (Zacharakis et al. 1999; Shepherd 2003; Freiling & Estevão 2005; Freiling & Wessels 2010; McGrath 1999). This can have different reasons. One is that it is practically difficult to contact the founders after the enterprise has dissolved since their contact details, like the company address and the email addresses might have dissolved with the company. Another reason is that failed entrepreneurs might not be willing to report on their failure. Talking about one's success clearly seems to be more fun than talking about one's failure. Even after achieving to contact failed founders who are willing to talk about their failure, new empirical problems arise. Since information from the founders is highly subjective, problems of distorted perception can arise (Zacharakis et al. 1999; Shepherd 2003; Freiling & Estevão 2005; Freiling & Wessels 2010; McGrath 1999). There is a whole set of well-researched biases human beings tend to follow. One is that people tend to account successes to their own actions, whereas failures to external forces (self-serving bias, see e.g., Campbell & Sedikides 1999). This can make it hard to extract the real causes for failure from the statements of the founders (Franco & Haase 2010). Another challenge is connected to the determination of causalities. As argued above, usually there are long causal chains which over time lead to failure in their final consequence. Therefore it could be required to conduct longitudinal studies to observe these causal chains in reality (Low & MacMillan 1988). This type of research takes a lot of time and entrepreneurs who are willing to be observed over a longer period in time (Low & MacMillan 1988). Also, since at the beginning of the longitudinal study it cannot be foreseen yet which

company would eventually fail and if so, how long it would take, a part of the investigated sample would drop out of the failure research, requiring an even bigger sample. These reasons show the difficulties of longitudinal studies on entrepreneurial failure and that might explain why there are hardly any of those studies to be found in existing literature (Freiling & Wessels 2010). Another challenge of empirical research in this field is that the research object is in a highly dynamic environment. Events that could potentially change the destiny of the company occur in high number and with high frequency. Therefore the researchers would have to be very close to their research object to take all of these changes and events into consideration. In reality this is barely possible, unless the researcher is actually part of the founding team.

#### **4.1.3 Delimitation of further literature in related areas**

The focus of this research is on the moment of decision for the potential entrepreneur whether to found a company or not and the characteristics of the entrepreneurs who actually do it. The earlier steps in the process are not in scope of this study. To find out more about earlier steps in the entrepreneurial process (c.f. e.g., Kelley et al. 2011; Sánchez López 2012; Bhawe 1994), for example about the characteristics of individuals who could generally imagine founding a company, a starting point could be the research of Delmar and Davidsson (2000). They discovered that the age, sex, education, experience and employment status of the individual and the existence of role models have an influence on the probability of taking entrepreneurship into consideration. Other factors, like marital status, the number of children in the household and length of employment experience had no influence in their study (Delmar & Davidsson 2000).

The motives why entrepreneurs decide to found companies, is also not in focus of this research. There is various research investigating this topic. Most studies agree that the most important motives are expectations of independence, self-realization, financial gains and recognition/status (GfK et al. 2012; Carter et al. 2003; Manolova et al. 2008). There are also differences between men and women. Men are by trend more motivated by status and financial success than women (Manolova et al. 2008; Carter et al. 2003). However, the motivation why entrepreneurs found their companies does not have an influence on their economic success (Caliendo & Kritikos 2010; Brixy et al. 2011), even though differences according to the type of their businesses can be found. Founders with higher motivation to become an entrepreneur tend to found more innovative businesses, while others who found

out of a lack of alternatives tend to be more imitating (Brixy et al. 2011). Since the foundation motives do not seem to be important for the success of the venture and the focus of this study are rather the motives why potential entrepreneurs refrain from founding a company, these aspects are only peripherally considered in this research.

## **4.2 Overview of existing research about fear in entrepreneurship**

Fear plays a critical role in the entrepreneurial process, especially when it comes to taking the decision whether to found a company or not. It is the focus of this study to better understand the origins, nature and effects of fear in the entrepreneurial process, especially before foundation. This is highly relevant, as it helps to identify leaks in the entrepreneurial venture creation process (c.f. e.g., Kelley et al. 2011; Sánchez López 2012; Bhawe 1994), which prevent startups from foundation in the first place. While there are different root causes of failure in this process step, the assumption is that forward-looking fear of failure in next process step (anticipation of failure) plays a particular role.

This section will give an overview of existing research in this field to build on in the following steps of the research endeavor. The first part of this section will give an overview of the state of research on emotions in the context of economics in general and entrepreneurship in particular. The second part will perform a deep-dive into the emotion of fear in particular. It will illuminate the phenomenon from different perspectives. First, it will present the view of the psychological discipline, where fear is mainly investigated for the purposes of medical and psychological treatment. The following part will present the view of economic research, where decision-making under risk and behavioral aspects play an important role. In the third part of the section, the view of the subdivision entrepreneurship research on fear will be illustrated – event though, this area is not well-researched yet. The fourth part will summarize the findings and conclude with a definition of fear to be used in this research study. Building on this definition, the final part of the section will investigate the emotion of fear in detail and decompose it into its components.

#### **4.2.1 Existing research about emotions in general in business studies and entrepreneurship research**

Research studies on emotions in economics are rare (Foo 2011). Especially in the field of entrepreneurship research, emotions are a neglected concept (Goss 2008). However, there are a few research contributions, which will be presented in the following sections. The first section will give a brief overview of the *definition of emotions* in economic and entrepreneurial research, the second section a detailed overview of research findings about the *role of emotions* for entrepreneurial decision-making.

##### **Definition of emotions in business studies and entrepreneurial research**

Even though there is limited research in the field, “there is a broad consensus, [...] that emotions are central to mental and social life, because they are our fundamental mediators between inner and outer worlds” (Oatley 1999). Therefore, it is surprising that up to now no definition of emotion has emerged, that is accepted interdisciplinary (Welpé et al. 2012) or at least within one discipline. Kleinginna & Kleinginna (1981) collected 92 (!) used definitions of emotions and categorized them into 10 groups. Many definitions build on early works of the pioneers of emotional psychology Watson (1913) and William (1890). However, there are comprehensive working definitions, which can be reasonably used in the context of economic and entrepreneurial research (Welpé et al. 2012). This study will build on the working definition by Meyer et al. (2001), which is also used in studies in related field to this study, e.g., by Welpé et al. (2012). According to this definition, emotions are seen as a person’s current psychological states. The states are differentiated between emotional episodes, which refer to a current emotional reaction, for example anger, and emotional dispositions, which refer to general character traits, for example sensitivity. Usually emotional episodes are characterized by having a limited duration, versus emotional dispositions are chronicle. Emotions have a certain quality and intensity. They are directed towards a specific object. Usually an individual is happy *about* something or afraid *of* something. Here it does not matter, if the object, causing the emotion is real or fictional, already existent or just anticipated for the future (Watson 1913; Meyer et al. 2001; Welpé et al. 2012). Fear of failure in the context of this study, would be such an anticipated object. Persons in an emotional state are usually influenced by their emotions, which manifests in certain psychological and behavioral changes (Watson 1913; Meyer et al. 2001; Welpé et al. 2012). The term *emotion* is

not sharply differentiated from the related terms *mood* and *affect*. Affect is often used synonymously in literature, but sometimes considered to be a higher level feeling than emotion (Meyer et al. 2001; Welpe et al. 2012). Moods are often regarded as a kind of emotional noise, which is less intense than emotions, but longer lasting. They do not necessarily result from a certain object as stimulus (Barsade & Gibson 2007; Meyer et al. 2001; Welpe et al. 2012). Therefore, they could also be seen as an in-between of state emotions (episodes) and trait emotions (dispositions).

There is more agreement in literature according to the different types of emotions. However their categorization and hierarchical classification are controversial. The PANAS-X (Watson & Clark 1999) is a widely used guideline which contains terms for the different states of emotions and suggests a hierarchical categorization. It also provides recommendations about how to survey the items. The PANAS-X suggests the four distinct basic negative emotions *fear*, *hostility*, *guilt* and *sadness* in the top category. For fear, which is in focus of this study, the terms *afraid*, *scared*, *frightened*, *nervous*, *jittery* and *shaky* are suggested to describe and to survey this emotion (Watson & Clark 1999). These terms were used for this research endeavor. The following section will evaluate the implications of emotions in entrepreneurial situations.

### **The role of emotions for entrepreneurial decision-making**

There is very little research literature according to the concept of emotions in economics, and even less in the field of entrepreneurship. The role of emotions is a neglected in entrepreneurial research (Goss 2008; Foo 2011). However, this research field is increasing in the recent years. The application in entrepreneurial education to manage emotions to avoid failure gains increasing attention as well (Shepherd 2004). It gets more and more accepted, that emotions are a critical factor for the entrepreneurial process (Cardon et al. 2005; Foo 2011). „[E]xamining the individual’s inner processes seems particularly important” (Welp et al. 2012). Therefore researchers call to include emotions, affect and feelings in future entrepreneurial research (Mitchell et al. 2007; Foo 2011).

Existing research studies cover different steps along the entrepreneurial process, especially the decision-making process whether to found a company or not. This process starts with the (1) *perception* of a certain opportunity or idea. Since individuals use emotions as source of information (c.f., affect as information theory: Clore et al. 2001; Gohm & Clore 2002), emotions can influence the perception of a risk situation (Schwarz & Clore 1996; Ellsworth &



Scherer 2003; Ellsworth & Smith 1988; Foo 2011). In an empirical study, Foo (2011) found that the risk perception of a given situation is lower for participants induced with anger or happiness than for participants induced with fear or hope. The perception of an entrepreneurial opportunity is presumably influenced by the emotional state of the potential entrepreneur. Based on this perception, the (2) *evaluation* of the opportunity follows. Here, the subjective evaluation of the situation is important, not only the objective opportunity (Welpel et al. 2012; Simon et al. 2000). One part of the subjectivity of the evaluation is driven by cognition effects. This area is well-researched and represents the focus of research of irrational behavior in entrepreneurial decision-making (Baron 1998; Simon et al. 2000; Mitchell et al. 2007; Foo 2011). The other, yet less researched part is distortion of a rational evaluation by emotions (Foo 2011). Emotions influence the way individuals process information and hence shape not only their perception of a situation but also their evaluation (Isen & Labroo 2003; Foo 2011). The evaluation of an opportunity leads to the (3) *exploitation decision*. This decision is again influenced by the nascent entrepreneurs' emotions (Clore et al. 2001; Gohm & Clore 2002). Feelings like fear, joy or anger are determinants of entrepreneurial exploitation (Welpel et al. 2012). Empirical evidence shows, that happy and angry people rather choose options in risk situations, which are characterized by a higher value in the case of a win in the bet, but a lower probability of winning (Foo 2011). This effect could support entrepreneurial decisions as typical high risk bets. Once the exploitation decision is taken and the business is founded, the entrepreneurs struggle with (4) *implementation* of the venture. In this step, emotions play an important role, as emotions influence the personal performance of an individual. William Shakespeare proposed: "*A merry heart goes all the day, Your sad tires in a mile-a.*" (William Shakespeare, The Winter's Tale, Act IV, sc. 3, 1623). This quote also holds true for entrepreneurs taking on a venture. Entrepreneurs with positive feelings generally put more effort in their venture (Foo et al. 2009). But not only do they work harder, they also work better. Emotions, affect and moods influence the "within-person performance" (Beal et al. 2005). There are a few research studies investigating, which areas of performance are influenced. Isen (2001) shows, that positive emotions improve the problem solving and decision-making capabilities. They can cause "cognitive processing that is not only flexible, innovative, and creative, but also thorough and efficient" (Isen 2001). Oaksford and colleagues (1996) showed in experiments of exemplary tasks, e.g., the Tower of London task (Shallice 1982), that positive mood leads to better performance of the participants. Labroo and Patrick (2009) find that positive mode enhances the entrepreneur's ability for abstract thinking and allows to see the big picture and future



goals, whereas individuals in a bad mood tend to focus on proximal and immediate concerns. This increased personal performance through positive emotions can lead to superior achievement in the venture (Goss 2008). The same applies to success in life in general. Lyubomirsky et al. (2005) give an overview of numerous studies, which conclude that "happy individuals are successful across multiple life domains, including marriage, friendship, income, work performance, and health" (Lyubomirsky et al. 2005). They do not only find a correlation, but suggest a causality: "[The] success link exists not only because success makes people happy, but also because positive affect engenders success" (Lyubomirsky et al. 2005). The argumentation above shows that emotions can influence the entrepreneurial process in each step, from perception, evaluation, decision and exploitation/implementation of an opportunity. Since these steps build upon each other, it is hard to sharply separate the singular effects in each step, but the overall view does not leave any doubt that emotions are crucial in this process.

A major part of literature on emotions in entrepreneurship focuses on positive emotions, like happiness, and their connection to venture creation and success. Cardon et al. (2009) give an overview of existing studies in the field of positive emotions, especially passion, in entrepreneurship. Their summary will be exhibited in the appendix. This research study, however, focuses on the flipside of the medal and investigates the negative emotion of fear and its connection to prevented venture creation and entrepreneurial failure. The following section will therefore give an overview of the discussions of the emotion of fear in particular in research of various disciplines.

#### **4.2.2 Existing research about fear in particular in entrepreneurship research**

The following section will give an overview of the emotion of fear and its reflection in current literature in the different disciplines. First, the view of psychologists, then the view of economists on the role of fear will be illustrated. The economists' view will then be narrowed down to the area of entrepreneurship research. The section will conclude with an understanding of the concept of fear to be used in this research endeavor.

#### 4.2.2.1 The role of fear in psychological research

Fear plays an important role in clinical psychology and psychiatry and is therefore subject of psychological research. This section will present the psychologists' view on fear.

First of all, fear is an emotion that is induced as one form of reaction to a threat of punishment (Gray 1987). In this context, "punishment" is defined as "any stimulus which members of the species concerned will work to terminate, escape from, or avoid" (Gray 1987). Fear can therefore be defined as the sense and anticipation of dread and foreboding in response to a threatening event, for example of being attacked, of feeling pain, etc. The anticipation of the threat is the stimulus, which causes the fear reaction. This stimulus can be of various different types. It could be an actual threat, like an approaching dangerous animal in a forest, or a hypothetical threat, like the chance, that a dangerous animal could be showing up in the forest. It could be an immediate threat, like being in the water and fearing to drown, or a future threat, for example of running out of fuel in an inhabited desert (Simon et al. 2003; Ruiter et al. 2001; Gray 1987). Ruiter et al. (2001) distinguish between cognitive responses, which refers to threat perception, and emotional responses, which refers to fear arousal, to fear appeals. The intensity of the fear reaction depends on the stimulus and the susceptibility to the stimulus of the individual (Gray 1987). Fear can be innate and based on certain instincts or acquired during one's life. Experiments with children aged from zero to six years revealed the development of different fears. Soon after birth, children react fearful on stimuli like noise, pain, falling, unexpected movement and light, while they develop fear reactions on animals, robbers, traffic or fire only in later years (Gray 1987). The susceptibility for fear is inheritable, as experiments with rats showed, where generally fearful and fearless rats could be bred (Gray 1987).

In psychological understanding, fear is different from the emotion *anxiety*. The latter typically occurs without a concrete threat as external stimulus. "Anxiety is the same distressing experience of apprehension and foreboding as fear except that it derives from an unknown internal stimulus, inappropriate or excessive to the reality of the external stimulus or concerned with a future one" (Simon et al. 2003). Even though, fear and anxiety have different causes, they can be indistinguishable in practical clinical psychology (Simon et al. 2003). It is also possible, that the two emotions are connected. Individuals can experience fear of anxiety. This emotional state is called "anxiety sensitivity" (Taylor 1999; Blais et al. 2001) and "is the fear of anxiety sensations, which arises from beliefs that these sensations have

harmful somatic, social, or psychological consequences” (Taylor 1999). Anxiety is often divided into *trait anxiety* which refers to a chronic background feeling of anxiety independently of the current situation and *state anxiety* which refers to an acute interference of the feeling of anxiety and the current situation (Breton 1989). Apart from fear and anxiety, the category *fear as a character trait* is sometimes distinguished. It refers to the susceptibility to fear of an individual. (Breton 1989). In clinical psychology different treatments can be used for fear and anxiety. Obviously, fear of concrete stimuli, for example spiders, has to be treated using different approaches than anxiety, as a general emotional indisposition without a concrete external cause (Simon et al. 2003).

Fear and anxiety are hard to distinguish and hard to sharply define, because “[f]ear and anxiety are obviously overlapping, aversive, activated states centered on threat” (Öhman 2008, p.710). There are various different differentiation criteria used in literature. “The ubiquity and controversial status of fear and anxiety have made them central topics for research and reflection; they have generated a voluminous literature” (Öhman 2008, p.709). The following table will try to capture the most common differentiation criteria from literature.

	<b>Fear</b>	<b>Anxiety</b>	<b>Exemplary sources</b>
<b>Cause</b>	sense and anticipation of dread and foreboding		Gray 1987, Simon et al. 2003
<b>Symptoms</b>	somatic symptoms of tension, feeling of dysphoria		American Psychiatric Association, 2013
<b>Existence of stimulus</b>	form of reaction to a threat of punishment/stimulus	stimulus not necessarily required	Gray 1987, Simon et al. 2003
<b>Type of stimulus</b>	identifiable eliciting stimulus (actual or hypothetical)	unknown internal stimulus or no concrete stimulus	Gray 1987, Simon et al. 2003
<b>Timing to stimulus</b>	poststimulus	prestimulus	Öhman 2008
<b>Reaction to stimulus</b>	coping behavior (e.g., escape, avoidance)	resignation, because coping failed	Epstein 1972

**Fig. 15:** Differentiation between fear and anxiety

There are a number of symptoms caused by both fear and anxiety. They can be cognitive, affective, behavioral and physical. The physical reactions include the heart rate, sweat, facial expressions and skin conductance level (Simon et al. 2003; Rhudy & Meagher 2000; Gray 1987). Gray (1987) argues from a evolutionist standpoint based on Darwin (1809-1882), that the physical expressions could function as communication medium for the social group. Fear also decreases pain reactivity, whereas anxiety increases reactivity (Rhudy & Meagher 2000). There are various approaches in clinical psychology which try to measure the symptoms of fear and anxiety as a basis for treatment. To do so, the components are often divided into actively reported (by the patient) and passively observed (by the clinician) components (Buss et al. 1955). Standardized tests to measure anxiety include the State Trait Anxiety Inventory

(Hamilton 1959; Buss et al. 1955; Spielberger et al. 1970) or the Taylor Scale of Manifest Anxiety (Taylor 1956; Taylor et al. 2005; Taylor 1999). There are further investigations of fear and anxiety and their symptoms from neuroscience, which are for example analyzing the physiological sources from the autonomic nervous system and the endocrine system (Gray 1987; Gray & McNaughton 2000), or the important role of corticosteroids (Korte 2001).

An important symptom is the consequently adapted behavior. Since fear is the response to a recognized danger, the most likely reaction of an animal is “to try one of the three Fs – freezing (keeping absolutely still and silent), flight, or fight” (Gray 1987; Gray & McNaughton 2000). However, animals can also learn other behavioral reactions on certain threats, which will terminate the danger. Human beings basically react in the same way (Gray 1987). The type of reaction on certain fears, and hence threats, have developed according to advantages in evolution (Olsson & Phelps 2007). For human beings, there are generally three different behavioral systems, which can react on fear: the cognitive and verbal system, the physiological system and the motoric system. All of them can react independently on fear, for example after a therapy on snake fear, patients can show an adapted motoric behavior with less fearful reactions on snakes, but still a cognitive and verbally stated original amount of fear (Hugdahl 1981; Rachman 1978). In total the behavioral systems all target an avoidance of the situation which caused the fear (Rachman & Hodgson 1974; Bodenhausen et al. 1994). The desire to be sure to avoid the potentially dangerous situation, could be the cause for the risk aversion, which can be observed as a behavioral reaction on fear. People, who face fear or anxiety express “pessimistic risk estimates and risk-averse choices” (Lerner & Keltner 2001). This could also be a result of fear of the unknown and the uncertain, which can both be observed as typical stimuli for fear (Burton 2011).

#### **4.2.2.2 The role of fear in economic research**

The role of emotions in general and fear in particular is not in the focus of today’s economic research (Elster 1998). When research on economic decision-making developed the view of the *utility* of a decision (Bentham 1907), the emotions were still regarded as important, since the utility was seen as “the net sum of positive over negative emotions” (Loewenstein 2000). However, when the view of *preferences* in decision-making gained importance (e.g., Kahneman & Tversky 1979), the role of emotions has taken a back seat (Loewenstein 2000) and the influence of cognition gained importance (Elster 1998). The prevalent view ever since is that the evaluation of a decision is rather based on the individual preferences than the

overall happiness (Loewenstein 2000). However, in the recent years, a "small revival of interest in emotions among economists" (Loewenstein 2000) emerged (see e.g., Elster 1998).

Researchers in the fields of economics and psychologically-based behavioral sciences set different emphasizes in their studies. Economists focus on the effects of anticipated emotions, like regret or disappointment as an outcome of a decision situation. They neglect the emotional state at the point of decision-making. Psychologists and researchers in the field of behavioral sciences rather focus on immediate emotions, which are experienced at the time of decision-making (Loewenstein 2000). However, these two approaches cannot be completely distinguished, as for example the fear of an anticipated emotion, for example the regret of a failed venture, can cause immediate emotions, like fear of founding a company. Unfortunately, a holistic view of the interaction of emotions is not well-researched. Furthermore, studies in the field of psychology majorly focus on the cause of emotions, rather than their effect on behavior or decision-making (Elster 1998). When it comes to this area, existing psychological studies mainly concentrate on cognition, rather than emotion (Elster 1998). Behavioral economics builds on this view, as they "borrowed mainly from cognitive psychology" (Elster 1998). The widely regarded Prospect Theory (Kahneman & Tversky 1979) is one example for such a cognitive view.

However, a small research branch has emerged, which takes the role of emotions as a cause of certain behavior into account. This research area usually focuses on decision-making in risk situations. General emotions but also fear and anxiety are taken into account. Unlike in psychological research, the definition of the terms *fear* and *anxiety* are not selective and are largely used synonymously. Kallmen (2000) investigated that emotions in general and anxiety in particular have an influence on decision-making in risk situations. Among other emotional states (locus of control and self-efficacy), anxiety has an effect on risk perception. Loewenstein et al. (2001) support this view in their "risk-as-feelings hypothesis, that highlights the role of affect experienced at the moment of decision-making" (Loewenstein 2000). Here, they build a link between cognition and emotion and suggest, that "emotional reactions to risky situations often diverge from cognitive assessments of those risks. When such divergence occurs, emotional reactions often drive behavior" (Loewenstein 2000). There are sporadic studies, which aim to validate the theoretical thoughts on the influence of emotions with empirical observations. Lo et al. (2005) investigated the importance of emotions for real-time trading in financial markets and found, that "extreme emotional responses are apparently counterproductive from the perspective of trading performance" (Lo

et al. 2005). This is quite comprehensible, if you view emotions as irrational and hence prejudicial for rational decisions. This study is one of the few ones, which focus on the current state of feelings in the moment of decision-making. Other studies, which focus on the general traits of feelings, confirm the association of successful trading and low key emotions and found that successful traders are "emotionally stable" (Fenton-O'Creevy et al. 2004). While emotions can generally influence rational decision-making, certain kinds of emotions can impact different aspects of decision-making. Generally "people fear change and the unknown" (Cao et al. 2009) and react to this fear stimulus with an avoidance reaction. Such an emotionally distorted decision-making can be observed in stock prices, for example as a bias towards home and local stocks to avoid the unknown or portfolio under-diversification, to avoid change (Cao et al. 2009). There are also attempts in marketing to address the emotion of fear in marketing communication to influence consumer decision-making (Ray & Wilkie 1970; Spence & Moinpour 1972; Stuteville 1970; Wheatley 1971). Since fear can be a very strong emotion, according appeals can be highly effective. Stuteville (1970) illustrates this by the anecdotal example of public executions.

As shown above, there are branches in current research in economic behavioral sciences which investigate the influence of emotions on decision-making in risk situations. Fields of study in this area are financial markets and startup ventures, as both are highly uncertain environments. According to the emotion of fear, two concepts have emerged, which describe the concrete effects of fear on decision-making: the concepts of *anxiety in the face of risk* (Eisenbach & Schmalz 2013) and *cold feet* (Epstein & Kopylov 2007). Both are describing dynamic changes of risk preferences. This time perspective is connected to changing emotional states, for example increasing fear towards the moment of decision. The change of risk preferences over time can therefore also be interpreted as change of risk preferences depending on the current emotional state of fear.

### **Anxiety in the face of risk**

The concept of *anxiety in the face of risk* (Eisenbach & Schmalz 2013) describes dynamically inconsistent risk preferences towards the moment of resolution of uncertainty. People are willing to take a higher risk a bet when the moment of resolution of uncertainty is still far away. When the moment gets closer, the risk preference changes towards higher risk aversion. Since the bet and the available information is still the same, this behavior shows inconsistency in the risk preference of a human agent. This moment of resolution of uncertainty can be but

does not have to be equal to the moment of decision, for example when choosing a lottery ticket that immediately shows to be a winner or a loser. Usually, these events are not at the same time. In financial trading, for example, the purchase of a share in the hope of a favorable annual report represents the moment of decision, whereas the publication of the report represents the resolution of uncertainty. Anxiety in the face of risk describes the phenomenon of increasing fear and subsequent risk aversion towards the moment of resolution of uncertainty. The closer the moment gets, where uncertainty is released, the more anxious an agent gets (Eisenbach & Schmalz 2013). A striking example of this effect can be seen with parachutists. The closer they get to the moment of the jump, the more anxious they get and the higher they estimate their risk. Even though the decision of making the jump is already taken way before, at latest, when they entered the plane, their anxiety peaks when the moment of resolution of uncertainty approaches (Fenz & Epstein 1967; Roth et al. 1996). This phenomenon influences his/her decision-making towards less risky choices (Eisenbach & Schmalz 2013) and can hence explain “overtrading and price anomalies around announcement dates, which are found empirically” (Eisenbach & Schmalz 2013).

This concept of anxiety influencing decision-making can be applied to the decision whether to found a company or not as well. Different events can be seen as the moment of resolution of uncertainty in this context. If the uncertainty of decision is, whether the founded company will be successful or not, the resolution of uncertainty is much later than the decision situation. However, it can be argued that the uncertainty of the decision is, whether the potential entrepreneur will actually break his/her path of staying in his/her previous occupation or take on the challenge to found an own venture. In most cases, there are concrete outcomes at or close to the moment of decision, for example the cancellation of a previous job. If this is seen as a resolution of uncertainty, and this study supports this view, the concept of anxiety in the face of risk can be applied. According to the decision whether to found a company or not, the dynamic change in risk preference would lead to increased risk aversion and increased fear the closer the moment of resolution of uncertainty, and in this case the moment of decision, comes. This risk aversion would counteract the will to found a company and might result in delaying the decision or abandoning the plan to become an entrepreneur. Since in most cases, there is no hard deadline when to decide to start a company, it seems likely, that anxiety in the face of risk causes the potential entrepreneur to postpone his/her decision to found over and over again. This might eventually lead to a situation, where founding a business just stays a dream, which one will live up to “one time”.

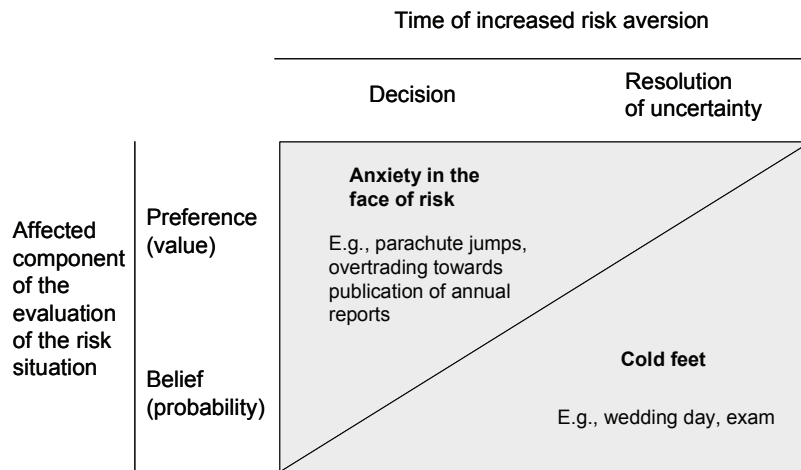


Eisenbach and Schmalz (2013) show various countermeasures and de-escalation devices to cope with the effect of anxiety. First of all, outsourcing the decision to a rational agent who is less emotionally attached to the situation could eliminate the whole effect. This effective countermeasure “can explain costly delegation of investment decisions” (Eisenbach & Schmalz 2013) which can actually be observed. Also other opposing cognitive distortions could work as countermeasure, for example overconfidence or over-optimism (Eisenbach & Schmalz 2013). Entrepreneurship research shows, that both of these cognitive distortions increase the probability of founding a company (Koellinger et al. 2007; Arenius & Minniti 2005; Cooper et al. 1988). Applying the concept of anxiety in the face of risk, this could be explained not only by the overestimation of business plans, etc., but also simply by posing a counter-pole cognitive distortion against anxiety. A further countermeasure against anxiety could be to surround oneself with a team that only reflects selective truths and therefore works as a positive contrast to the negative feelings of anxiety (Eisenbach & Schmalz 2013). Another countermeasure according to one’s environment is to install commitment devices, which increase the cost of retreating. A striking example could be, to tell all of one’s friends of a planned bungee jump. This installed side bet increases the cost to chicken out and not jump when anxiety begins to kick in towards the moment of resolution of uncertainty. This commitment device makes it more costly for one’s future self not to do what one’s present self wants it to do. If anxiety is too much of a barrier in situations of big decisions, it could also help to divide one big decision in multiple smaller ones (Eisenbach & Schmalz 2013). This approach is particularly suitable for the foundation decision, as it lowers the barrier of taking a life-changing decision. A foundation decision can superbly be split down in multiple smaller decisions and actions. For example, a potential founder could register his/her company first and start looking for funding but still stay in his/her current occupation. Then he/she could start building up operations slowly and hiring the first employee. Then he/she could choose to take a sabbatical in his/her previous job or reduce to part time. Such a stepwise decision would divide one big decision in multiple less important ones, each with a lower burden, which can be overcome more easily. In fact, entrepreneurship research shows that the probability to found a company increases, when gestation actions are performed, for example investments are done, employees are hired, fulltime work is invested, etc. (Reynolds & Miller 1992; Gatewood et al. 1995; Reynolds 1997). These empirical findings could be explained by the concept of anxiety in the face of risk.



## Cold Feet

A similar, however different concept of dynamically changing risk preferences is the concept of *cold feet* (Epstein & Kopylov 2007; Gilovich et al. 1993; Armor & Taylor 2002). It is defined as an increase of risk aversion of a decision-making agent, which is caused by temporal proximity to the moment of decision (Epstein & Kopylov 2007). Whereas anxiety in the face of risk describes the phenomenon of a higher risk aversion towards the moment of resolution of uncertainty, cold feet describes the same effect towards the moment of decision. “Individuals often lose confidence in their prospects as they approach the ‘moment of truth’” (Epstein & Kopylov 2007). Illustrative anecdotal evidences for the cold feet effect include weddings and exams. While fiancés expect the probability of a happy marriage quite high before and after the wedding, on the wedding day itself, so the moment of decision, this estimated probability suddenly drops (Epstein & Kopylov 2007). The same applies for students who estimate themselves to be well prepared for an exam, but who suddenly get worried about their performance on the exam day just before taking the test (Gilovich et al. 1993). Interestingly, the cold feet effect influences the probability (the belief) of a risk situation, whereas anxiety in the face of risk influences the preference (the value). The bridegroom would estimate the probability of happy marriage suddenly as more negative (Epstein & Kopylov 2007), while the parachutist would suddenly value the potential outcome as more negative or suddenly realize how bad such a negative outcome of the lost bet would be (in this case: death) (Fenz & Epstein 1967; Roth et al. 1996). The countermeasures against the cold feet effect are similar to the ones against anxiety in the face of risk. For example, the delegation of investment decisions to less emotionally involved agents or the installation of a side bet which increases the costs of bailing out, for example a wedding invitation to friends and family, can help to overcome the cold feet effect (Epstein & Kopylov 2007).



**Fig. 16:** Concepts of dynamically changing risk evaluations (based on Eisenbach & Schmalz 2013; Epstein & Kopylov 2007)

The belief distortions of *dynamically changing preferences* described above can be hard to distinguish from *dynamically inconsistent preferences*. The main difference is that for dynamically changing preferences, the bet stays the same but the evaluation changes over time. For example, the probability of dying at a bungee jump always stays the same; however it is evaluated differently by the jumper some time before the jump versus immediately before the jump. Dynamically inconsistent preferences describe the evaluation of different bets, however for each of the bets, the evaluation stays constant over time. Those different bets could be two lotteries, one with a payout right after the win, the other with a payout one year after the win. For example, studies observed a “greater level of risk aversion for lotteries resolved and paid in the present than in the future” (Noussair & Wu 2006). This situation shows a consistent risk preference between lotteries which are resolved and paid in the future and in the present (Noussair & Wu 2006). In empirical studies these two concepts can be hard to distinguish, as it is often not clear, if additional information over time actually changed the bet, or if the bet stayed equal but the evaluation changed over time.

The discussed concepts also have to be distinguished from *dynamically inconsistent behavior*. A common example is laziness. For example, the situation of taking a run might be evaluated positively on the day before, however immediately before the run, the situation might not seem that appealing any more. This is a dynamically inconsistent behavior, which shows hyperbolic discounting of future values to the favor of present ones. Moreover, this concept does not apply to risky environments. In the given example, taking a run cannot be compared to a bet with risky outcomes. Hence the concept of laziness is not helpful for entrepreneurial or financial decisions.

Since the decision whether to found a company or not constitutes a risk situation, the concepts described above can play an important role.

#### **4.2.2.3 The role of fear in entrepreneurship research**

As shown above, research of fear in the entire field of economics is very limited, so it is no surprise, that there are hardly any research studies investigating the role of fear in entrepreneurship. This section will give an overview of the existing studies dealing with this topic.

The general assumption, that fear influences the risk perception of decision situations under uncertainty, which is discussed in the field of economical behavioral sciences, is shared in the context of entrepreneurship as well. Fear leads to a higher risk perception and a more negative evaluation of an entrepreneurial situation (Foo et al. 2009; Lerner & Keltner 2000). This evaluation might lead to lower exploitation of entrepreneurial opportunities (Welpé et al. 2012). Additionally to a distortion of risk perception through the emotion of fear, fear can also cause a behavioral change towards threat avoidance. This defense mechanism against the unknown and uncertain reduces entrepreneurial exploitation (Welpé et al. 2012; Krause 2004; Gray 1987, p.27; Clore & Palmer 2009; Baron 2008). Individuals who experience fear, tend towards a prevention focus, instead of a focus on opportunities, which negatively influences decisions to take on entrepreneurial activities (Brockner et al. 2004; Higgins 2005). Shepherd (2003; 2004) assumes that the fear of entrepreneurial activity is caused by fear of failure and suggests that a reattribution of fear of failure can reduce fear and hence encourage entrepreneurial activity. The nascent entrepreneurs should learn to confront their fears, be aware of them and learn to deal with them (Shepherd 2003; Shepherd 2004). Changes in risk perception, tendency towards threat avoidance and prevention are different sides of the same medal, with the key insight, that fear reduces entrepreneurial exploitation. The reasons and mechanisms behind this observation are not well-researched yet.

There are also a few empirical studies focusing on fear in entrepreneurship, or at least including this aspect. The Global Entrepreneurship Monitor (Kelley et al. 2011; Brixey et al. 2011) and the according country reports survey the fear potential entrepreneurs face. The findings of the study are that fear of failure hinders many potential entrepreneurs from actually founding a company. Fear of failure is particularly high in Germany. In other countries, where the general foundation activities are higher, fear of failure is less incisive.

However, if this observation reflects a causality or a selection bias is open. Additionally, the importance of fear of failure as a foundation barrier further increased in the last years (2009-2011) (Brixy et al. 2011). There are also certain findings about the characteristics of the individuals who fear. For example, fear of failure has a stronger effect on women to refrain from founding a company, than for men. In Germany in 2011, 56% of women and 46% of men would refrain from founding a company, because of fear of failure (Brixy et al. 2011). The amount of fear of failure individuals face is also not evenly spread across Germany, however apart from a difference between eastern (fear of failure is less of a barrier for foundation) and western Germany, there is no noticeable pattern (Brixy et al. 2011).

#### **4.2.3 The role and definition of fear used in this research study**

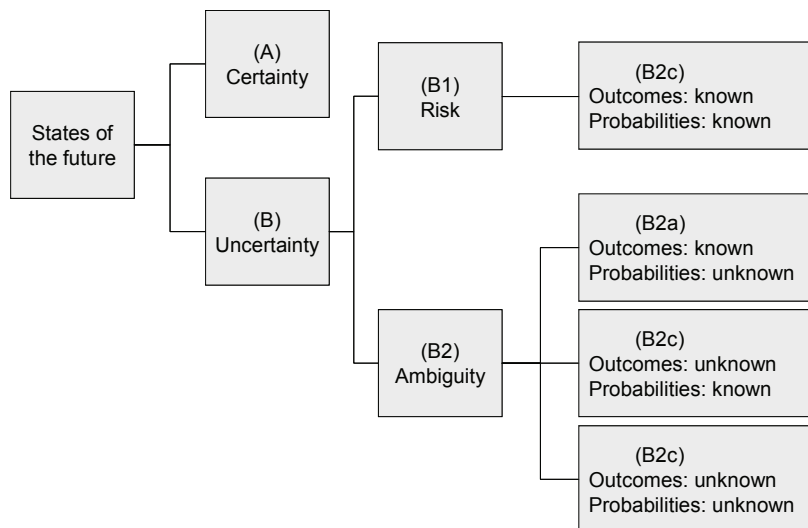
Fear has to be distinguished from risk aversion, even though, both can cause cognitive distortions with similar effects on decision-making and behavior in the entrepreneurial context, especially in terms of taking the decision whether to found a company, or not (Cramer et al. 2002; Brixy et al. 2011; Welpe et al. 2011b).

#### **Risk**

The leading theories used in economics as well as psychology for the past 40 years circle around the Expected Utility Theory by Neumann and Morgenstern (1947; 2007) (Camerer & Weber 1992), which also built the foundation for Game Theory (Von Neumann & Morgenstern 2007). "Expected Utility Theory (EUT) states that the decision maker (DM) chooses between risky or uncertain prospects by comparing their expected utility values, i.e., the weighted sums obtained by adding the utility values of outcomes multiplied by their respective probabilities" (Mongin 1997, p.342). Decisions are based on the "mean (expected value) and variance (risk) of the probability distributions over possible outcomes" (March & Shapira 1987). The basic assumption therefore is that the probabilities of outcomes are known (1947; 2007) (Camerer & Weber 1992). However, in many situations, this might not be the case. Therefore, the theory of Subjective Expected Utility (Savage 1954) evolved. Here, the "[p]robabilities are not necessarily objectively known" (Camerer & Weber 1992, p.325) and therefore decisions are taken based on the perception of the outcomes (Slovic et al. 1984; Camerer & Weber 1992). The basic distinction between the theories is "whether probability is known or unknown" (Camerer & Weber 1992, p.326).

According to the basic terms according to risk, there is a variety of different definitions. However, most of them circle around differentiation between known versus unknown outcomes (Camerer & Weber 1992). "The basic distinction goes by many names: risk vs. uncertainty (Knight, 1921); unambiguous vs. ambiguous probability (Ellsberg, 1961); precise or sharp vs. vague probability (Savage, 1954, p. 59), epistemic reliability (Gärdenfors and Sahlin, 1982), and so forth" (Camerer & Weber 1992, p.326). Ellsberg (1961) distinguishes between measurable uncertainty, unmeasurable uncertainty and risk. The dominant case is unmeasurable uncertainty, for example because the statistical frequencies of possible events are unknown, the a priori calculation of their probability is impossible or the event is simply unique and therefore unpredictable (Ellsberg 1961). To make decisions, an actor uses "degrees of belief" (Ellsberg 1961, p.643) and "behaves 'as if' he/she has assigned quantitative likelihoods to events" (Ellsberg 1961, p.643). When using the Subjective Expected Utility Theory, Camerer and Weber argue that "distinction between known and unknown probability is pointless, because subjective probabilities are never unknown - they are always known to decision makers" (Camerer & Weber 1992, p.326).

This study follows the suggestion by Camerer and Weber (1992) to "generally use the term ambiguity, purely from tradition" (Camerer & Weber 1992, p.326) for states of the future with objectively unknown outcomes. Based on the above discussion, this study will use the following terms concerning decision making under uncertainty (based on Petrasch 2011): The states of the future are generally divided into (A) certainty and (B) uncertainty of the future. Situations of uncertainty can be further divided into (B1) risk situations, where probabilities and corresponding outcomes of the different possible states are objectively known, and (B2) ambiguity situations, where the probabilities and/or outcomes are not known. If required, the states of ambiguity (B2) can be further detailed into situations, where (B2a) the outcomes are known, but the probabilities are not, (B2b) the outcomes are not known, but the probabilities are and (B2c) where both are unknown (Petrasch 2011).



**Fig. 17:** Overview of states of the future (based on Petrasch 2011)

The differentiation between risk and the different states of ambiguity bases on available information. According to the information states, different knowledge relevant for the market exists. There is knowledge, “that a player already has”, “of which the player knows but does not long for”, “of which the player does not know about” and “that does not exist yet” (Freiling et al. 2008). The first two states are categorized as *knowledge of knowledge*, the latter two as *radical ignorance* (Freiling et al. 2008; Rese 2000, p.70) .

The situation of founding a company is an ambiguity situation under radical ignorance. It is neither known what will happen to the once founded company, nor how likely the different potential outcomes are. This information is not only unknown to the nascent entrepreneur, it is most likely not even existing.

As shown above, in economic research, the states of uncertainty are often not clearly distinguished and different research studies use different terms for the states of the future (Camerer & Weber 1992). However, the basic principles to distinguish between known and unknown outcomes are common among these research studies (Camerer & Weber 1992). In ambiguous situations, the actors usually have a certain subjective expectation of the outcomes, on which they base their decisions and hence treat ambiguity situations as risk situations (Slovic et al. 1984; Camerer & Weber 1992). Therefore, the theories on the well-researched cognitive distortions occurring in risk situations (e.g., Kahneman & Tversky 1979) are applicable here. The cognitive distortions in human decision-making under risk and ambiguity as well as individual character traits according to risk aversion play a role when taking the decision whether to found a company or not (Cramer et al. 2002), however, these

are not the main focus of this study. The main focus lies on the role of emotional distortions, in particular causes by fear. In this study, the term risk is used to describe a state of ambiguity under radical ignorance with certain subjective expectations of the outcomes and their corresponding probabilities.

## **Fear**

This study builds on the psychological view, but includes aspects of the economic view, as it does not distinguish between fear and anxiety, as psychology does (e.g., Simon et al. 2003), but instead cumulates the emotions of fear and anxiety. This makes sense, since the two emotions are hard to distinguish in a snapshot view of the emotional state of an individual and since both have the same effect of an increased emotional state of being afraid and hence an avoidance reaction (Rachman & Hodgson 1974; Bodenhausen et al. 1994)., nevertheless, they come from different sources (general character trait vs. a current state of fear of a concrete event) (Breton 1989). However, it is assumed that fear takes a more important role than anxiety in this context, because a concrete threat, the implications of a failure with the founded company, causes the emotional reaction and the subsequent effects on decision-making and behavior in this case. The accumulation of fear and anxiety follows the economic view of emotions (e.g., Loewenstein 2000), which generally does not distinguish between state and trait emotions as well. The dynamic view of preferences changing over time (Eisenbach & Schmalz 2013; Epstein & Kopylov 2007) is included in the study, when it comes to investigation the role of fear along the process of venture gestation.

Fear in this study is defined as an emotion, which results from (a) a general trait, so a chronicle characteristic of an individual, similar to the psychological view of anxiety, (b) the current state, so the reaction to an anticipated threat, in particular the threat of failing with the potentially founded company and (c) the general susceptibility, so the general characteristic of an individual to react on threat situations. It causes emotional reactions and subsequently cognitive distortion which influence decision-making and behavior towards a threat avoidance tendency. The connection between fear and decisions or actions is guided by the Affect as Information theory (Clore et al. 2001; Gohm & Clore 2002), as illustrated in section 3.2.7.

### 4.3 Fear of entrepreneurial failure and its components

After having discussed the timeline of entrepreneurial activity, entrepreneurial failure and the emotion of fear, these areas will be consolidated to focus on the role of fear of entrepreneurial failure before foundation in the following sections. This section will elaborate on this fear and introduce its components.

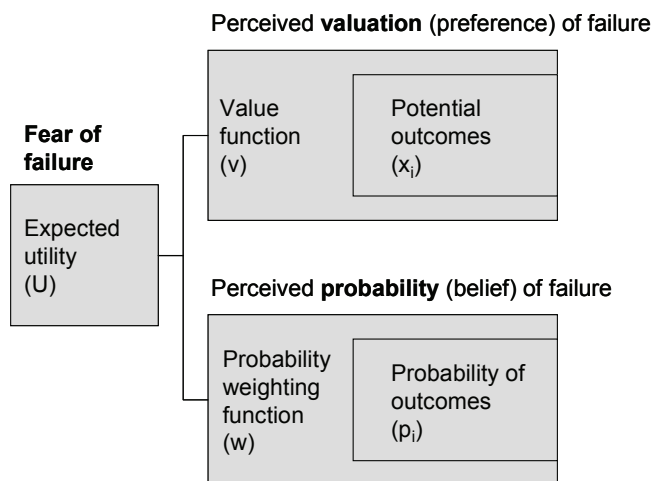
Fear of failure, or rather its decision relevant effect, the expected utility, can be broken down into to the two dimensions (1) *perceived probability to fail* (“*belief*”) and (2) *perceived valuation of failure* (“*preference*”) (c.f. figureFig. 18). Stöber (1997) supports this view in his study in the field of psychology by drawing analogies between risk evaluation and anxiety. This definition is based on the analogy to calculus of probability where fear is oriented on the expected value of failure E. The expected value E is defined as the sum of the products of the probabilities  $p_i$  and the values  $x_i$  of possible events  $i$  (Ibe 2009, p.39), where in this case the investigated event is failure. This view is aligned with the Expected Utility Theory by Neumann and Morgenstern (1947; 2007).

$$E = \sum_{i=1}^n (p_i) (x_i)$$

However, Kahnemann and Tversky (1979) show using Prospect Theory, that human beings do not base their decision-making on the mathematical expected value. Instead, they have a certain utility function U. It is a similar concept to the expected value, with a component regarding probability of the event and another regarding the valuation of the event. But for human decision-making, it is not the factual probability of an event, but rather its perception. This perception develops following the individual’s probability weighting function ( $w$ ). The same applies for the valuation of potential outcomes. Here again, it is the perceived valuation, developed by application of the individual’s value function ( $v$ ) that influence the composition of overall fear (Kahneman & Tversky 1979). This view can also be supported by the Subjective Expected Utility Theory (Savage 1954; Camerer & Weber 1992). This concept is used to describe the overall composition of fear of failure.

$$U = \sum_{i=1}^n w(p_i) v(x_i)$$





**Fig. 18:** The dimensions of fear of failure (based on Kahneman & Tversky 1979)

The two dimensions of fear show the complexity of fear of failure and suggest different influencing levers. The perception of probability to fail is connected to the causes why founded startups fail. Potential entrepreneurs anticipate certain reasons which could lead to failure of their respective companies. These anticipated causes they fear to lead to failure refer to the dimension *perceived probability to fail*. For example, a potential entrepreneur might hesitate to found a startup because he/she fears failing due to his/her lacking marketing knowledge. This example shows that the potential founder fears that this failure will happen with a high *probability*, since he/she does not have enough marketing skills. It does not indicate how severe (*valuation*) it would be for the potential entrepreneur, if the failure would actually happen.

The perceived valuation of failure is influenced by a set of other reasons. These reasons could lie in the entrepreneurial environment the potential founder is in. This study assumes, for example, that founders value entrepreneurial failure less severe in entrepreneurial environments like the Silicon Valley where failed entrepreneurs are appreciated more than in less entrepreneurial environments, where they might even be stigmatized (Ullrich 2013; Landier 2006; McGrath 1999). Another important driver for the valuation of failure might be connected to the individual economic situation of the entrepreneur. Here, beside other attributes, opportunity costs can play a role. If a potential entrepreneur is in a job with a high salary and good career perspectives, his/her opportunity costs would be higher and hence the value of failure more severe than for a person who – in an extreme case – came out of unemployment and had no other career options.

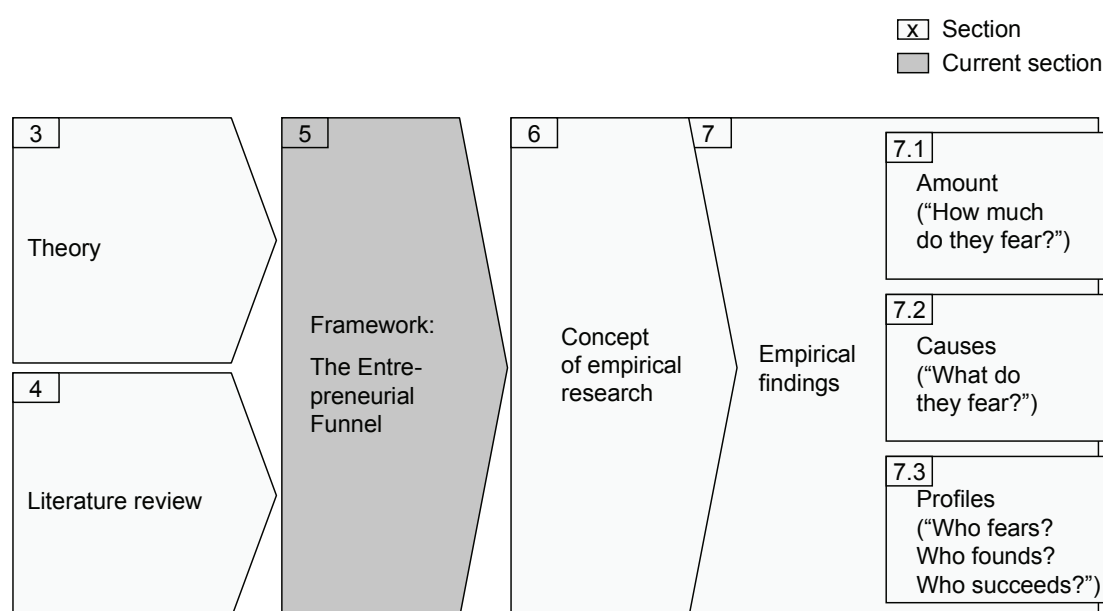
This shows that two components of fear of failure base on completely different estimations of the potential founder. Therefore, it is likely that the two components are not of the same importance – either generally for the whole population of nascent founders or for each individual nascent founder. Generally, human beings react more on the dimension *valuation* than *probability* (Dobelli 2011, pp.106, 233; Sunstein 2002; Kahneman & Tversky 1979). A good example for this reaction is the human behavior in state lotteries. When the jackpot increases, more people tend to participate in the lottery. They react on the increased value of the bet. However, they ignore its probability, which is already marginally low and even decreases further through the enlarged number of lottery participants. Even though, the odds of hitting the winning number stays the same, the odds of getting the full jackpot decreases since the probability of multiple winners with the same number who have to share the jackpot increases. Most lottery participants do not seem to think about the probability at all, but just about the value. This is in line with research on Prospect Theory, according to which, for example, human beings tend to overestimate the probability of very unlikely events (Kahneman & Tversky 1979; Kahneman & Lovallo 1993)

In the entrepreneurial context, Welpel et al. (2012) show, that four characteristics lead to opportunity exploitation through positive evaluation of the idea and hence foundation of the venture. These evaluation criteria are (1) the probability of success, (2) the expected profit, (3) the time to profit and (4) the required personal investment (Welpel et al. 2012). These findings are in line with the components of fear of failure presented above. The expected profit (2) represents the value of the bet in case of a success. Together with its probability (1) and the according weighting functions it represents the expected utility of the business idea for the potential entrepreneur. Similar to a lottery ticket, this expected utility defines the price of the bet the prospect founder is willing to pay. In this case, this is the required personal investment (4). Time to profit (3) can be interpreted in different ways. On the one hand, time to profit can simply be part of the valuation aspect of the potential success. The earlier the profits occur, the more valuable they are according to a discounted cash flow evaluation from today's point of view. Time to profit can also be interpreted as part of the required personal investment of the founder, so price of the bet. In this case, time is interpreted as either a personal investment, so the required input of workload of the investor, or the time the founder has to remain without generating sufficient profits. In the latter case, this represents an investment of the founder as well, for example because of opportunity costs which incur for him/her. Independently of the interpretation of the factor time to profit, it can either be categorized as the valuation of the win of the bet or the price of the bet. In both cases the components of fear

of foundation and their corresponding expected utility (the acceptable price of the bet) can be supported.

## 5. Entrepreneurial failure over time - the Entrepreneurial Funnel

Since this research endeavor focusses on understanding entrepreneurial failure before and after foundation, a framework is required to structure the entrepreneurial venture creation process across time. Building on theories, existing process models were expanded to guide this research approach and to provide a tool for future research. It helps to better understand the different phases of the entrepreneurial process and to establish a link between them.

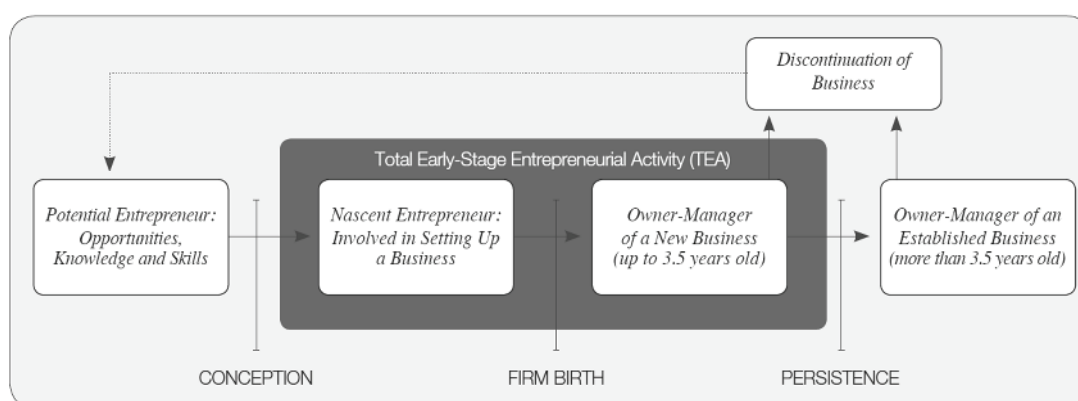


**Fig. 19:** Structure of this research study with highlighted current section

### 5.1 Existing process models of entrepreneurial venture creation

The foundation of a new venture is usually well considered and prepared. Therefore it makes sense to view the foundation of a new venture as a process (Bhave 1994; Brixy et al. 2011). Due to this fact, multiple researchers developed according conceptual frameworks to describe this process in previous studies. Kelley et al. (2010) developed a process illustration to be used in the annual Global Entrepreneurship Monitor (Kelley et al. 2010; Brixy et al. 2011). In this model, there are four steps in the process. The first one is called "*Potential Entrepreneur*" describes potential entrepreneurs as individuals who tinker with the idea of founding a business. This stage does not clearly define how concrete these plans of the person are. It could include people who could just generally imagine becoming self-employed as well as

potential entrepreneurs with a concrete idea just before starting. In a later illustration of the process, Kelley et al (2011) distinguished between potential entrepreneurs and those with intentions to found. The items in the second stage are called “*Nascent Entrepreneurs*” and are defined as individuals who started seriously with the conception of a company. Once they implement their plan and actually found a business, they become an “*Owner-Manager of a New Business*” in stage three. Kelley et al (2011) define this stage with duration of 3.5 years. During this time, the founders are young entrepreneurs, according to their definition. Stages two and three are aggregated and labeled “*Total Early-Stage Entrepreneurial Activity*” in Kelley et al’s (2011) Model. If these young entrepreneurs have not discontinued their businesses after 3.5 years, they proceed to step four and are then labeled “*Owner-Manager of an Established Business*”. Apart from the possibility of moving on to the next step the model allows a step back into a previous stage at two points. Both young entrepreneurs and established entrepreneurs can discontinue their respective businesses and consequently move back to become potential entrepreneurs again (Kelley et al. 2010; Brixey et al. 2011).



**Fig. 20:** Illustration of the entrepreneurship process by Kelley et al. (2010)

López (2012) developed a similar framework to better understand the venture creation process. Similar to Kelley et al’s (2010) model, it consists of four stages. However, they do not describe the same situations. To address the problem of categorizing individuals who cannot imagine founding a company at all, a further stage at the beginning of the process is suggested. This upstream stage describes the attitude towards entrepreneurship and can be interpreted as the general willingness to found a company. Once this general willingness developed into a concrete intention to start, these individuals have reached the first actual stage in López’ (2012) process model. He labels this first step “*Potential Entrepreneurs*” and defines it as individuals with an intention to start a business. Once they developed a concept of their potential business, the move on to the second stage. The third stage describes the

gestation phase of the new company when the individuals start to set up the organization of their venture. López (2012) labels stage two and three as “*Nascent Entrepreneurs*”. Once the set-up is completed, the individuals become real “*Entrepreneurs*” and participate at the market exchange.

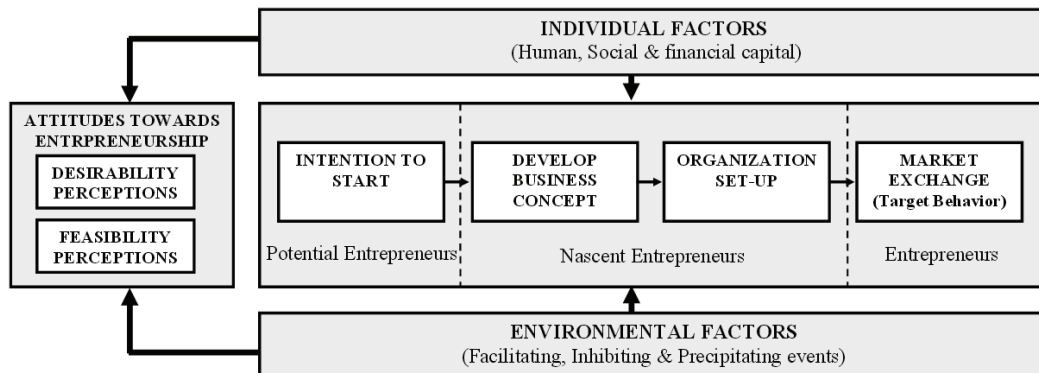
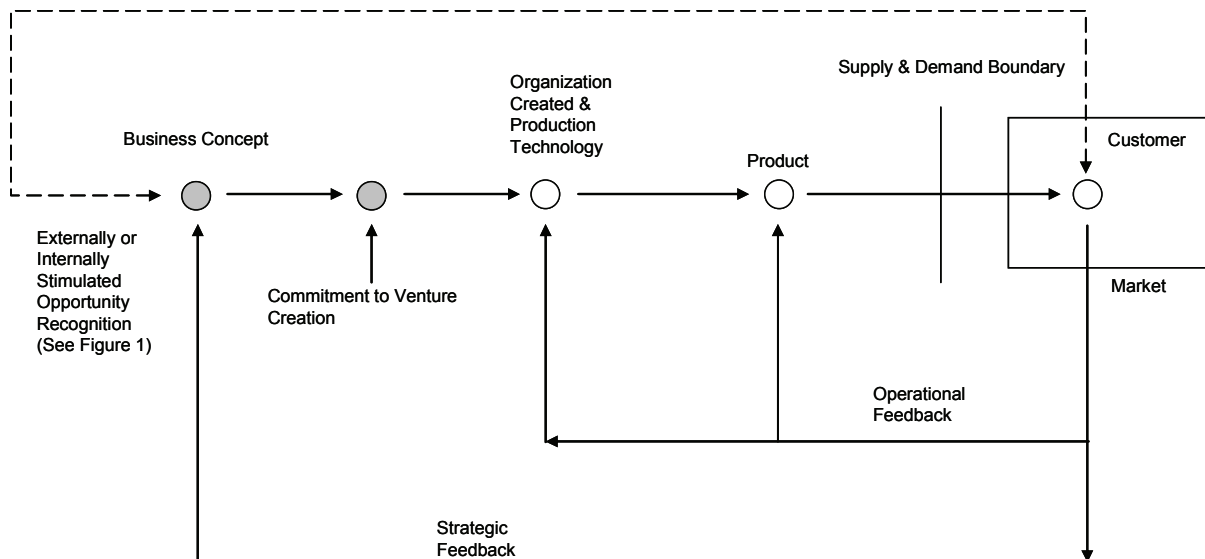


Fig. 21: Illustration of an expansion of the entrepreneurship process by López (2012)

There are further descriptions of the entrepreneurial process that focus on particular phases in the venture creation process and break them down into more granular steps. A popular example of such a detailed process illustration was developed by Bhawe (1994). It is focused on the phase of opportunity recognition and details the steps between the initial business concept and the participation in the market. The aim is to better understand the implementation of a value creation process. It does not include anterior phases like the general willingness to found a company or the creation and evaluation of ideas. Also the perspective of the process model is different. The items passing through the process are not the entrepreneurs as individuals but rather ideas or concepts.



**Fig. 22:** Illustration of the entrepreneurship process by Bhavé (1994)

## 5.2 Expansion of the existing process models from an Evolution Theory perspective and development of the Entrepreneurial Funnel

The following section will discuss the existing process models from a theory perspective and suggest an extension – the Entrepreneurial Funnel.

### 5.2.1 Derivation of relevant phases of the entrepreneurial process for this study

Generally, process diagrams can model different types of items which moving through the process, depending on the research purpose. Kelley et al's (2010) and López' (2012) process describes entrepreneurs as items, while Bhavé's (1994) process rather focusses on ideas or concepts. Since this research study investigates the entrepreneur as a person, in the process model used here each step in the process represents the potential entrepreneurs who are in this phase in the entrepreneurial process. In this study, six steps are modeled in the process, combining the steps of the existing models (Kelley et al. 2011; Sánchez López 2012; Bhavé 1994). The first one represents the people who cannot, or cannot yet imagine founding a company (c.f. Sánchez López 2012). It represents the basic population of the investigation to start with. The process models this step as the very first one, which every entrepreneur has to pass through. This is, because it is assumed that every human being starts with not being ready to found a company – be it only because of minor age. However, it could be argued that people, who could imagine founding a company ever since they can think, would directly start their entrepreneurial journey in the second step of the process or pass the first process step in

no time. Nevertheless, this is a hypothetical discussion that does not affect the usability of the process model. Participants in this process step are by definition not yet potential entrepreneurs, as they obviate the possibility to found a business. Due to this fact and because this research study focusses particularly on potential entrepreneurs, the first process step is numbered with “0”, to illustrate that it is an upstream process step before the steps focused in this study. The second step represents the potential entrepreneurs – people who could generally imagine founding a company (c.f. Sánchez López 2012; Kelley et al. 2011). This includes a wide span of people who could imagine founding, from people who just not definitely exclude the possibility to people who concretely plan to become self-employed. If a further research attempt should focus particularly on this step in the process, it could make sense to split it up into further, more detailed steps, e.g., a step for people who could generally imagine founding, but have no concrete plans yet and a separate step for people who concretely consider the foundation of a business. All the individuals in this process step can then proceed on to the next step, once they have their first actual business idea (c.f. Sánchez López 2012; Kelley et al. 2011). Having an idea which company to found shows progress in the process, as planning gets more concrete and hence commitment is increasing. Many potential entrepreneurs might pass through the second phase quite quickly on to the third phase, if the development of an idea goes along or even is the cause to generally consider the possibility to found a company. Some entrepreneurs might stay in this process step for some time if they generate but refuse multiple ideas iteratively. Once they evaluated an idea as positive in the meaning of being worth trying to implement it, they progress to the fourth step in the process. Having evaluated ideas and considering one or more of them worth trying shows a further escalation of commitment towards starting a business. It is likely that the individuals reside in this process step for some time, before they eventually implement their idea and found an actual business to become real entrepreneurs. This gesture categorized them into the next process step (c.f. Sánchez López 2012; Kelley et al. 2011). From then on, the entrepreneurs struggle to reach the next step of the process by making their endeavor profitable. Since it is not possible to give a collectively covering definition of success to the manifold ventures, ‘profitable’ should be interpreted in the sense of the aim of the venture. For non-profit enterprises or social entrepreneurship endeavors, for example, success could be measured by non-monetary profit definitions, like illiteracy or infant mortality rates, reflecting the project’s targets. For a discussion on the definitions of entrepreneurial failure see also research by Watson and Everett (1993). Profitability represents the last step in the process used in this research. However, depending on the research target, the process could be further



expanded. An adjacent step could be the exit of the founders or investors out of the profitable company, for example its sale to the stock market. It could also be, the foundation of another company and hence the development of the individual to a serial entrepreneur (Gompers et al. 2006). If and which steps are added to the process depends on the research attempt. In this research, further steps are not required, as the focus is on the steps even before foundation.



**Fig. 23:** Phases in the entrepreneurial venture creation process used in this study (based on Kelley et al. 2011; Sánchez López 2012; Bhawe 1994)

### 5.2.2 Application of Evolution Theory on the entrepreneurial process

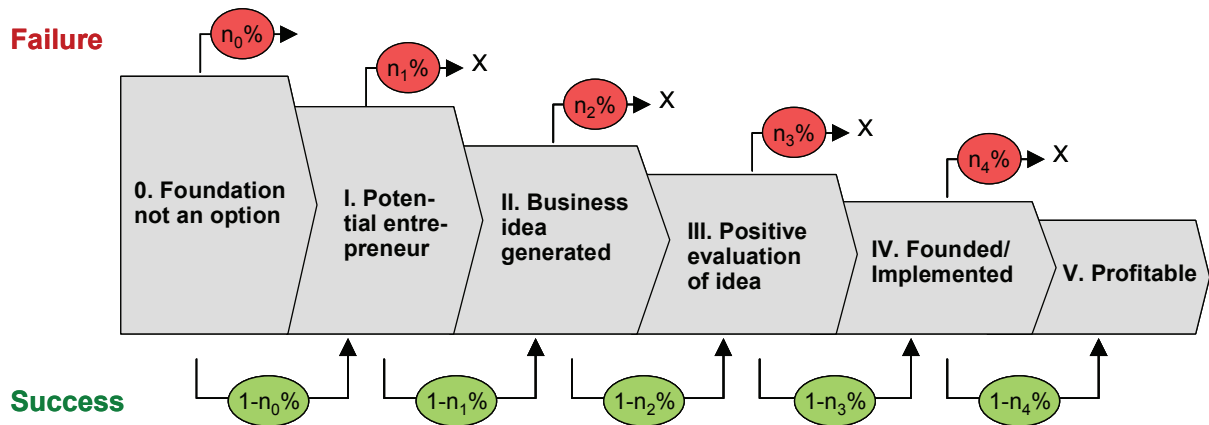
From a traditional viewpoint of Evolution Theory, the performance of an existing organization is explained by its success in the variation, selection and retention phases (Campbell 1965; Staber 2002). However, in most stages of the entrepreneurial process, the organization does not yet exist. When the new venture is finally founded, most of the process steps are already passed and Evolution Theory could only be applied in the last step to explain the chances to move from phase “IV. Founded/Implemented” to “V. Profitable”. However, drawing parallels to entrepreneurship (Hodgson 1998), it can be argued that the phases of innovation, selection and retention are also applicable earlier in the process. Miner (1994) argues that it is the role of a founder of a startup to actively manage the evolution of their organization. To reach step “IV. Founded/Implemented” from step “III. Positive evaluation of idea”, the founder has to overcome certain challenges as well. Apart from finally taking the decision to found and the according gestation actions, he/she might have to finally commit the founding team, design the foundation contracts, etc. Here, a certain selection process might be in place as well, distinguishing the potential entrepreneurs who finally dare to found and those who chicken out. The latter ones could have another try to reach this process step, by varying their team, support, mindset, etc. A similar argument can be made for the process step before (“II. Business idea generated” to “III. Positive evaluation of idea”). Here a selection process, which can be either caused by self-reflection or discussion with sparing partners, co-founders, investors, etc. might distinguish between ideas evaluated as positive or negative. If an idea is

evaluated as negative, the idea can be improved in a variation processes or a new idea can be developed. A similar argument can be made for the transition between the process step “I. Potential entrepreneur” to “II. Business idea generated”. The progress from step “0. Foundation not an option” to step “I. Potential entrepreneur” could be influenced by selection and variation processes as well. This selection could be induced externally, for example through the loss of a job and the subsequent consideration of self-employment as an option (Creutzburg et al. n.d.; Kelley et al. 2011; Brixy et al. 2011; Hagen et al. 2011), or internally, for example by changing the own attitude towards entrepreneurship through a new partner or relatives (Brüderl et al. 1992; Cooper et al. 1994; Stam et al. 2010). Retention seems to play a minor role in the process, since the aim is not to stay within one phase of the process (except the very last one), but to progress to the next step.

Following this argumentation, the challenge for the potential entrepreneur starts well before actually founding the company. Proceeding through each of the steps of the venture creation process seems to be a matter of success and failure as well. Since the process steps are modelled building on each other (Sánchez López 2012; Kelley et al. 2011), it is required to have been in an earlier step, before entering a later one. As selection processes might hold potential entrepreneurs back from reaching the next process step and filter them out, the number of items in each step should decrease along the process. Therefore, the process cannot be seen as a “tube”, but rather a “funnel”.

### **5.2.3 Development of the Entrepreneurial Funnel**

Following the argument above, the venture creation process used in this study will be modelled by the *Entrepreneurial Funnel* to be used as a structuring framework to understand and to investigate the entrepreneurial process.



**Fig. 24:** The Entrepreneurial Funnel

The aim of the entrepreneur should be to move all the way through the funnel to the foundation of a profitable company. However, there are bifurcations of success and failure in each step, so the items passing through the process will become less and less. To reflect this, the model of a funnel is used additionally to the process diagram with entrepreneurs as items passing through the funnel. For each funnel step there is an empirical probability to reach the next funnel step ('success' by the definition of this framework) or to drop out of the funnel ('failure' by the definition of this framework) with corresponding underlying causes. Existing research e.g., shows that the failure rate from the funnel step IV: *Founded/Implemented* to step V: *Profitable* ( $n_4$ ) is about 50% within the first 5 years (Fritsch et al. 2006; Fritsch & Weyh 2006). Before success or failure becomes manifest and items move on or drop out, they stay within each funnel step for some time. The average duration of stay can be very different for each funnel step. It can be argued, that the duration in funnel step "*II. Business idea generated*" is relatively short. Once the potential entrepreneurs start to develop ideas, it is likely that they find one which they evaluate as positive quite soon. This would make them move into the next funnel step quickly. On the other hand, it could take quite long to move from the funnel step "*III. Positive evaluation of idea*" to "*IV. Founded/Implemented*". However, at this point, this is only speculation and empirical data has to prove the actual durations of stay in each funnel step. Additionally to the average durations of stay in the single funnel steps, it is assumed that there is a big deviation between different individuals. There might be some, who rush through certain phases in the funnel, while others are more hesitant. It is up to future research to quantify the deviations of the duration of stay in each funnel step and different types of individuals categorized by the speed they move through the entrepreneurial process.

### **The funnel as a one-way road**

The concept of the funnel as illustrated here does not allow backward movements to a previous funnel step. For example, potential entrepreneurs in the funnel step “*III. Positive evaluation of idea*” would stay in this funnel step, even if the idea they once evaluated as positive should later on prove to be not so good and be refused. The entrepreneur would not fall back into the previous funnel steps, as he/she once already positively evaluated a business idea. This is so, because the items passing through the funnel are entrepreneurs, thus people, and not business ideas. The funnel represents a one way road in the entrepreneurial process and illustrates how far an entrepreneur got on the path towards foundation. If he/she does not move on to the next step, he/she either remains in the current one or gives up the theoretical option to found a company for good and hence drops out of the funnel. It would also be possible to model the funnel differently and allow backward movements. This just has to be made explicit when applying the funnel, as it affects the way it can be used. For example in surveys, questions have to be phrased differently, e.g., “Do you currently have a business idea” rather than “Have you ever had a business idea?” In this research it is useful to restrict backward movements, as the aim of the research is to examine entrepreneurial failure, especially before foundation. Thus, the important question is what stops individuals from progression into the next funnel steps. If backward movements were conceptually possible, it could disguise failure. It is for example important to know, if a potential entrepreneur *ever* had a business idea he/she evaluated as positive to investigate, why he/she failed and did not implement the idea and founded a company. If the funnel allowed backward movements and hence the questions would be phrased in a corresponding way, such a survey participant would potentially move back and be categorized in the previous funnel step (“*II. Business idea generated*”). Here, the information that he/she already failed and hence moved back a step would be lost.

### **Versatility of the funnel**

Fundamentally, the funnel can describe different perspectives along two dimensions. The first dimension is the kind of items passing through the funnel. These items could be entrepreneurs (input-oriented view) or ideas (output-oriented view). As this research will focus on the entrepreneur as a person and his/her barriers to foundation, the funnel will be modeled using an input-oriented view. The second dimension is the type of funnel, depending on its context. It can be applied for new companies (startups) or entrepreneurial activity in existing

companies (corporate entrepreneurship and innovation). As described above, according to this dimension the funnel will be modeled focused on startups.

### **Comparison of the Entrepreneurial Funnel to existing models**

As an extension of established process models (Kelley et al. 2011; Sánchez López 2012; Bhawe 1994) (Kelley et al. 2011; Sánchez López 2012; Bhawe 1994), the framework of the Entrepreneurial Funnel will integrate smoothly in existing research, while offering new insights and possibilities. This applies for both existing conceptual models of the entrepreneurial process (Kelley et al. 2011; Sánchez López 2012; Bhawe 1994) and present empirical research findings in this area (Fritsch et al. 2006; Fritsch & Weyh 2006; Kelley et al. 2011; Brixy et al. 2011; Ullrich 2013; Hagen et al. 2011; Fiet 2001; GfK et al. 2012).

Existing process models can either be aligned with or integrated in the concept of the Entrepreneurial Funnel. Prior research on particular phases of the entrepreneurial process (e.g., Bhawe 1994) can be integrated in the funnel as a detailed deep dive into a certain funnel step. Other models that describe the venture creation process on a similar level as the funnel (e.g., Kelley et al. 2010; Kelley et al. 2011; Brixy et al. 2011) can be easily aligned with it. The advantages of the Entrepreneurial Funnel can then be used to exploit the full potential of the process description or according empirical studies. The following figure illustrates the alignment of the different phases in the entrepreneurial process of the process models introduced above and the Entrepreneurial Funnel.

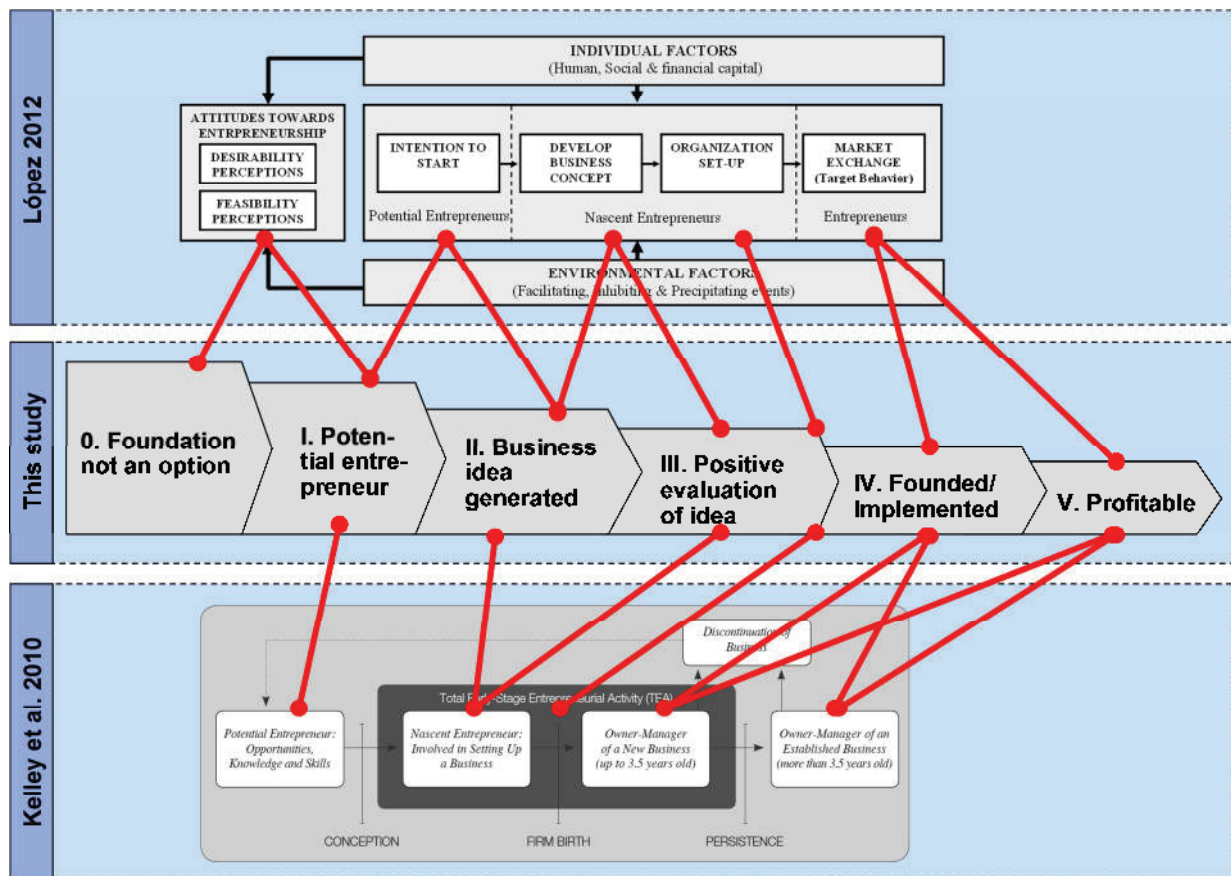


Fig. 25: Coordination of existing models with the Entrepreneurial Funnel

While it can be aligned with existing research smoothly, the Entrepreneurial Funnel has several advantages compared to the process models introduced above and addresses their problems. As described above, in Kelley et al's (2010) process model as it is used in the Global Entrepreneurship Monitor both young entrepreneurs and established entrepreneurs can discontinue their respective businesses and consequently move back to become potential entrepreneurs again (Kelley et al. 2010; Brixy et al. 2011). However, these back loops expose a conceptual weakness of the model. Not all potential movements between the different stages are included. For example it might well be that a nascent entrepreneur who is involved in setting up a venture, stops his/her activities and moves back to being a potential entrepreneur. However, this movement is not allowed in the model. Another potential movement between the stages could be required, if a young entrepreneur realizes that his/her business does not develop as hoped and gets involved in setting up a new business. If he/she gave up his/her primary business at this point in time, he/she would directly move back to the stage of being a nascent entrepreneur. Again, this movement is not allowed in Kelley et al's (2010) model. Another weakness of this framework is that it does not make clear how to handle individuals who are located in different stages of the entrepreneurial process at the same time. In the

previous example, if the young entrepreneur did not give up his/her primary business right away, when starting to plan his/her next venture, then he/she would fall into both categories nascent entrepreneur and young entrepreneur. The model does not clearly define how to cope with such a situation and how to classify these items.

The Entrepreneurial Funnel presented in this study however addresses these issues. It avoids categorization problems by defining the classification of individuals by the farthest step they reached in the entrepreneurial process. Therefore, if an entrepreneur is involved simultaneously in different stages of the process, he/she would be categorized only in the one most advanced – implying also that he/she was, or still is, in the previous steps before. Since backward movements in the funnel are not allowed, the Funnel avoids the discussion of all potential movements between different stages in the process and only classifies “how far one got” in the process towards founding a profitable company. This is beneficial, because by avoiding this categorization problem, it allows a sharper definition and hence understanding of the situation of the individuals in a certain funnel step. For example, it might not be useful to interpret a serial entrepreneur who just started a new company as a first time founder, even though he/she is in the same current situation as a first time founder, who just started his/her company. The reason is that a serial entrepreneur can have a lot more favorable starting conditions for a new venture (Gompers et al. 2006). A further strength of the Entrepreneurial Funnel is the addition of an upstream step right at the beginning categorizing individuals who cannot imagine founding a company. This step is highly relevant as it allows investigating the general willingness to engage in entrepreneurship in a society.

#### **5.2.4 Quantification of the Entrepreneurial Funnel**

A further strength of the Entrepreneurial Funnel is that it was designed to also provide a tool for the detailed quantification of entrepreneurial activity.

#### **Existing empirical research and the Entrepreneurial Funnel**

As the Entrepreneurial Funnel can be easily aligned with existing concepts, it is applicable to structure existing empirical research on particular aspects in certain stages of the venture creation process. The funnel can be used to integrate different existing empirical surveys to get a bigger picture of entrepreneurship.



In Germany, 27% of the entire population and 41% of the population of 14-29 years of age can imagine founding a company (GfK et al. 2012) and are therefore in *step I: Potential entrepreneur*. 3% of the population per year plan a foundation (Ullrich 2013) and therefore join the pool of individuals in *step II: Business idea generated* or *step III: Positive evaluation of idea*. Between 1.5% (Ullrich 2013) and 1.8% (Hagen et al. 2011) of the population per year do actually found a company and proceed to *step IV: Founded*. Thereof 42% found as a regular basis and 58% as a sideline basis (Hagen et al. 2011). A study from the US shows 3% to 4% of the country's population to actually found a venture annually (Fiet 2001). These numbers present annual values and therefore flow sizes. The stock size of the self-employed is about 6% in Germany (GfK et al. 2012). Three years after foundation, about 30% of the startups are terminated from the market (Hagen et al. 2011), five years after foundation already 50% (Fritsch et al. 2006; Fritsch & Weyh 2006). Even though these are very interesting facts, they represent only single data points as pieces of the puzzle to comprehensively understand entrepreneurial activity. Here, the funnel can help to put the puzzle together. In this particular case, the existing study fills a missing data point in the funnel. In this case, it is the probability to move from funnel step "*IV. Founded/Implemented*" to funnel step "*V. Profitable*" ( $1-n_4$ ). Now the data point is put into context, it illustrates which further pieces of the puzzle are missing for future research and which additional insights can be generated by combining this piece of information with other data points in the funnel. This case makes obvious, that the probabilities to move between the earlier funnel steps are not known yet and call for future research. Also this data point can be combined with others. As it indicates a flux size, it can be combined with stock sizes, e.g., as drawn from the Global Entrepreneurship Monitor (Kelley et al. 2010; Brixy et al. 2011) to calculate the movements in the funnel. A detailed description of this approach will be explained in the following section.

### **Quantification capabilities of the Entrepreneurial Funnel**

The concept of the entrepreneurial funnel allows quantifying the amount of items in each funnel step and their probabilities to reach the next funnel steps even in snap-shot studies, without the need of extensive longitudinal studies (e.g. Brockhaus 1980; Gatewood et al. 1995). It does so, because the framework clearly distinguishes between stocks in a funnel step with their corresponding duration and flows between the funnel steps. This is important for studies like this, which investigate the single entrepreneur as an individual and his/her chances to succeed or fail in the entrepreneurial selection process.



Existing snap-shot studies, like the Global Entrepreneurship Monitor (Kelley et al. 2011) usually survey how many respondents are in which step in the entrepreneurial process (e.g., 1,000 respondents with a positively evaluated business idea, 600 respondents who have already founded a company). However, they usually neglect to ask how long the respondent already is in this specific step. Therefore it is not possible to gain an understanding of the probability to reach the next step. In the above example it might appear that the probability to found a company when having a positively evaluated business idea is quite high ( $600/1.000 = 60\%$ ). However, the following text will argue that this is not true, when you are aware of the average durations of the funnel steps. In reality, the duration of the funnel step III (*Evaluated as positive*) might be relatively short compared to step IV (*Founded/Implemented*), as the entrepreneurs are likely to decide within a comparably short amount of time to either found the company (and hence move onto the next funnel step) or to leave it (and hence drop out of the funnel). The duration of the funnel step IV (*Founded/Implemented*) however might be comparably long (Fritsch et al. 2006; Fritsch & Weyh 2006; Hagen et al. 2011), as it is neither very likely for the newly founded venture to go bankrupt immediately, nor to become profitable immediately. Let us assume the duration of funnel step IV is only twice as long as funnel step III. Then the probability of an entrepreneur to reach funnel step IV shrinks down to 30% (the according calculation will follow in the next section). The example shows that knowledge of the Entrepreneurial Funnel is essential to derive causalities and projections in the entrepreneurial process.

This section will address the challenges described above to allow quantifying how many entrepreneurs on average are currently in each step of the funnel, how long they remain in this funnel step and how high the chances are to move from one funnel step to the next. Especially to achieve the latter without the need for longitudinal studies (e.g. Brockhaus 1980; Gatewood et al. 1995) is a unique capability of the Entrepreneurial Funnel.

### **Method of quantification**

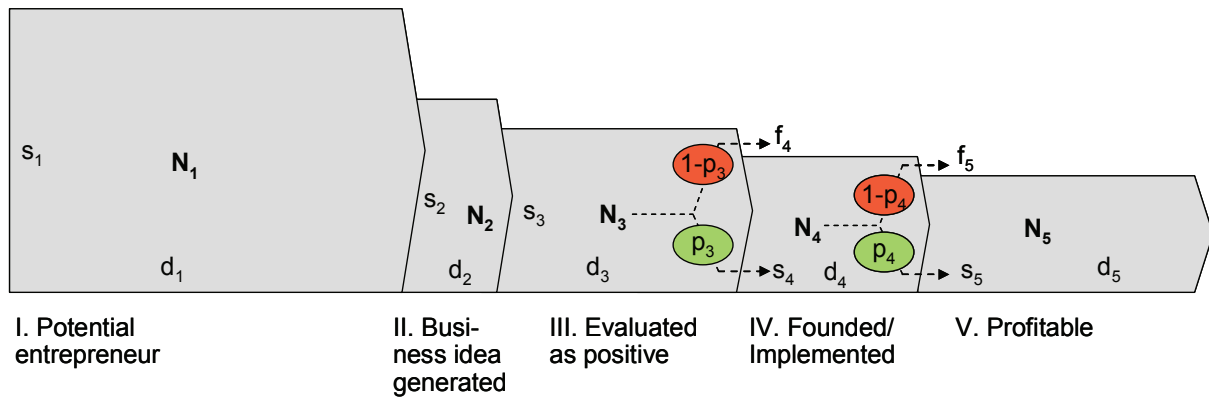
To identify the *amount of entrepreneurs in each funnel step* is relatively easy. An empirical survey asking the participants about their current state regarding entrepreneurship is sufficient to get these numbers. There are many existing studies, like the Global Entrepreneurship Monitor (Kelley et al. 2011) which already use this approach and quantify how many potential entrepreneurs are in which funnel step.

Finding out the *duration, the potential entrepreneurs remain in each funnel step* is more difficult. Empirical surveys can be used here as well, but with some challenges. This study assumes that there are basically three ways to survey the duration of the funnel step. The first is, to ask the participant how long he/she already resides in his/her current situation. For the survey participant, this question is quite easy to answer and therefore the accuracy of the surveyed data will be high. It is important to clearly define sharp boundaries of the different funnel steps to prevent different interpretations by different survey participants. The disadvantage is, that the results do not directly answer the research question, as it is only surveyed how long the participant already remained in this funnel step, but not how long he/she will still be in it. This information can be derived by an extrapolation with a distribution assumption. If assumed, that an entrepreneur who entered a specific funnel step in the past would stay an equal duration in the step as an entrepreneur who would enter it now or in the future, the distribution would be linear. If the environmental conditions have not changed dramatically within a timeframe of about the average length of the duration of stay in this funnel step, this can be assumed. Given the linear distribution, the average surveyed duration the participants already spent in the specific funnel step represents one half of the total duration of the funnel step. The total duration can hence be determined by multiplying the average time survey participants already spent in the specific funnel step by the factor two. A second way to survey the duration of the funnel step is to ask participants not only for the time already spent in the funnel step, but also their prognoses of the expected remaining time. Obviously this would result in a highly subjective estimation of the survey participants. However, this approach could make sense, to get additional information to the historical duration time that could for example be used as a comparison to the extrapolated remaining duration. It is questionable if this information can be used meaningfully, though. The third way to determine the duration of the funnel step is to survey the participants for the duration of their stay in previous funnel steps. This bears the advantage, that no extrapolation is required, because the previous funnel step has already passed in its complete duration. A disadvantage is, that it might be harder for the survey participants to estimate time spans in their past. Retrospectively the feeling of time can be distorted depending on various influences. The subjective sensation of time could, for example, be influenced by how much happened in this timeframe or if it is connected with good or bad memories. However, over a sufficient sample this effect could average out, if no systematic distortion applies. To get the most out of the survey, it is recommended to combine all three approaches and ask for the time spent in the previous funnel step, for the time of residence in the current step and for the

estimation of the time remaining to reach the next funnel step. Even though these data points can potentially generate contradictory numbers, a triangulation might lead to the most accurate possible answer.

The most interesting and innovative approach of using the Entrepreneurial Funnel to quantify entrepreneurial activity is to calculate the *chances of potential entrepreneurs to reach the next funnel step*. A calculation of these probabilities cannot be found yet in existing research. Coming closest to the question, there are existing studies surveying the drop-out quote after a certain time of a newly founded business (Hagen et al. 2011; Fritsch et al. 2006; Fritsch & Weyh 2006). The most obvious way to survey these probabilities would be directly from observation, not from calculation. However, to do so, a longitudinal study would be required (e.g. Brockhaus 1980; Gatewood et al. 1995). A high number of potential entrepreneurs in the first funnel step would have to be monitored over many years and recorded who reaches the next funnel step and who drops out of the funnel. This approach is very complex and time-consuming. A more feasible approach is to derive the data from snapshot studies (e.g. Hagen et al. 2011; Kelley et al. 2011; GfK et al. 2012). The required input for this approach is the share of entrepreneurs currently in each funnel and the average duration of each step. With this information the probabilities to transfer from one step to the next can be calculated. This allows answering the question: “How likely is it for a nascent entrepreneur to actually found a company?” The respective calculation method will require to formalize the activities in the funnel and investigate the events on the micro perspective to be able to draw conclusions on the macro perspective. The basic numerical model of the funnel is based on existing applications of funnel models, for example the marketing funnel (also referred to as purchase funnel or sales funnel) (Court et al. 2009; Noble 2010; Jaffe 2010).

To explain the calculation method, the following variables will be used:  $N_i$  is the total number of potential entrepreneurs in the specific funnel step  $i$ . It represents a stock size. The indices  $i$  indicate the respective funnel step. The variable  $d_i$  represents the average duration of stay in the funnel step  $i$ . The variable  $s_i$  stands for the flow size of the number of potential entrepreneurs transferring from one funnel step  $(i-1)$  to the next  $(i)$  in each time period, while  $f$  is the number of people dropping out of this funnel step each time period. Finally,  $p$  stands for the probability to transfer from one funnel step to the next.



**Fig. 26:** Quantification of stocks, flows and durations of each funnel step

Variables:

- $i$  Funnel step
- $N_i$  Items in pool
- $d_i$  Avg. duration of item in funnel step
- $s_i$  Items entering funnel step (each time period)
- $s_{i+1}$  Items transferring to next funnel step each time period
- $f_i$  Items dropping out each time period without reaching next funnel step
- $p_i$  Probability of specific item to reach next funnel step

The Entrepreneurial Funnel generally is in the state of a *dynamic equilibrium*, following the definition in chemistry. It is defined as a state where constant reactions with opposing outcomes neutralize each other's effects and therefore make the overall state to appear as an equilibrium, when observed from outside (Denbigh 1981; Atkins 2006). Here, the different items move within the funnel but new items are replacing the previous ones, so that the total number of items in each funnel step remains constant. This situation remains while the environmental conditions according to new items entering the total system and the durations of each step stay equal. Should the environmental setting change, a new dynamic equilibrium establishes. Such changes could be a strong boost in entrepreneurial activity, for example caused by the economic situation or certain entrepreneurial hypes. Changed legal conditions could for example distort the durations in the funnel steps if they build up additional barriers to reach certain funnel steps or vice versa if they lower them down.

In such a dynamic equilibrium, the number of items in each funnel step  $N_i$  is equal to the items entering the funnel step in the given time period times the average duration of the items in this step:

$$(I) N_i = s_i \times d_i$$

This describes the pool size of items in the funnel. Since it is constant, the balance of flow sizes, so the number of new items entering a particular funnel step and the items either proceeding to the next funnel step or totally dropping out of the funnel, is zero. The items getting into a funnel step is therefore equal to the sum of the number of items proceeding to the next funnel step plus the number of items leaving the funnel:

$$(II) s_i = s_{i+1} + f_{i+1}$$

Combining the two formulas also sets the pool size of items in a funnel step and their average duration into relation with the flow sizes:

$$(III) N_i / d_i = s_i = s_{i+1} + f_{i+1}$$

Therefore, the probability of reaching the next funnel step in a given time period is equal to the number of items proceeding to the next funnel step divided by the total number of items – whether proceeding to the next funnel step or dropping out of the funnel:

$$(IV) p_i = s_{i+1} / (s_{i+1} + f_{i+1})$$

Combining formula (IV) with formula (III) gives:

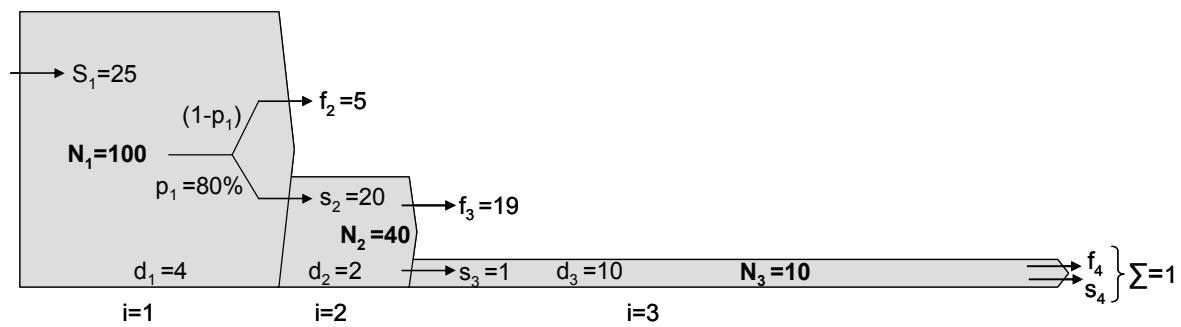
$$(V) p_i = s_{i+1} / s_i$$

Since  $s_i = N_i / d_i$  (III),  $p_i$  can also be described by:

$$(VI) p_i = (N_{i+1} \times d_i) / (N_i \times d_{i+1})$$

The above formulas can be used to completely quantify the entrepreneurial funnel including the average probability for a single individual to proceed to the next funnel step, if input parameters, like the number of items in each funnel step and their durations are known. As for an exemplary calculation (see figure below), let us assume that a survey with a representative sample identified 100 potential entrepreneurs in funnel step I, 40 in funnel step II and 10 in funnel step III. The durations of the funnel steps according to the survey were 4 years for funnel step I, 2 years for funnel step II and 3 years for funnel step III. According to the numbers, one might think the probability  $p_1$  to move from funnel step I to II is 40%, since in

the dynamic equilibrium there are always 100 items in step I and 40 in step II. However, this is not true, because the durations were not taken into account. Since the duration of the first funnel step is 4 years and the pool size is 100 items, each year 25 new items ( $100/4=25$ ) must enter this funnel step and the same number of items must leave it – either to proceed to the next funnel step or to drop out of the funnel. The pool size of items in funnel step II is 40 with an average duration of 2 years. Therefore 20 new items ( $40/2=20$ ) must enter the funnel each time period and the same number leaving it. Since 25 items are leaving funnel step I and 20 are entering funnel step II, the balance of 5 ( $25-20=5$ ) must leave the entire funnel after step I. Since 25 items are entering funnel step I and 20 make it to the next funnel step after an average of 4 years, the probability  $p_1$  for each item entering funnel step I to make it to funnel step II is 80% ( $20/25=80\%$ ). So the probability in reality is twice as high as the perhaps intuitively estimated one of 40%. This illustrates the importance of taking the durations of each funnel step into account.



**Fig. 27:** Exemplary calculation of the probabilities to proceed from one funnel step to the next

Representative studies like the Global Entrepreneurship Monitor (Kelley et al. 2011) are hereby called to include these questions in their next surveys, to allow calculation of the entire entrepreneurial funnel. A missing number not surveyed yet is the duration of each funnel step according to the possible approaches described above. If this question was included in the following surveys, these studies would allow calculating the probability of nascent entrepreneurs to actually become entrepreneurs. This important information is missing right now.

This empirical study of this research did not aim to survey all the measures for filling the Entrepreneurial Funnel with numbers. It rather focused on the particular funnel step before foundation and investigated the role of fear in this step in great depth. Therefore the generated data is not comprehensive and representative enough to be used to fill the funnel with data. However, there are some existing research studies, which provide single data points that can

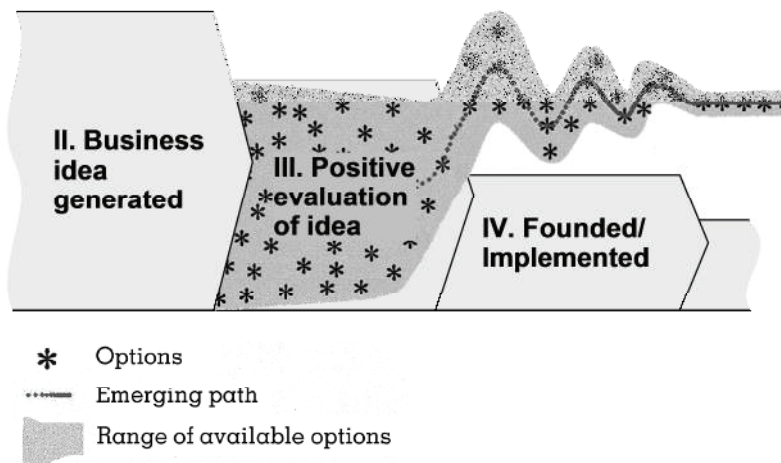
be used in the funnel (Ullrich 2013; Hagen et al. 2011; Fiet 2001; GfK et al. 2012; Brixy et al. 2011). Since the survey methods, the base population, the year of the survey, etc. for all of these studies were different, the results cannot be directly compared, but however give an indication of the magnitude.

### **5.3 Success and Failure in the Entrepreneurial Funnel**

The process model of the Entrepreneurial Funnel was developed to facilitate the research goal to better understand the role of fear for venture creation before and after foundation. Therefore, understanding success and failure in the single steps of the entrepreneurial process is crucial. Before investigating this, it will be discussed if there is a greater force supporting or hindering the general evolutionary selection process (Campbell 1965; Staber 2002) and hence the movement through the overall funnel. To do so, the concepts of path dependence (David 1985; David 2001; Arthur 1989; Arthur 1990; Stack & Gartland 2003; Sydow et al. 2009) are applied.

#### **5.3.1 Path dependence within the Entrepreneurial Funnel**

Viewing the Entrepreneurial Funnel or similar process diagrams of entrepreneurial venture creation, it might appear that a path leads through the funnel steps from generally considering becoming an entrepreneur, over generating business ideas to finally founding a company. As these steps are in sequence in the process, it might seem that the natural way would be to progress from one step to the other and dropping out of a step would be rather an exception. However, it can be argued that the opposite is the case. By applying the concept of path dependence (David 1985; David 2001; Arthur 1989; Arthur 1990; Stack & Gartland 2003; Sydow et al. 2009) on the Entrepreneurial Funnel it unveils that staying within the process is actually the exception and that the path in every single step in the process leads out of it. This study assumes that staying in the process and finally becoming a founder requires constant breaking of the path. The following sections will substantiate this thought.



**Fig. 28:** The concept of Path Dependence (Sydow et al. 2009) applied to the Entrepreneurial Funnel

To understand this surprising phenomenon, the single effects that are leading to path dependency have to be analyzed. As introduced in the section on path dependence (section 3.2.8), four major effects develop self-reinforcing mechanisms that eventually lead to organizational rigidity: learning effects, adaptive expectations, coordination effects and complementary effects (Sydow et al. 2009). As these effects are based on cognitive and emotional barriers of decision makers, the concept can not only be applied to organizations, but individuals as well and hence be used in the context of potential entrepreneurs in the Entrepreneurial Funnel.

### Learning effects

The learning curve in economics is a concept with long history in research (Yelle 1979; Spence 1981; Adler & Clark 1991). These learning effects are based on the fact that “the more often an operation is performed, the more efficiency will be gained with subsequent iterations” (Sydow et al. 2009). As repetition usually creates efficiency, there is an incentive to stick to the same actions as performed before. Whatever an individual has done before, stopping to do it and becoming an entrepreneur is clearly something new. Learning of previous experiences and the subsequent efficiency gains of continuing cannot directly be used when becoming an entrepreneur. This situation can be compared with established companies with a high staff turnover, where new employees enter the company at another level of the learning curve. Research shows, that such companies “significantly underperform their rivals” (Hatch & Dyer 2004, p.1155). Usually, the longer the individual was in his/her current occupation, the better he/she got in it (Spence 1981). This builds up opportunity costs and makes it harder to give up this current occupation.



Also, with every change in occupation over time, learning gets more difficult, since “[v]iewed as a learning machine, a man may become less and less productive as he grows older” (Ben-Porath 1970, p.153). Changing the occupation might therefore not only require starting at another point of the learning curve but also on a learning curve with flatter slope (Ben-Porath 1970, p.153). This argumentation can be further supported by using theories of human capital, which argue that investments in human resources can increase productivity (Werner 2011). A link between human capital theory and learning effects can be established, since investments in human capital, for example through training programs, can “significantly improve learning by doing, which in turn improves performance” (Hatch & Dyer 2004, p.1155). That means, “firm-specific human capital” (Hatch & Dyer 2004, p.1155) can increase the slope of the learning curve within the respective company. Starting over new at a new venture again comparatively decreases the slope of the learning curve.

The same learning effects apply for the use of heuristics and mental models for decision-making (Prahalad & Bettis 1986). They are also used to reduce complexity in the human brain and lead to higher efficiency in decision making (Prahalad & Bettis 1986). To engage oneself with an entirely new situation, like becoming an entrepreneur, which requires a totally different mindset can lead to inefficient decision-making. The supposable path is to continue the current situation the same way as before. Becoming an entrepreneur therefore requires breaking the path.

### **Adaptive expectations**

The effect adaptive expectations describes the phenomenon that preferences “vary in response to the expectations of others” (Sydow et al. 2009, p.700). Decision makers tend to anticipate what others expect from them and to decide accordingly. They do not want to be “outsiders” who deviate from the group (Kulik et al. 2008). As people usually expect for the future what they experienced in the past, this causes a continuous path (Sydow et al. 2009). Certain best practices evolve in organizations, which is generally not a bad thing, as they might increase competitiveness (Szulanski 1996). Members of the organization tend to follow these best practices in expectation that others would do the same, since they want to be part of the mainstream (Kulik et al. 2008). This adaptation reinforces these best practices, since “[a]daptation creates rules (and even rituals) of behavior” (Luhmann 1995, p.122). Before a person becomes an entrepreneur, he/she is in another context, for example in a previous occupation, still in education or even in unemployment. Whatever the previous state is, the

potential entrepreneur faces certain expectations of his/her environment. Being in an employment situation, supervisors, co-workers and even external parties who interact within the business context expect from the individual to continue the current occupation. At most, they expect changes within the current organization, for example by being promoted to a superior position or switching to another division. What they do not expect is that the potential entrepreneur leaves the company. Even if the prospective founder is not in an employment situation, his/her environment has certain expectations. Coming out of university, professors, friends and family might expect to get a safe job in an employment situation with fixed salary and to gather money and work experience. Even though there might be supporters for the idea of starting an own venture, the negative opinions might prevail, since cognitive biases often lead human beings to rely more on negative than on positive information, when estimating expected behavior (Baron 2004). Taking the risk of becoming an entrepreneur right away might distract the social environment of the founder. This applies also if the entrepreneur has no previous occupation at all and is for example coming out of unemployment. The social context, like family and friends as well as authorities, like the employment bureau or social security agencies, expect from the individual to find secure employment with a work contract. These examples illustrate that in most thinkable situations the potential entrepreneur could come out of before founding, the social environment has strong expectations of the individual not to become an entrepreneur. If the prospect founder still does so, he/she does not live up to his/her peers' expectations and takes the risk of becoming an "outsider" of his/her social group (Kulik et al. 2008). It is also hard to build up a new social group whose expectations support entrepreneurship at the moment of taking the decision to found. This is because the founder just starts to be an entrepreneur and probably has not yet built up a strong network in the entrepreneurial community. Also shortly after foundation it might be hard to build up a new social group where he/she can feel as an "insider" again, because usually the founder is quite alone at the top of his/her company. His/her employees are in another social context, as they are not founders. To find real peers who can support his/her entrepreneurial decisions, he/she would have to reach out to other founders or mentors. The above argument shows that taking the decision to found, actually founding and being an early entrepreneur requires ignoring the expectations of other and not adapting to them. This means that the natural path leads out of the Entrepreneurial Funnel at this stage and staying within the process and becoming an entrepreneur requires breaking the path.

## **Coordination effects**

Coordination effects describe the phenomenon that sticking with established teams and processes makes the outcomes predictable and hence more efficient and comfortable. Implicit or explicit rules facilitate coordination among different people the more, the more people use them (North 1990; Sydow et al. 2009). This creates a “[m]ore efficient interaction among these actors” (Sydow et al. 2009, p.699) and hence “coordination costs can be significantly reduced” (Sydow et al. 2009, p.699). In his/her previous occupation the prospect entrepreneur benefits from this coordination and the resulting synergies and cognitive confirmation. He/she comes out of a professional as well as private social situation that is well-rehearsed and he/she knows the way to behave in this context. In the situation of entrepreneurship, this effect can cause escalating commitment towards the current choice of decisions and actions (Freiling et al. 2010). This does not only apply to a new venture in a start-up company but also an innovative venture within an established company. Sydow et al. (2009) connects such examples to coordination effects of path dependence. For example, newspaper companies which were too locked in, in their rigid routines to capture opportunities in the online market (Gilbert 2005) or the photo company Polaroid, which did not manage to reallocate their R&D structures towards the development of a new product suited to the new market requirements (Tripsas & Gavetti 2000). The same might apply in an employment situation and lead to sticking to the current occupation. Often employees have developed a certain feeling over time which behavior in the job is appreciated and leads to acceptance and success and which does not (Sydow et al. 2009). Becoming an entrepreneur, the prospect founder has to give up this efficient, predictable context and move into unknown territory. This step is even harder than just switching jobs to a new company, because as the new company already exists, there are these unwritten rules and cultural behavior guidelines already in place (Luhmann 1995; Szulanski 1996). They just have to be learned and adapted to, but not newly developed. In a new venture however, usually there is no established team and also the cultural and organizational environment within the startup are yet to be created. Therefore, there are no explicit or implicit rules and codes of conduct that would give guidelines how to behave and how to take decisions. All the coordination has to be built up from scratch. This increases not only uncertainty but also pure effort. These coordination effects incentivize the potential entrepreneur to stay in his/her previous well-rehearsed situation and not take the step to give up this developed efficiency by starting a new venture. Again, this self-reinforcing effect creates path dependence with the obvious path leading out of the Entrepreneurial Funnel. Staying within the process and finally becoming an entrepreneur requires breaking the path.

## **Complementary effects**

Complementary effects describe that the combination of certain input factors, processes or output factors can create additional value due to “Economies of Scope” (Panzar & Willig 1981). The whole entity can be more than just the sum of the parts. This could apply to two or more single employees or business divisions working together as an established “Dream Team” (Sydow et al. 2009), or that a combination of certain products or services is more efficient than producing or selling them separately (Panzar & Willig 1981; Sydow et al. 2009). This leads to a situation where new rules and behaviors are only introduced if they are in line with the current practices and therefore are complementary (Sydow et al. 2009; Freiling et al. 2010). The complementary effect could simply be the combination of the workplace and the employee. A young investment banker directly coming out of university might earn a very high salary right from the start. No matter how smart he/she is, it is not very likely that he/she would achieve such a high initial income in another industry or by being self-employed. Vice versa, the investment bank would not be able to generate such high revenues to be able to pay these salaries without the smart and motivated graduates. In this example, the workplace of the investment bank and the individual graduate complement each other to develop a high value. The synergies result of the separate but however interrelated resources (Pierson 2000; Stieglitz & Heine 2007). A potential entrepreneur in his/her previous occupation can take advantage of these complementary effects. Having other components provided by the organization reinforces the impact of the own components. This could be input factors, like a well-established cooperation between two divisions. For example a strong market research department could boost the efficiency and effectiveness of the market communication department by providing them with exact descriptions of target groups and hence allowing creating perfectly targeted advertising messages (Prahalad & Hamel 1990). It could also be output factors that reinforce each other in sales. For example a strong research and development and production division of batteries could complement the division of power units of an automotive OEM in the development of electrical cars. There might be no particular separate demand for high capacity batteries but in the combination with an electrical car they get a whole new meaning and value. Vice versa, the electrical car might have a superior design and power unit, but gets dramatically increased in value in the combination with a market leading battery quality and hence an extended range. (David 1994, p.214) refers to such fruitful combinations as “institutional clusters” (David 1994, p.214; Sydow et al. 2009). These interactions determine a path of sticking to the current complementary entities, which get increasingly dominant as action patterns (Leonard-Barton

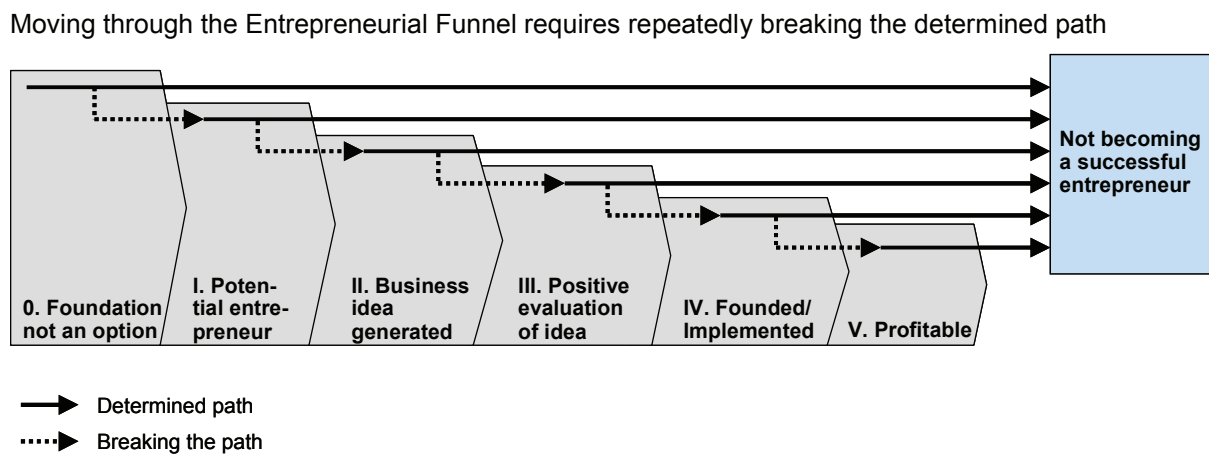
1995). When the potential entrepreneur leaves such established clusters, he/she has to leave the resulting benefits behind. Complementary units have to be built up from the scratch in the newly founded venture. Therefore, complementary effects tend to force the prospect entrepreneur to stay on the current path and continue his/her previous occupation. Implementing his/her idea and actually founding a company requires breaking this path.

### **Path dependence in the single steps of the Entrepreneurial Funnel**

The investigation of the self-reinforcing effects that can lead to path dependency (Sydow et al. 2009) shows, that all of them counteract becoming an entrepreneur. However, so far the discussion above mainly focused on changing from an employee position to self-employment, so the entrepreneurial process over all. However, it can also be applied to the single steps in the Entrepreneurial Funnel. While no irreversible steps have been taken to start the own venture, for example quitting the previous job, the potential entrepreneur always has still the fallback option of discarding his/her idea of founding a company and continuing with his/her current occupation (McGrath 1999). Therefore, for every funnel step before the actual foundation of the company (funnel steps 0-IV), the above arguments can be made to support the thought of the dependent path leading out of the funnel. The most crucial one here is the transition from step III (“Positive evaluation of idea”) to step IV (“Founded/Implemented”), as this advance might likely create hardly reversible facts. But also reaching the next step (“V. Profitable”) can be hindered from the perspective of path dependency, since the entrepreneur always has the chances to give up his/her currently chosen path of running an own venture and return to an occupation similar to his/her previous one. Under the viewpoint of real options reasoning, the entrepreneur can constantly weight up his/her different options and turn to a more favorable one (McGrath 1999). So if the company does not immediately show the hoped results of the entrepreneur has to withstand a dry spell in his/her venture, he/she could abandon his/her company and turn to another available option of occupation (McGrath 1999). There are also opposing views of real options thinking in the entrepreneurial context. Landier (2006) argues, entrepreneurs often have a highly subjective evaluation of the current performance and future prospects of their venture. They often over-value the impact of a failure and the according feared stigma of failure (Ullrich 2013; Landier 2006; McGrath 1999) and hence hold on to start-ups, even though they are not promising any more (Landier 2006). This finding further supports the thought of path dependence towards failure, as it describes a situation, where an entrepreneur who already founded a company (step “IV. Founded/Implemented”) does not achieve to reach the subsequent step (“V. Profitable”). Due

to the irrational hesitance to terminate the project and start over again with a more promising option (Landier 2006), for example going back the previous occupation or starting again with another business idea, he/she fails to reach the next step.

The argument above concludes in supporting the idea that moving through the Entrepreneurial Funnel requires leaving the predetermined path repeatedly. This might be counterintuitive, because the steps of becoming an entrepreneur in the process view seem to be automatically following each other subsequently. However in reality, moving all the way through the process is rather the exception. The following figure illustrates this circumstance.



**Fig. 29:** Path Dependence (Sydow et al. 2009) in the different steps of the Entrepreneurial Funnel

### 5.3.2 Reasons for success or failure in each step from a theory perspective

In the above reasoning, it was argued that there is a structural trend to drop out of the funnel in each step, independently from the individual entrepreneur or venture. Additionally, there are most likely also case specific influence factors. Each step in the Entrepreneurial Funnel characterizes different challenges, the entrepreneur has to get across. Within each funnel step, there are both individual causes of success (i.e., proceeding to the next funnel step) and failure (i.e., not reaching the next funnel step).

Entrepreneurship Theory can be used as a theoretical foundation to explain the causalities of success and failure for different entrepreneurs in different steps of the funnel. Entrepreneurship Theory investigates the formation of new ventures, traits of the individual

entrepreneur as well as the success factors for entrepreneurial activity (Bull & Willard 1993). Combining these can help to understand the challenges in the different funnel steps, by investigating what the entrepreneur has to *be* and what he/she has to *do* to succeed in the different steps of the funnel. An individual who founds a company in the expectation of a certain kind of personal gain does that under the conditions of motivation, expertise and environmental influences (Bull & Willard 1993). Additionally, the socio-demographic background matters (e.g., Baron 2004; Lazear 2004; Reynolds 1997; Davidsson & Honig 2003; Rotefoss & Kolvereid 2005). Grounded in his/her personal characteristics, the entrepreneur has to fulfill various business functions to become successful in the venture creation process (Freiling 2008). The functions innovation, coordination, arbitrage and risk management can be causally connected to competitiveness and hence performance in the entrepreneurial context (Freiling 2008).

The personal attributes of an entrepreneur can be connected to the capability of fulfillment of these functions. Research broadly agrees that the founder is the major driver of success (Brüderl et al. 1992; Bates 1990; Jo & Lee 1996; Markman & Baron 2003; Stuart & Abetti 1990; Herron & Robinson 1993; Chandler & Hanks 1994; Storey 1994; Brüderl & Preisendörfer 2000; Lee & Peterson 2000; Colombo & Grilli 2007; Freiling & Wessels 2010) or failure (Brüderl et al. 1992; Brüderl et al. 1991; Aldrich & Zimmer 1986; Szyperski & Nathusius 1977; Klandt 1984; Schübler & Voss 1988). Since according to theory, there is a causal connection between the fulfillments of certain entrepreneurial functions, this study argues, that the background of the entrepreneur can influence the fulfillment of these functions. An obvious example is previous experience. When a founder has work experience in the field of marketing or R&D, it might be supportive for him/her to fulfill the innovation function. Also education has a positive influence on the success of a venture (Chandler & Jansen 1992; Brüderl et al. 1992; Cooper et al. 1988; Cooper et al. 1994; Jo & Lee 1996; Hagen et al. 2011; Stuart & Abetti 1990). It can be assumed that education has an indirect influence on the success. Since education is intangible and success or failure is caused by concrete actions of the entrepreneur (Bull & Willard 1993), it is likely that education influences the entrepreneurial actions. These could be the fulfillment of entrepreneurial functions. Therefore, since the attributes of the entrepreneur influence the ability to perform the entrepreneurial functions which cause success or failure, the causal chain leading to success or failure can be extended to the personal attributes of the entrepreneur.



Certain attributes of the entrepreneur, for example education or previous experience, can further be viewed under a human capital perspective (Becker 1975; Werner 2011; Pennings et al. 1998; Brüderl et al. 1992; Preisdörfer & Voss 1990). While some attributes of the entrepreneur are given properties, for example sex or origin, others could be actively built up over time, for example work experience or education. Since human capital can be viewed as an investment in an individual causing productivity gains (Werner 2011), an entrepreneur with a high level of education and experience can be interpreted as a founder with additional (human) capital endowment to start with. Under a competence-based view according to CbTF (Freiling et al. 2006), which also includes resource-based aspects, this can be theoretically interpreted as a cause for success. Here again, “the chain of causality” (Freiling 2004) does not see the resources as a root-cause but rather an advantage that can be played through certain competences (Freiling 2004). This human capital endowment might be helpful in different ways along the Entrepreneurial Funnel. Entrepreneur-specific human capital (Preisendörfer & Voss 1990; Brüderl et al. 1992) might be important in earlier funnel steps to develop creative business ideas, gathering the team, etc. and in later funnel steps to develop innovative solutions for upcoming operational problems. Industry-specific human capital (Preisendörfer & Voss 1990; Brüderl et al. 1992) might be especially helpful to detail an industry specific idea and to execute operations in the later funnel steps.

Especially in earlier steps of the funnel, also Affect as Information theory (Gohm & Clore 2002; Clore et al. 2001) can play a role. Emotions can influence decision-making and according actions (Clore & Huntsinger 2009; Clore & Huntsinger 2007; Clore & Palmer 2009). This might be especially important in the middle of the funnel, when it comes to taking the decision whether to finally found the company or not. Since the focus of this study is on fear in this phase of the venture creation process, these aspects are of special importance.

With the theoretical background of causal relationships between the attributes of the founder and his/her actions, success and failure in the different funnel steps can be investigated. Here, reasons leading to success or failure within one funnel step and reasons affecting multiple funnel steps will be differentiated.

### **Success and Failure within one step of the Entrepreneurial Funnel**

The causes for success and failure within one funnel step are likely to be ‘asynchronous’ (McGrath 1999; Zacharakis et al. 1999; Shepherd 2003; Fallgatter 2002). This means that, for example, failure reasons can be more than simply the negation or the absence of certain



success reasons. One reason that research on entrepreneurial failure is not as numerous as on success, might be that it is often assumed, that the negation or absence of causes for success might be sufficient to explain failure. Research shows, that this is not always the case (Freiling et al. 2010; Nicolai & Kieser 2002; Hansen 2009). The funnel helps to highlight, which causes explain both success and failure in a specific funnel step (e.g., existence or lack of certain competencies) and which reasons either cause success or failure (e.g., it might be that changes in legal regulations can cause failure but not very likely success).

### **Different challenges between different steps of the Entrepreneurial Funnel**

The Entrepreneurial Funnel helps to distinguish reasons for success and failure between the different funnel steps and hence allows the derivation of causalities. Up to now, existing research on entrepreneurial failure (e.g.: Zacharakis et al. 1999; Freiling & Estevão 2005; Shepherd 2003; Freiling & Wessels 2010; McGrath 1999) often neglects to clearly differentiate which funnel step certain failure causes apply to. Usually, the only differentiation is between the moment of foundation (e.g.: Ucbasaran et al. 2007; Reynolds 1997; Cooper et al. 1994; Werner 2011; Hagen et al. 2011; Rotefoss & Kolvereid 2005; Ullrich 2013) and the moment of success with the founded company (e.g.: Chandler & Jansen 1992; Brüderl et al. 1992; Cooper et al. 1988; Cooper et al. 1994; Jo & Lee 1996; Stuart & Abetti 1990; Markman & Baron 2003; Freiling et al. 2010). Since different reasons apply in different funnel steps and since these reasons are likely to interact, it is essential to conduct this differentiation to understand the real causes of failure. The cognitive biases of overconfidence or over-optimism for example might account for a higher success rate in founding a company (Cassar 2010; Forbes 2005; Cooper et al. 1988; Koellinger et al. 2007; Arenius & Minniti 2005) but also a higher failure rate in making the venture profitable, once it is founded (Koellinger et al. 2007). The framework of the Entrepreneurial Funnel can also help foreseeing upcoming problems in the next funnel steps. Evaluating which problems potential entrepreneurs anticipate for the next funnel step can identify “blind spots” (unaware upcoming problems) or overrated reasons (anticipated problems, which are not likely to happen) and allow derivation of measures to support the potential entrepreneurs.

To achieve to generate more successful startups in a country, the challenges in all funnel steps have to be addressed, as it requires the potential entrepreneur to move all the way through the funnel to achieve a successful business. These challenges are likely to be very different. In the late funnel steps (step IV: *Founded*, step V: *Profitable*), when the startup is already existent,

especially the competencies of the entrepreneur (Freiling et al. 2010; Bates 1990; Brüderl et al. 1992; Jo & Lee 1996; Markman & Baron 2003) and access to capital play an important role (Cooper et al. 1988). In the earlier funnel steps, when it is about the decision whether to dare starting a business or not (step III: *positive evaluation of idea*), psychological aspects, in particular the fear of failure of the potential entrepreneur, play a dominant role (Welppe et al. 2012; Krause 2004; Gray 1987, p.27; Clore & Palmer 2009; Baron 2008). Even earlier, when it comes to generally considering to found a company (step 0: *Foundation not an option*, step I: *Potential entrepreneur*), the environmental and social aspects influencing the individual seem to play an important role. For example in Germany, the “entrepreneurial climate” (the values, culture and norms) and motivation across the population is rather poor (Brixey et al. 2011). Moreover the formal surrounding conditions for entrepreneurial activities, especially regulation, taxation, education and access to capital are considered rather negative by large parts of the German population (Brixey et al. 2011).

It has to be kept in mind, especially when conducting empirical observations that entrepreneurs in each funnel step already passed the previous ones. Therefore, there is a pre-selected sample in each funnel step. It could for example be that fear of foundation poses a hurdle, which only courageous entrepreneurs pass and therefore distort the basic population of existing entrepreneurs towards daringness. This should not only be kept in mind for researchers investigating entrepreneurial activities but also for academic education or policymakers, setting the surrounding conditions. As argued above, certain characteristics that prove helpful in one funnel step (e.g., overconfidence) can become a problem in another (Cassar 2010; Forbes 2005; Cooper et al. 1988; Koellinger et al. 2007; Arenius & Minniti 2005). Vice versa, certain types of entrepreneurs who are not qualified for their current funnel step, but perfectly predestinated for the next ones should be encouraged to move on. Following bold thinking, in the opposite situation, it could make sense to even discourage others, whose problems in the following funnel steps are already clearly foreseeable. Academic education could include the different challenges in their teaching and present solutions. One approach for example could be to move through the funnel in a team, with complementary profiles, each with strengths in particular funnel steps.

This study explores many of the success and failure causes for the funnel steps around the point in time of the gestation of the startup, which is in scope of this research. Here the focus of the study is on the entrepreneur as an individual, therefore the challenges connected to the personal characteristics are in emphasis. The later sections of this study will for example

identify personal attributes that can cause success or failure in founding a company (“who does actually found?”) and making it profitable (“who does actually succeed?”). As this research endeavor can only have a limited scope, it calls for further contributions from the research community in this field, to identify success and failure causes in all steps in the Entrepreneurial Funnel. Getting a holistic view of the chain of challenges across the funnel and the different requirements is an important prerequisite for academic education and policy making to improve entrepreneurial activity both in quality and quantity.

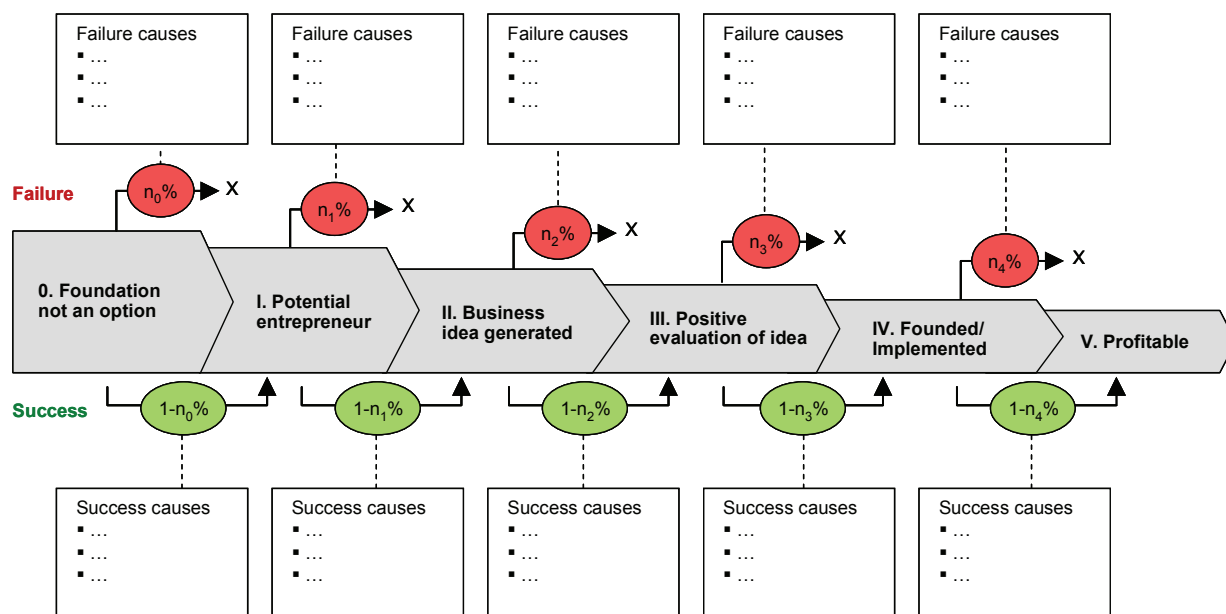


Fig. 30: Conceptual illustration of associated success and failure causes in each funnel step

### 5.3.3 The role of fear in the Entrepreneurial Funnel

As argued above, every step in the funnel poses its own challenges. This work focused on reaching funnel step IV (*Founded/Implemented*). Here, this study suggests that fear plays the predominant role in holding back potential entrepreneurs from actually founding the company. Since fear is a personal feeling, the reasonable research subject is the person of the founder and his/her individual characteristics under the theory perspective of Affect as Information (Gohm & Clore 2002; Clore et al. 2001). It is assumed that certain types of people are more prone to fear, than others, for example because they have more to lose, when they come out of a high income occupation. If this was the case, funnel step IV would not only function as a filter separating the fearful people out, but also as filter separating people with certain characteristics out. In the previous example, this would be the individuals with high previous incomes. The previous section of this work illustrated, how the funnel steps build on each other. Following this logic, it is interesting, which effect the fear filter in funnel

step IV has on the subsequent steps and how the fearful individuals who are separated out in this step would have performed in the subsequent ones. Does the fear filter hold back the non-promising founders or separate out the promising ones? In the first case, fear would actually be a beneficial mechanism that holds back people from luring themselves on to destruction. In the second case, it would be fatal for the entrepreneurial environment as the ones with high chances to create a successful company are prevented from even trying. To shed light onto this area, this study will not only work out which characteristics are connected to fearfulness of potential entrepreneurs before foundation (individuals in funnel step III: *positive evaluation of idea*) but also which are the characteristic attributes of individuals who have actually founded companies (individuals in funnel step IV: *founded*) and individuals who achieved to make their companies successful (individuals in funnel step V: *profitable*). The investigation will show, if there are common attributes with different effects in these funnel steps.

#### **5.4 Outlook and expandability of framework**

The Entrepreneurial Funnel was designed to be a very flexible and versatile framework. It can be expanded or compressed in detail for different research purposes and applied to other areas of research as well. For further detailing, the funnel steps can easily be divided into more granular steps, increasing the number of total steps. Also, steps at the beginning or the end can be added, for example when profitable companies which outperform the market or serial entrepreneurs should be researched.

The Entrepreneurial funnel basically offers two parameter values in its principal design. The first one is the kind of items passing through the funnel. These items could be entrepreneurs (input-oriented view) but they could also be modeled as ideas (output-oriented view). Depending on the research subject, the funnel can be adapted to the purpose. This study uses the funnel with entrepreneurs as items passing through. The second parameter is the type of funnel, depending on its context. It can be applied for new companies (startups), entrepreneurial activity in existing companies (corporate entrepreneurship and innovation), depending on the research topic. This study lays the focus on newly founded ventures.

Further research could contribute to the funnel in various ways. First of all, more empirical data on the number of entrepreneurs in each funnel step, their duration in each funnel step and the probabilities to reach the next funnel step could be surveyed, to get a solid understanding of the baseline of entrepreneurial activity in a specific country and the major leaks to be

addressed, when aiming to encourage entrepreneurship. Further, the causes for success or failure in reaching the next funnel step should be investigated for each individual step, as this study only focused on reaching the step of founding a company and only investigated the role of fear in depth. Last but not least, the quantification and qualification of the funnel could be surveyed for different countries or industries. Doing so, differences between different cultural contexts or different industries could be revealed.

## 6. Conceptualization of empirical research

This chapter will present the conceptualization of the empirical part of this research study. First, it will clarify the aims of the research and present the hypotheses to be tested. Second, it will present the approach that was used for the empirical study, especially the design of the conducted survey. Then, the survey sample will be described. The findings of the empirical research will be presented in chapter 7.

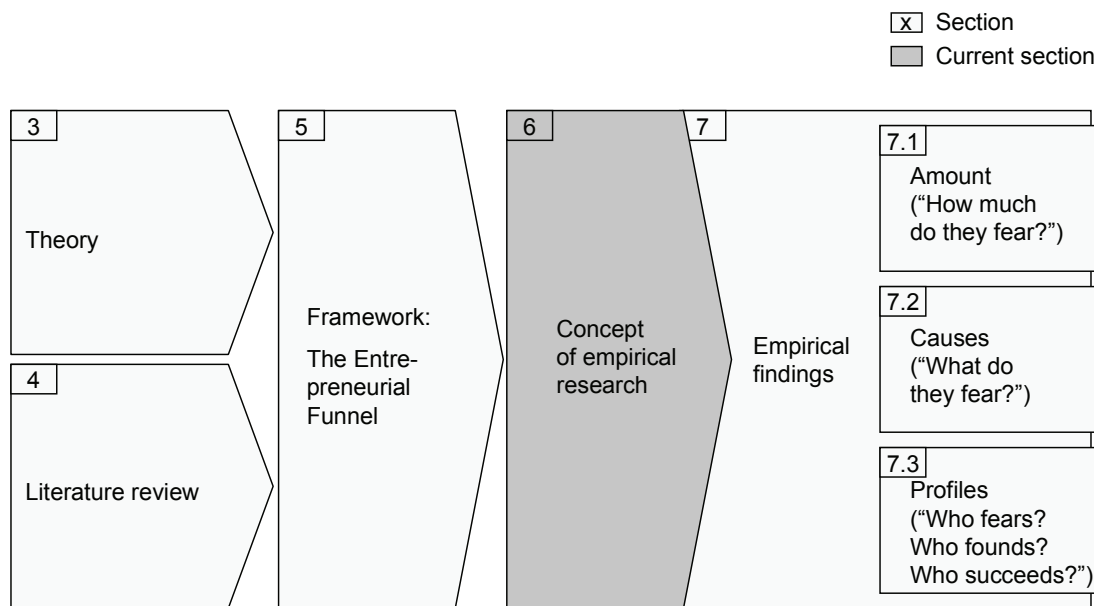


Fig. 31: Structure of this research study with highlighted current section

### 6.1 Aim of empirical research and hypotheses to be tested

The aim of this study in general and of the empirical part in particular is to get a better understanding of the entrepreneurial process, especially according to hesitance of foundation and the role of fear in the process.

A starting point of the empirical investigation of this study is the question why potential entrepreneurs refrain from founding a company. Here, the assumption to be tested is that the primary reason is the fear of failure. There are prior research studies indication this (Kelley et al. 2011; Welpe et al. 2011b). Affect as Information theory (Gohm & Clore 2002; Clore et al. 2001) can be used as a theoretical background for the hypotheses. The theory supports the argument that emotions, such as fear, can influence entrepreneurial decision-making and

subsequent actions. Therefore it could generally be aligned with theory that fear can influence the decision whether to found a company or not.

If this holds true, the adjacent question is what creates this fear of failure. According to the components of fear presented above, it should be investigated whether it is more the probability to fail or the impact it has if they fail, that frightens the nascent entrepreneurs. Findings from Prospect Theory (Kahneman & Tversky 1979) and the concepts of concepts of *anxiety in the face of risk* (Eisenbach & Schmalz 2013) and *cold feet* (Epstein & Kopylov 2007) can be used as a basis here. Prospect Theory provides a theoretical background how the perception of future events can influence human decision making (Kahneman & Tversky 1979; Tversky & Kahneman 1992).

Also, if they are afraid to fail, most likely they have certain reasons in mind which could cause the failure of their ventures (e.g., Freiling & Estevão 2005; Fallgatter 2005; Hansen 2009; Freiling 2009a; Brüderl et al. 1992). These reasons are of particular interest of this study as well. The understanding of those is key to influencing the fear of potential founders and hence encouraging – or discouraging – them to found their companies. Should the failure causes they fear not be reasonable, because these causes are not relevant in reality, entrepreneurs could be encouraged to fulfill their plans simply by creating transparency about the actual relevant failure pitfalls. Should the entrepreneurs' fears be in line with failure causes observed in reality, academics could contribute in fostering entrepreneurship by addressing the areas of common failure in education to equip the founders with the skills necessary to cope with these challenges (Freiling 2009a).

Finally, it should be investigated if there are differences between the individual entrepreneurs according to their fear. According to this topic, there is hardly any prior research available (Brixy et al. 2011; Welppe et al. 2011b). It should be found out, if certain groups of individuals face different kinds of fear, according to its amount or causes, than others. The characteristics categorizing individuals into these groups should then be compared to characteristics of entrepreneurs who actually do found companies (e.g., Rotefoss & Kolvereid 2005; Delmar & Davidsson 2000; Cooper et al. 1994; Bates 1995; Carr 1996; Hagen et al. 2011; Moog 2004; Giannetti & Simonov 2004; Ucbasaran et al. 2007; Ullrich 2013; Stam et al. 2010) and to those who actually achieve making their companies successful (e.g., Chandler & Jansen 1992; Brüderl et al. 1992; Cooper et al. 1988; Cooper et al. 1994; Jo & Lee 1996; Hagen et al. 2011; Stuart & Abetti 1990; Cooper et al. 1988; Stuart & Abetti 1990). Establishing this link would

prove, if it is really the same group of entrepreneurs with lower fear who do found companies. Also, it would show whether fear is an early indicator of later success. It might be, that founders with lower fear just over-estimate themselves and hence often fail with their companies. The other way round, it could be that there are certain groups of individuals who face high amounts of fear and hence do not found companies but who would have all the prerequisites to lead companies to success, once they founded. A theoretical background for this part can be found in Human Capital Theory (e.g., Becker 1975) and Competence-based Theory of the Firm (CbTF) (Freiling et al. 2008). Human Capital Theory argues that investments in the capabilities of individuals can increase their productivity and eventually the productivity of the organization they work for (Becker 1975; Davidsson & Honig 2003; Bates 1990; Werner 2011; Hatch & Dyer 2004; Pennings et al. 1998; Cooper et al. 1994). The Competence-based Theory of the Firm (CbTF) can build on this line of reasoning and explain the link between competences of the organization and corresponding firm survival (Freiling et al. 2008). With this background, a theoretical link can be established between the attributes of the entrepreneur and his/her chances to found a company and achieve its survival.

The following list summarized the research questions raised above:

### **Why do they fear?**

- Why do potential entrepreneurs hesitate to found companies? Is it because of fear of failure?
- According to fear of failure, do potential entrepreneurs fear the probability of failure or its impact?

### **What do they fear?**

- Which causes do potential entrepreneurs fear that would lead to failure?
- Do these feared failure causes actually occur in reality?

### **Who fears?**

- Who are the entrepreneurs who fear in general and who fear particular failure causes?
- Are the individuals with lower fear those who actually found companies and make them successful?



Based on the above research questions hypotheses were generated which should be tested in the empirical part of this study. The first assumption is that the entrepreneurs' fear to found their companies is caused by the fear that they could fail with it, once founded (Brixy et al. 2011). It is an assumption that fear to found a company increases the hesitance to actually found it (Brixy et al. 2011). However, this remains an assumption and will not be validated in this study, as it would require a longitudinal survey design which was not planned for this study. Nevertheless, there are hints in existing literature (Kelley et al. 2011; Welpe et al. 2011b; Arenius & Minniti 2005) that suggest that fear indeed prevents action. Literature on this topic will be discussed in the section on fear of failure.

#### Hypothesis 1a:

Fear of failure is the dominant driver of fear of foundation for potential entrepreneurs.

Prior studies investigated fear of foundation and fear of failure, but have not sufficiently detailed the connection between the two (Brixy et al. 2011). This general causal hypothesis can be broken down into further, more detailed hypotheses, by disassembling fear into its elements probability and valuation, as described in the section on the components of fear of failure (section 6.3.3). The first hypotheses to be validated aims to support the theoretical assumption of the components of fear drawn from calculus (Ibe 2009, p.39) and Prospect Theory (Kahneman & Tversky 1979).

#### Hypothesis 1b:

Fear of failure is mainly driven by the components *perceived probability of failure (belief)* and *perceived valuation of failure (preference)*, whereas probability stands for the odds of failure and valuation for the perceived impact of the failure on the future of the entrepreneur.

It is unlikely that both of those two components have the exact same importance according to fear. Literature suggests in similar cases of decisions under uncertainty, that the dimension *valuation* is more important for human decision makers than *probability* (Dobelli 2011, pp.106, 233; Sunstein 2002; Kahneman & Tversky 1979). It would make sense that in the decision situation whether to found a company or not, this is the case as well.

#### Hypothesis 1c:

Out of the main two components of fear of failure, the *perceived valuation of failure (preference)* has a higher impact on the overall fear of failure than the *perceived probability of failure (belief)*.

While it is assumed that the component *perceived valuation* is generally more important than *perceived probability*, it could well be that this changes in different situations. The Entrepreneurial Funnel also represents the time to the final decision-making. Existing literature suggests, that time to decision-making or time to resolution of uncertainty can influence the preferences of human decision makers (Epstein & Kopylov 2007; Eisenbach & Schmalz 2013). Therefore the study suggests different importance of the two components of fear for different funnel steps.

#### Hypothesis 1d:

The dominant component of fear of failure (i.e. the component *perceived probability of failure (belief)* or *perceived valuation of failure (preference)*, which has the higher impact on overall fear of failure) differs between entrepreneurs in the different steps in the Entrepreneurial Funnel.

Following the hypotheses according to fear of failure, a set of hypotheses is to be tested according to the causes for that fear. Generally, in an explorative part of the survey, it should be determined which reasons the prospect founders anticipate that could lead their companies to failure.

#### Exploration:

Which causes that could lead to their companies' failures do potential entrepreneurs anticipate and as how important do they estimate each one?

This exploration should then be compared to actual reasons, why companies fail drawn from literature review (e.g., Freiling & Estevão 2005; Fallgatter 2005; Hansen 2009; Freiling 2009a; Brüderl et al. 1992). It is unlikely that there is an exact match between the actual failure reasons and the ones that nascent entrepreneurs anticipate before founding.

#### Hypothesis 2a:

The reasons why their corresponding ventures might most likely fail, which potential entrepreneurs anticipate before founding, do not entirely match actual empirical observations of the most common reasons for failure of startup companies.

If this is the case, there are four possibilities to categorize the failure reasons. There could be matching reasons between actual observation and anticipation, there could be reasons that are observed in reality but not anticipated, reasons that are not observed in reality but anticipated

and finally reasons which are neither observed in reality nor anticipated. The latter are not considered real failure reasons since they are neither relevant in anticipation nor in reality, so they are out of focus of this study. The three other categories are considered in the following hypotheses. The following figure will illustrate the four categories.

		Frequently anticipated by potential entrepreneurs?	
		yes	no
Frequently observed in reality?	yes	"reasonable"	"blind spots"
	no	"overrated"	"irrelevant"

**Fig. 32:** Conceptual illustration of failure reason categories

#### Hypothesis 2b:

Potential entrepreneurs anticipate certain reasons to be responsible if their venture should fail, which match actual empirical observations of the most common reasons for failure of startup companies (existence of "reasonable reasons").

#### Hypothesis 2c:

Potential entrepreneurs anticipate certain reasons to be responsible if their venture should fail, which cannot be observed in actual empirical observations of the most common reasons for failure of startup companies (existence of "overrated reasons").

#### Hypothesis 2d:

Potential entrepreneurs do not anticipate certain reasons as a likely cause if their venture should fail, which however can be observed in actual empirical observations of the most common reasons for failure of startup companies (existence of "blind spots").

These general hypotheses can be broken down into further, more detailed hypotheses, by clustering the potential entrepreneurs by their attributes and by disassembling fear into its elements probability and valuation. The according findings will be presented in section 7.2.

The next set of hypotheses suggests that the amount of fear of failure depends on certain attributes of the potential entrepreneur (Brixey et al. 2011). The first hypothesis suggests that potential entrepreneurs can be clustered according to certain attributes into groups with different amounts of fear.

#### Hypothesis 3a:

Potential entrepreneurs can be clustered according to certain attributes into groups with different amounts of fear.

Out of conceptual thoughts, the study suggests that more skilled entrepreneurs, according to their education, previous career, etc. are facing higher fear than entrepreneurs with a lower skill profile (for a literature review of this topic see sections 7.3.2.3, 7.3.3.2). According to Human Capital Theory (Becker 1975; Davidsson & Honig 2003; Bates 1990; Werner 2011; Hatch & Dyer 2004; Pennings et al. 1998; Cooper et al. 1994), due to the productivity gains caused by human capital investments, the probability of success should become higher. Even though they have higher entrepreneurial abilities, they also have more to lose in terms of previous careers they would be giving up and higher opportunity costs. If hypothesis 1c holds true, the evaluation of the valuation of a failure should be higher than its probability, when taking the decision whether to found or not. Therefore, a higher skill profile should increase the fear of foundation overall.

#### Hypothesis 3b:

A high competence (skill) profile of a potential entrepreneur will lead to a higher amount of fear of founding a company.

According to motivation, this study suggests that high motivation counterfeits fear and encourages foundation (Baron 2004; Shane et al. 2003; Cardon et al. 2009). Vice versa, prospect entrepreneurs who are not very motivated, could face higher fear to fail and subsequently higher fear to found a company. Affect as Information theory can be used as a theoretical backing of emotions influencing entrepreneurial action (Gohm & Clore 2002; Clore et al. 2001).

#### Hypothesis 3c:

A low motivation (will) profile of the potential entrepreneur will lead to a higher amount of fear of founding a company.

In a further step, the findings from the empirical part of the study will be compared to previous research. Once the attributes of the potential entrepreneurs are identified that lead to fear of failure, those attributes will be compared to attributes of entrepreneurs who actually do found companies and those who achieve to make them successful. Matches and deviations of this comparison will then be evaluated and discussed.

## **6.2 Empirical approach**

This study aims to provide empirical evidence for the hypotheses presented in the previous section and to investigate the highlighted explorative part. Due to the early research state of this area, scholars support the view to investigate the field with empirical studies first, rather than with pure theoretical thoughts (Fallgatter 2005). An according empirical survey faces five major challenges: (1) measuring the entrepreneurs' overall fear of foundation and fear of failure, (2) quantifying their fear along perceived probability and valuation of failure, (3) identifying the suspected reasons for failure and (4) quantifying the importance of these reasons and finally (5) clustering the entrepreneurs by specific attributes into groups with different fear profiles. These insights could generally be generated using qualitative as well as quantitative research or a combination of both. Researchers argue that there are three general research paradigms: qualitative research, quantitative research and mixed method research (Johnson et al. 2007). All approaches have different strengths and weaknesses.

Classical qualitative empirics (c.f. e.g., Silverman 2010), e.g., investigating case studies or conducting interviews could have advantages on the explorative aspects, like collection perceived reasons of failure. Another strength could be to get a better feeling for the amount of fear of the interviewee through less explicit statements and signals. On the other hand, this qualitative approach could be less objective, because the interviewer is involved in the interpretation of the responses of the interviewee. Furthermore, this approach would only be feasible with a lower sample size. However, to cluster different groups and distinguish their fear profiles significantly, a relatively big sample size is necessary (Johnson & Onwuegbuzie 2004). For a more detailed evaluation of the strength and weaknesses of qualitative research see research by Johnson and Onwuegbuzie (2004, p.20).

Classical quantitative empirics (c.f. e.g., Muijs 2010), e.g., usage of an online questionnaire, have different strengths and weaknesses for the aspired research. A strength is that it could be more capable in quantifying the different aspects of fear. It could also generate more honest

and less socially conform answers on fear, through its anonymous character. As the survey would be feasible with a bigger sample size, it would be more suitable to differentiate clusters of respondents. On the other hand, a quantitative survey could have certain weaknesses. It could, for example, face challenges in exploring unexpected perceived reasons for failure and in revealing unconscious attitudes and beliefs of the respondents. Also the complexity of the object of research and the current state of research are challenges for quantitative empirics (Johnson & Onwuegbuzie 2004). For a more detailed evaluation of the strength and weaknesses of qualitative research see research by Johnson and Onwuegbuzie (2004, p.19).

Mixed methods research basically is a pragmatic combination of qualitative and quantitative research. While no common definition has emerged yet (Johnson et al. 2007), there is agreement on the general idea of the approach. After reviewing the currently used definitions of mixed methods research, Johnson et al. (2007) suggest a tentative comprehensive definition: “Mixed methods research is an intellectual and practical synthesis based on qualitative and quantitative research; [...]” (Johnson et al. 2007, p.129). Researchers argue, that qualitative and quantitative research are compatible and can be used in conjunction (Teddle & Tashakkori 2011). The primary paradigm for mixed method research is pragmatism (Johnson & Onwuegbuzie 2004; Johnson et al. 2007), with the aim not to restrict the researcher because of dogmatism (Johnson & Onwuegbuzie 2004). While research (Johnson & Onwuegbuzie 2004) highlights the advantages of this combined research method, there are also certain disadvantages. It might for example be more expensive and time consuming than focusing on either pure qualitative or pure quantitative research (Johnson & Onwuegbuzie 2004). Also, it can be difficult for the researcher to mix quantitative and qualitative research methods appropriately (Johnson & Onwuegbuzie 2004). To cope with this challenge, there are publications available on how to combine the methods (Sandelowski 2000) and on how to apply mixed method research in social and behavioral research (Tashakkori & Teddle 2010). For a more detailed evaluation of the strength and weaknesses of mixed method research see research by Johnson and Onwuegbuzie (2004, p.21).

Balancing the pros and cons of qualitative, quantitative and mixed method research surveys, a quantitative approach was chosen for this research study. The prevailing argument for this choice is the easier possibility of an anonymous survey of the potentially delicate questions on fear, the better comparability of quantitative results and the ability to generate a bigger sample to be able to stratify the participants into different groups with significant profiles.

Before the final survey, a pre-study with a limited amount but well-chosen heterogeneous selection of participants was conducted, which included qualitative aspects, for example open questions for other failure reasons. The results of this survey were integrated in the survey questionnaire of the final study. Also the general design of the empirical survey builds on insights from previous qualitative studies published in academic literature (e.g., Welpé et al. 2011b; Brixy et al. 2011; Rotefoss & Kolvereid 2005).

### **6.3 Design of the survey**

The backbone of the empirical part of this study is a quantitative survey of potential entrepreneurs using an online questionnaire. The following section will describe the methodology used to set up this survey.

#### **6.3.1 Design of the questionnaire**

A special focus lays on the design of the questionnaire and the operationalization of the dependent and independent variables. The quality of the questionnaire has been tested in a pre-test first, which lead to an improved final test. The design of questionnaires in social sciences is well-researched (e.g., Saris & Gallhofer 2014; Bradburn et al. 2004; Porst 2011; Moosbrugger & Kelava 2012; De Vaus 2001). There are various research studies about specific topics (e.g., Richman et al. 1999; Klorman et al. 1974; Stöber 1998) and a broad selection of academic lecture notes and handbooks (e.g., Porst 2011; Moosbrugger & Kelava 2012). For the design of the survey in this study, mainly the study books by Porst (2011), Moosbrugger and Kelava (2012) and De Vaus (2001) were used.

The empirical research of fear or similar abstract phenomena might require conceptualization and operationalization of complex constructs (Homburg & Giering 1996). A construct is an abstract fact or situation, which is not directly measureable (Edwards & Bagozzi 2000). In the context of this research study, constructs can be “abstract, unobservable properties or attributes of a social unit or entity.” (Bagozzi & Fornell 1982, p.465). These constructs are often referred to as hypothetical or latent variables, whereas directly measureable variables are referred to as observable variables or manifest variables (Bollen 2002; Homburg & Giering 1996). Latent variables are common in business and social studies (Bollen 2002). In the case of this study, fear is an example of a latent variable since it cannot be directly measured, whereas for example height of a person is a manifest variable, because it is directly

measurable. It is important for empirical research to make constructs empirically seizable and measurable. To measure latent variables, which cannot be directly observed, they need to be derived from other variables which are observable (Bollen 2002; Edwards & Bagozzi 2000). To do so, certain observable indicators have to be surveyed and their relationship to the construct has to be defined to be able to indirectly measure the construct. Often, more than one indicator is required to measure a single construct, to avoid measurement errors (Jacoby 1978; Churchill 1979). Also, the relationship between construct and indicators can be multi-dimensional. While a one-dimensional construct allows direct evaluation through its indicators, a multi-dimensional construct consists of more related dimensions, each of them with own indicators. Each dimension of the construct can therefore be interpreted as a separate one-dimensional construct (Jarvis et al. 2003; Giere et al. 2006).

The practical application consists of two steps: (1) the general construct and the according indicators have to be defined and (2) the construct has to be operationalized, by developing measurement instruments for the indicators (Edwards & Bagozzi 2000; Moosbrugger & Kelava 2012). (1) To conceptualize the construct, a content-wise understanding of the construct and the principal relationships to its indicators has to be developed. Here, the general approaches of intuitive and rational construction are possible (Moosbrugger & Kelava 2012). Intuitive construction is appropriate, when there is not yet so much research in the field of interest available, particularly concerning the theoretical background. Therefore a theory guided approach is hardly possible. Therefore, the design of the construct has to be guided by intuition and experience of researcher (Moosbrugger & Kelava 2012). Rational construction is a method of deduction, building on existing research findings. The prerequisite is that a theory exists, that differentiates persons according to the construct of interest (Moosbrugger & Kelava 2012). In practice, often a mixture of both approaches or an iterative approach is used (Moosbrugger & Kelava 2012). In the case of this research study, to large extents a rational construction is applicable. There is prior research available that provides a guideline about how to measure the construct of fear, for example the State Trait Anxiety Inventory (Hamilton 1959; Buss et al. 1955; Spielberger et al. 1970) or the Taylor Scale of Manifest Anxiety (Taylor 1956; Taylor et al. 2005; Taylor 1999) (for more details see section 6.3.3). When defining the indicators for the construct, their specification has to be evaluated (Edwards & Bagozzi 2000; Bollen & Lennox 1991; Diamantopoulos & Winklhofer 2001; Fornell & Bookstein 1982; Jarvis et al. 2003; Albers & Hildebrandt 2006). That means that it has to be evaluated, "whether constructs should be specified as causes or effects of their measures" (Edwards & Bagozzi 2000, p.155). The first case is referred to as reflective measures (the



construct influences the indicators), the latter as formative measures (the indicators influence the construct) (Edwards & Bagozzi 2000; Bollen & Lennox 1991; Diamantopoulos & Winklhofer 2001; Fornell & Bookstein 1982; Jarvis et al. 2003; Albers & Hildebrandt 2006). (2) To operationalize the construct, the development of measurement instruments is required (Christophersen & Grape 2006; Bagozzi 1994; Homburg & Giering 1996). The applicable indicators have to be identified and tested on reliability and validity (Christophersen & Grape 2006; Bagozzi 1994; Homburg & Giering 1996).

The items to be surveyed in the questionnaire consisted of both, latent and manifest variables. Before detailing the operationalization of the variables, further general design principles of empirical survey questionnaires will be discussed. The contents in the following section largely base upon the textbooks on questionnaire design by Porst (2011) and De Vaus (2001).

#### **6.3.1.1 Usage of scales**

The challenge of quantitative survey in social sciences is often that variables should be measured, which do not have an exact numeric expression. While a question about the age of the participant can be measures numerically, a question about the amount of fear an individual experiences has to be translated into a numeric measure to allow a numeric analysis. This is a challenge because the translation into numeric values should be as accurate as possible and equal for all participants to avoid distortions (Porst 2011; De Vaus 2001; Moosbrugger & Kelava 2012). An established way to solve these issues is the use of Likert scales (Likert 1974; Likert 1932). These scales present a set of pre-coded answers to choose from to the survey participant (Porst 2011; De Vaus 2001; Moosbrugger & Kelava 2012). An example could be a question about the amount of fear the survey participant faces with the answer choices “high”, “medium” and “low”.

The example shows that there are certain interpretations required to use these answers as numeric values for calculation. First of all, the survey participant himself/herself has to interpret which of the terms correspond best to his/her feeling. Different survey participants might interpret the answers to this question differently. Second, the researcher has to interpret, which numbers correspond to the verbal answers. While it is clear, that a medium amount of fear is less than a high amount of fear, it is up to interpretation how high the amount of fear in relation is, for example if it is half as much, two thirds as much, etc. To describe this problem, scales are usually categorized in four dimensions. (1) Nominal scales describe values which

are not directly comparable, for example the sex or the name of a participant. (2) Ordinal scales describe values which can be ranked. In the previous example, “medium” is clearly higher than “low”. (3) Interval scales include equal distances between the different subsequent parameter values, for example a temperature scale in degrees Celsius. The most unambiguous scale is the (4) ratio scale, for which not only the distances between two parameter values are equal, but also the absolute zero point is defined, as in a temperature scale in degrees Kelvin (Porst 2011; De Vaus 2001; Moosbrugger & Kelava 2012; Shachtman 2001). Nominal and ordinal scales are non-metric, interval and ratio scales are metric (Porst 2011; De Vaus 2001; Moosbrugger & Kelava 2012).

Likert scales are typically ordinal. It cannot be necessarily assumed that the survey participants perceive the different answer choices as equidistant, even though this would be favorable, as it would increase the analysis options. However, there are approaches to phrase the answer choices in a way that allows the interpretation as interval scale. There are basically two ways of designing equidistant Likert scales. The first is to show that ordinal scaled variables can be analyzed just like interval scaled variables (Porst 2011; Likert 1932; Likert 1974). There are various studies which investigate which verbalization corresponds to which numeric coding to assure equidistant intervals (Rohrmann 1978). These suggestions for the phrasing of the answer choices can be used practically, however the applicability as interval scale is never perfectly proven. The second approach is to use measure instruments which are already interval scaled. The obvious application of this principle is to use scales which are either numerically or graphically divided in equidistant intervals (Porst 2011; Likert 1932; Likert 1974). An example would be to give the survey participants answer options from 1 to 10 to rate their amount of fear. Even though the interpretation tolerance of the researcher is narrowed, there still remains a certain interpretation leeway of the survey participant, as he/she has to allocate his/her felt amount of fear to the given numbers (Porst 2011; De Vaus 2001; Moosbrugger & Kelava 2012).

When designing the questionnaire and the different items according to the approaches to achieve metric scales, it has to be decided whether all the different grades of the answer should be verbalized or just the end points of the scale. There are advantages of a completely verbal scale. The most important is that it is easier for the survey participant to complete and it leaves less interpretation leeway when filling out the questionnaire. The disadvantages are, as mentioned above, that interval scaling cannot perfectly be proven and that the length of the scale is limited. Scales with more than five answer choices are hardly practical since they are

too complex for the survey participant. The advantages of a scale with only verbalized end points are that it is automatically interval scaled and also a longer scale (e.g., seven grades) is possible. However, the scale leaves certain interpretation leeway in the grades between the extreme points. When using such a scale, it has to be decided, how to mark the grades between the end points. This could be simply by graphical/typographical elements like lines or boxes to distinguish the different grades or by a numeration, for example from 1 to 7. Using numbers between the extreme points on the scale can cause certain distortions depending on the choice of the numeration approach. For example when five grades have to be numbered between the verbalized extreme points, these numbers could be from 0 to 4, from 1 to 5 or from -2 to +2. Even though this does not change anything on the question of the verbalization of the extreme points, these different options could generate different results. It could for example be that participants tend less to tick of negative numbers than positive ones (Porst 2011). To avoid these unpredictable distortions, the grades between the verbalized extreme points have not been numbered in the questionnaire designed for this study, but only represented by unlabeled radio buttons.

A further design choice is the length of the scale and whether it is symmetric or not. An odd scale offers a selection option in the middle which is comfortable for survey participants who cannot really decide which position to take. An even scale on the other hand forces the survey participant to a clear decision between rather the left or the right side of the scale (Porst 2011; De Vaus 2001; Moosbrugger & Kelava 2012). The decision for this questionnaire was, to allow the survey participants the option to be indifferent or indecisive and hence use an odd scale. Some questions in the questionnaire like “How much do you wish to be an entrepreneur” should allow indifferent answers (“I don’t care”) rather than forcing the participant to either love or hate to be an entrepreneurship. According to the length of the scale, generally a 7 step Likert scale was used, as it has enough steps to allow granular differentiation but can still be easily handled by the survey participants.

For questions which present a nominal selection of answer choices, for example a preselected list of potential failure reasons to choose from, the answer choices were randomized for each single questionnaire. Doing so, a bias according to the sorting of the reasons should have been avoided.

### **6.3.2 Survey of the funnel step**

A very important surveyed variable is the step in the Entrepreneurial Funnel, the survey participant is in. The variable serves different purposes. First of all, it is used as a split variable to stratify the analyses by the different funnel steps. Second, it functions as a dependent variable in specific analyses to investigate, for example, if reaching a certain funnel step is connected to specific attributes of the individual. Third, it is also used as an independent variable to understand if certain phenomena are actually caused by specific attributes or solely by the funnel step the participant is in.

The survey participants were asked, which phase according to founding a company they are in. Five answer choices were given, representing the different funnel steps: “Phase 0: I cannot imagine founding a company”, “Phase 1: I can generally imagine founding a company”, “Phase 2: I already have/had one or more ideas for a potential foundation”, “Phase 3: I already evaluated (business plan, etc.) one or more ideas and considered it a good idea”, “Phase 4: I have already founded a company (or am/was self-employed)”. A subsequent question asked how long the survey participant already is in this phase. An open text field to enter the number of years was used here.

### **6.3.3 Survey of fear**

Another central element in the survey is the measure of fear. Since emotions are always subjective, they are difficult to compare between different individuals. Also they are rather abstract, so it might be challenging for the survey participant to rate his/her emotions on a scale. Generally, there are two different approaches to measure these emotions. Either through a direct question, asking for the intensity of the emotions, or through an indirect question, which allows the researcher conclusions about the emotional state of the survey participant. Both approaches are applied in research to measure fear, for example fear of spiders, crime, falling, etc. (Taylor et al. 2005; Tinetti et al. 1990; Szymanski & O’Donohue 1995; Ditton et al. 1998; Klorman et al. 1974; Muris & Merckelbach 1996). The latter approach could be especially helpful, if the surveyed individual is not aware about his/her feelings himself/herself. It could reveal subconscious emotions. However, it depends on the interpretation of the researcher. The first approach to ask a direct question does not leave such a big range of subjective interpretation for the researcher but it requires the survey participant to be aware of his feelings to be able to express them. According to fear, current research

tends to use the approach to directly ask for the amount of fear (Welpel et al. 2012; Welpel et al. 2011b; Watson & Clark 1999).

In this study, both approaches were combined in the pre-test. However, the result showed that asking a direct question is sufficient. Thoughts about an indirect measure for the amount of fear of an individual included questions about how often an individual already postponed his/her founding decision, how comfortable he/she would feel with the thought of being a founder and how many potential failure causes come to his/her mind. The direct question on the amount of fear was positioned in the middle of the questionnaire, so that the survey participant already spent some time thinking about entrepreneurship and how it would feel for himself/herself to be an entrepreneur. Additionally as an introduction to the question, the participant was explicitly asked to imagine the situation to be directly before founding a company. Participants who already founded a company were asked to think back how they felt, when they were directly before founding their company. Putting the participants in the mental state to imagine the specific situation seems to help them to estimate their emotional state (Welpel et al. 2012; Welpel et al. 2011b). To distinguish general fear of founding a company from the evaluation of concrete ideas, the introduction included a comment, to imagine that the participants had a promising business idea. The question asked how high the participant estimates his/her fear to found a company in this situation. The answer choices were given in a 7 step Likert scale from “no fear at all” to “very high fear”. The question on fear of failure asked how high the participants estimate their fear to fail with their company. The answer choices were given on an identical 7 step Likert scale from “no fear at all” to “very high fear”. The formulation of the questions and the terms corresponding to certain feelings were drawn from the PANAS-X manual for the positive and negative affect schedule (Watson & Clark 1999) which gives guidelines (1) which terms measure which emotions, (2) which terms can be used synonymously and (3) which terms can be used to create equidistant scales. The PANAS-X is a helpful manual which is also used in other research works on emotions in entrepreneurship (Welpel et al. 2012; Welpel et al. 2011b).

The estimated probability and impact of a failure were asked in the same section of items. The question on probability asked how high the participant estimates the probability to fail with his/her company – for whatever reason. The answer choices were given on a 7 step Likert scale from “very low” to “very high”. Since this is a subjective estimation which can never be completely accurate, it was refrained from asking the exact percentages of the probability but rather a tendency. The question on the impact of a failure asked the participant to image the

company he/she founded would fail and how bad this would be for him/her. The answers could be selected on a 7 step Likert scale from “not bad at all” to “very bad”.

#### **6.3.4 Survey of anticipated failure causes**

The reasons for entrepreneurial failure can be investigated from an Evolution Theory viewpoint, categorizing the development of a new venture by the phases variation, selection and retention (Campbell 1965; Staber 2002). Failure in this context can either occur in the selection phase, when the market selects a competitor instead of the new venture, or in the retention phase, when the new venture managed to establish a competitive position but is not capable of holding it. In both cases, the variation phase is closely interlinked as a possible root cause, since the new venture was in these cases not able to initially or in adaption to the new situation achieve a successful change towards the market's needs. Here, parallels to Entrepreneurship Theory (e.g., Freiling 2008) can be drawn (Hodgson 1998). Failure in the *selection* of *retention* phase can be interpreted by insufficient execution of *system renewal* and/or *system protection*. Additionally, Entrepreneurship Theory presents approaches to explain venture failure by insufficient *system exploitation* (Freiling 2008). Without exploiting a currently market position in successful times, an organization might not be capable of equipping itself with the resources required to fulfill the renewal or protection functions. Furthermore, especially in the context of start-up companies, insufficient system exploitation, for example through insufficient profits or excessive ramp-up time, can also lead to premature abandonment of the business idea by the entrepreneur. Following the thoughts of Real Options Thinking (McGrath 1999), the founder might turn to another, more promising option. Therefore, a direct connection between the fulfillment of these functions and the competitiveness and hence performance of organizations can be drawn (Freiling 2009a). Freiling (2009a) showed that the identified failure reasons from empirical studies can be attributed to the categories innovation (system renewal), risk management and coordination (system protection), arbitrage (system exploitation) and therefore support the theoretical link to business success or failure. Building on this insight, this study bases the pre-selection of failure causes to be used in the survey on the empirical findings of various previous research studies as well.

In the questionnaire, the participants were confronted with the possibility that their companies might fail, once founded. Then they were asked what the reasons for failure might be, if their

according company should indeed be unsuccessful. This is a question for a hypothetical situation, which generally has to be handled with caution, as previous studies in other contexts revealed that decision behavior of survey participants can differ between hypothetical and real situations (Holt & Laury 2002), however in the context of future ventures, a similar approach has been successfully applied in prior studies (Welpel et al. 2011b). The participants were presented a list of 18 potential failure causes to choose from and a supplementary open text field for other causes. These preselected 18 failure cause choices were carefully selected when designing the questionnaire, since in all surveys, the preselected given choices might influence the answers of the participants (Porst 2011; Moosbrugger & Kelava 2012; Aschemann-Pilshofer & Premeisberger 2001).

As a first source, the potential failure reasons from the literature review were included (especially: Freiling & Estevão 2005; Fallgatter 2005; Hansen 2009; Freiling 2009b; Brüderl et al. 1992). The full list of literature references used to identify these failure sources can be found in Fig. 47 (page 191). These represent the causes that can actually be observed in reality when researching company failures. To get a holistic set of choices, not only literature that deals explicitly with company failure causes was included, but also related literature, like research on success factors or managerial shortfalls of founders. Also reasons that were mentioned in these studies but which could not be proved to have a relation to failure were included. This vast set of potential failure reasons was then processed in various steps. A first content-wise filtering ensured that only potential root causes remained in the list. Answers which obviously represented an effect rather than a cause or a measure for failure were eliminated, for example “financial trouble”, “no profits” or “bankruptcy”. Secondly, the set of answer choices had to be aggregated to remove redundancies and to narrow down the number of choices, according to the constraints of a survey not to overstrain the participants. Here, various answer choices were combined into a set of buckets (c.f. Freiling 2009a), for example all potential causes that had to do with the founder as a private human being like health problems, burn out, overwork, divorce, etc. were combined to the bucket “problems of health or private kind”. The analysis of the literature review revealed a list of the following 16 problems: problems with the founding-/managing-/owner-team (arguments), market/demand development, private reasons/health, accounting/taxation, procurement/business partners, attitude of the founders (risk awareness, perseverance, motivation), foundation-/business planning, legal/regulatory issues, capital endowment/financing, social-/management-competencies of the founders, marketing, planning/organization, competition (imitation...), industry competencies of the founders, subcritical company size/growth and financial



management (costing, investment planning, liquidity planning, etc.) (sources c.f. Fig. 47, page 191).

As a complementary source of potential failure reasons, reasons from expert interviews with founders, investors or entrepreneurship organizations were included. This set of answer choices together with a free text field for other answers was then used in the pre-test survey. To get an exhaustive set of choices, the answers in the free text field were included in the preselected choice of given answers in the final test. In this step two more potential failure reasons to choose from were added to the questionnaire. According to informal conversations with people engaged in the start-up scene, problems with getting enough and the right people (problems with personnel/labor market) seems to be a common pitfall for today's start-ups. This problem is also highlighted in the current non-academic press (Visser 2013; Bertels 2012; Schmeisser 2011; Ortmann 2011; Brixy et al. 2011), as well as in few studies of academic research (Wang & Zang 2005; Thakur 1999). Another potential failure cause category which was added to the survey was problems with disadvantageous political or social developments. This reason was again drawn from informal discussion within the start-up scene and according business reports, e.g., by McKinsey & Company (Suder 2013), as well as from academic research (Sobel et al. 2007; Li et al. 2006; Kelley et al. 2011)

The formulation of the 18 answer choices was then structured and optimized. The wording was unified, for example to make all answers start with "*problems of/with/regarding ...*", to avoid having some answers sound more severe than others. The formulation was also checked for comprehensiveness to avoid misunderstanding or different interpretation by different survey participants and examples were added for clarification. For example, to clarify the difference between the failure reasons "*problems with finance*" and "*problems with capital*", these reasons were detailed further and enhanced with examples to "*problems with financial management (costing, investment planning, liquidity planning, etc.)*" and "*problems regarding capital endowment/financing*".

Finally, the answer choices were randomized in the questionnaire for every individual participant to avoid the order of the answer choices having an influence on the chance of their selection. Any number of the presented choices could be selected using a tick-off box each. An additional open question allowed entering further potential failure causes.

As additional information for the analyses, out of those potential failure causes, two scores were calculated and used as further variables. The first score counts the selected failure



reasons. This score might be interpreted as an estimation of the challenges that lay ahead. Another score only calculates the “real reasons” – the failure reasons that can be observed in reality, based on existing entrepreneurship research literature. For example, if a survey participant selected a total of five anticipated failure causes and three out of those are common in observations on actual company failures, the score of real reasons would be three. This score might function as a measure of the awareness of the actual pitfalls.

### **6.3.5 Survey of attributes**

The Competence-based Theory of the Firm (CbTF) explains organizational performance with the fulfillment of certain competences (Freiling et al. 2006). Especially in entrepreneurial situations, where the borders of the organization and the entrepreneur as an individual can be blurred, the success of the venture can be traced back to the competencies of the entrepreneur. Entrepreneurship Theory can help to account competitiveness and hence success or failure to the person of the entrepreneur (Freiling 2008). In this context, not only the skills and actions of the founder, for example the execution of various business functions, are important (Freiling 2008), but also the his/her psychological traits, motivation and (Bull & Willard 1993).

The influence of certain (learnable) skills can be understood by facilitating Human Capital Theory, according to which investments in education yields higher productivity for individuals as well as for organizations (Werner 2011). Studies show that human capital approaches can explain firm failures (Pennings et al. 1998). The concepts of Human Capital will be used to investigate the connection between entrepreneurial attributes and failure in the different steps of the Entrepreneurial Funnel.

The Affect as Information Theory (Gohm & Clore 2002; Clore et al. 2001) can help to better understand the psychological traits of the entrepreneur and their link to success or failure. Feelings are an important influence factor for decisions and the according actions (Clore & Huntsinger 2009; Clore & Huntsinger 2007; Clore & Palmer 2009). Here, it does not matter, if the stimulus triggering the feeling does actually exist or is only an imagination or perception (Clore & Huntsinger 2009; Clore & Huntsinger 2007; Clore & Palmer 2009). This insight shows that perceived fear of an anticipated failure in the future can influence the decision whether to found a company in the present.

In the following sections, the individual attributes of the participant which were selected to be surveyed will be introduced. First though, a structuring framework will be defined to cluster the various attributes into categories to be used in the later analyses.

#### **6.3.5.1 Selection of a structuring framework for the entrepreneurs' individual attributes**

To discuss the different personal attributes of entrepreneurs, a structuring framework which clusters the attributes into categories is required to get a better understanding and to reduce complexity of the examination. There are different views in research how to explore the characteristics of entrepreneurs (Brüderl et al. 1992). There is an *economic view*, that sees the entrepreneurs as risk-takers, innovators and coordinators (Brüderl et al. 1992). This view is similar to a categorization of entrepreneurs according to entrepreneurial functions (Freiling 2008; Freiling et al. 2010). A second perspective is a *sociological view*. Here, entrepreneurs are categorized by certain socio-demographic attributes, like their sex, age or origin (Collins & Moore 1964; Light 1979). An understanding according to an *empirical view* often emphasizes the entrepreneurs' skills and experiences, for example their work experience, self-employment experience or management skills (Brüderl et al. 1992). It adds the entrepreneur's motivational aspects as important classification attributes (Shane et al. 2003). Shane et al. (2003) highlight, that entrepreneurial research often only focusses on opportunities, etc. but neglects the „role of human agency“ (Shane et al. 2003), so the founder as a human being. Important attributes of entrepreneurs besides cognitive factors like skills, abilities and knowledge are motivational aspects, like the founder's need for achievement, desire for independence, self-efficacy, etc. (Shane et al. 2003; Brüderl et al. 1992; Olson & Bosserman 1984). Therefore „the development of entrepreneurship theory requires consideration of the motivations of people making entrepreneurial decisions“ (Shane et al. 2003). From a *human resources view* point the drivers for performance of an individual can be divided into the components “will”, which in this context represents the motivation for entrepreneurial engagement, and “skill”, which stands for the ability for entrepreneurial engagement (Serrat 2010; Landsberg 2010; Ringlstetter & Kaiser 2008, p.5).

Despite the different views according to the categorization, there is a common understanding of the single attributes which are of special importance. In most cases, they are just categorized in different buckets. Following the above discussion in research, this study will utilize three categories to cluster the attributes of the individual entrepreneurs. The category *economic view (Skill)* follows the Human Capital Theory (Werner 2011) and describes the

attributes about skills, knowledge and economical concepts. The *psychological view (Will)* follows the Affect as Information Theory (Gohm & Clore 2002; Clore et al. 2001) and summarizes attributes about the motivational and psychological side of the entrepreneur. This categorization of individuals according to their skill and will is also in line with the human resource view (c.f., e.g., Ringlstetter & Kaiser 2008, p.5). Both of these components have an intrinsic and an extrinsic dimension. While intrinsic skills refer to the mental capacity (intelligence, social competence, etc.) of a potential entrepreneur, extrinsic skills would refer to his/her education and experience. Analog, the component *will* (motivation) can be driven intrinsically by the mindset of the individual and extrinsically by the environment (the “entrepreneurial spirit”) he/she is in. It has to be mentioned, that this view of intrinsic and extrinsic factors represents a static view, as intrinsic and extrinsic drivers are interlinked (with a stronger link from extrinsic to intrinsic than vice versa). In the example above, the environment is likely to have an influence on the entrepreneur’s mindset and hence, over time influence his/her intrinsic motivation. However, as the concrete decision to found a particular company takes place at a certain point in time, the static view can be applied to cluster individual entrepreneurs. Complementary, a *sociological view (socio-demographics)* will round out the categories and describe attributes of the entrepreneur’s social and demographic background, which are commonly used in related entrepreneurial surveys (Brixy et al. 2011; Kelley et al. 2011; Welp et al. 2011b)

#### **6.3.5.2 Selection of attributes to be surveyed – economic view (skill)**

The attempt to link certain attributes of the individual entrepreneur to the venture performance has a long history in research (Hornaday & Bunker 1970; Hornaday & Aboud 1971; Brockhaus 1980; McClelland 1987). Therefore, existing literature on attributes of entrepreneurs which could lead to success or failure and attributes which distinguish founders from other people served as a basis for the selection of the surveyed attributes. An overview of this literature and the respective attributes will be presented in the following section. Attributes used in the Global Entrepreneurship Monitor (Kelley et al. 2011) functioned as a basic selection, because this survey has been refined annually for almost a decade. The attribute selection was extended with other attributes from relevant literature on fear, failure and entrepreneurship (Brüderl et al. 1992; Becker 1975; Preisendörfer & Voss 1990), to meet the specific purpose of this study.

The attributes of the potential entrepreneurs were surveyed in different item batteries. The first one focused on qualifications and previous experience, following the theoretical concept of general human capital (Becker 1975). There is broad agreement in research that education has a positive influence on the survival chances of a venture (Chandler & Jansen 1992; Brüderl et al. 1992; Cooper et al. 1988; Cooper et al. 1994; Jo & Lee 1996; Hagen et al. 2011; Stuart & Abetti 1990). Most of the research studies agree on the overall importance of education, however, they vary in the question whether the level of education (see e.g., Cooper et al. 1988; Stuart & Abetti 1990) or the years of schooling (see e.g., Brüderl et al. 1992) is more important. In this study, a question asked for the highest educational degree of the participant, following the operationalization based on the Global Entrepreneurship Monitor surveys (Brixy et al. 2011). A pre-selected list of choices was given to choose from. Following, a question asked how well the participant performed in his/her highest degree compared to his/her colleagues or fellow students. The pre-test with a shorter scale showed that most of the participants ranked themselves as at least top 25%. This outcome is not surprising. Many empirical surveys that ask for a comparison with other people show such a distortion. For example, that the vast majority of car drivers consider themselves as more skilled than the average driver (Svenson 1981). To achieve a differentiation between the survey participants, a more granular Likert scale with 21 steps was used. In the online questionnaire it was represented as a slide bar from “worst” to “best” with an additional marker in the middle of the slide bar labeled “average (like most others)”. This scale intended to allow a more granular differentiation, especially in the top categories and to remind the participants that by definition most people are average and hence encourage them to answer towards the middle of the scale. Apart from the extremes and the middle, the slider was not labelled, to avoid overtaxing the participant. As a further proxy for the level of education the amount of languages spoken, including the first language, was asked (Dahlkamp et al. 2010; Morisse 2006; McKinsey & Company & Der Spiegel 2010)..

A second item battery asked for the previous experience. This section included questions for the amount of previous work experience (based on: Brüderl et al. 1992; Cooper et al. 1988; Cooper et al. 1994; Jo & Lee 1996) and previous leadership experience (based on: Chandler & Jansen 1992; Brüderl et al. 1992; Cooper et al. 1988). Both questions were answered by entering the amount of years in a free text field. A further question asked for the total annual gross salary (Brixy et al. 2011) including bonuses etc. in the current occupation or, in the case of a founder, the previous employment. This item functions as a measure for the economically relevant education, so how well the participants were able to convert their qualification into

monetary compensation. The answers could be selected from a list of income categories in steps of 10,000 EUR between 0 to 100,000 EUR. An additional answer choice offered to select “more than 100,000 EUR”.

A third item battery asked for competencies in specific business areas. These attributes aim to measure the capability to fulfill critical entrepreneurial functions (Freiling 2008). Three questions aimed at general competencies according to Human Capital Theory (Becker 1975; Preisdörfer & Voss 1990; Brüderl et al. 1992). A question for the knowledge and experiences in the industry (Brüderl et al. 1992; Cooper et al. 1988; Cooper et al. 1994; Freiling et al. 2010; Jo & Lee 1996) of the planned venture aimed to measure industry specific human capital (Preisdörfer & Voss 1990; Brüderl et al. 1992) and a question for general management experience (Stuart & Abetti 1990; Freiling et al. 2010; Brüderl et al. 1992; Cooper et al. 1988) and social competencies (Markman & Baron 2003; Freiling & Wessels 2010) to measure entrepreneur specific human capital (Preisdörfer & Voss 1990; Brüderl et al. 1992). Six further questions asked for competencies in various business areas, which are, according to literature (especially: Freiling & Estevão 2005; Fallgatter 2005; Hansen 2009; Freiling 2009b; Brüderl et al. 1992), linked to venture success and failure. The full list of literature references used to identify these managerial shortfalls can be found in Fig. 47 (page 191). The items consisted of self-estimations of the own qualification in the areas management/leadership, financing/investment planning/costing, procurement/logistics, social competencies/networking, accounting/taxation/legal issues, planning/organization and marketing. The participants were asked about their estimation of their knowledge, experiences and abilities on a 7 step Likert scale from “very poor” to “very good” for each of the areas above. For the analyses of the final data set an additional score of these seven competencies was calculated, by adding up the answers and dividing the sum by the number of items.

A further question asked how the participant would estimate his/her own qualification as a business founder compared to other founders. This question is based on an according item in the Global Entrepreneurship Monitor (Brixy et al. 2011) and addresses specific human capital (Becker 1975; Preisdörfer & Voss 1990; Brüderl et al. 1992). As this is a question about the comparison of the own abilities to others, an expanded scale was used again to achieve a certain spread of answers. Similar to the question on the education ranking, a 21 step Likert scale with a slide bar was used with the labels “worse than all others” and “better than all others” on the extreme sides and the label “average (like most others)” in the middle. To avoid overtaxing the participant, the slide bar was not labeled with 21 distinct numbers, but only on

the extremes and in the middle. The self-estimations were aggregated equally weighted into a score measuring the self-declared competencies.

#### **6.3.5.3 Selection of attributes to be surveyed – psychological view (will)**

The item battery on *will* consists of three questions. According to literature, entrepreneurial motivation plays an important role for the performance of a venture (Shane et al. 2003; Locke & Baum 2007; Baum 1994; Baum & Locke 2004). The first question asked in a direct way, how much the survey participant wants to become an entrepreneur. This item should measure the intrinsic motivation to become self-employed. The other two questions followed the approach of the Global Entrepreneurship Monitor (Brixy et al. 2011) to ask for the reputation of entrepreneurs as a proxy for the motivation to become a founder oneself. To get more detail, the question was split into two items to differentiate between an intrinsic and an extrinsic component of this reputation. Therefore, one question asked for the estimation of the reputation of entrepreneurs in the social environment (friends, family, colleagues) of the survey participant. This item aims to measure the extrinsic component of motivation that is induced by the environment and the social context the potential entrepreneur is in. The second question targeted the intrinsic estimation of reputation of entrepreneurs and asked how much the participant himself/herself admires other entrepreneurs. This question is mainly aimed at the subjective evaluation of the entrepreneur's intrinsic attitude but assumingly also reflects extrinsic influences, as the own admiration might be influenced by the norms of the social context - especially in the long run. All items on *will* were surveyed on seven step Likert scales.

#### **6.3.5.4 Selection of attributes to be surveyed – socio-demographic view**

Finally an item battery measured a set of *socio-demographic* attributes. In this area, only a limited set of items was used in the survey to keep the questionnaire sufficiently short and also, because there is only a limited set of socio-demographic attributes that is considered important in entrepreneurship literature (Brixy et al. 2011; Manolova et al. 2008). Those basic questions were on the age (to be answered using a free text field with the number of years), sex (choice between male and female) and region of the participants. The question on regions presented a list of German states to choose from with a commentary open text field for others and was then recoded in a binary variable representing Eastern or Western Germany. All three of those question followed respective questions used in the Entrepreneurship Monitor (Brixy

et al. 2011). An additional question was added to ask for self-employed relatives. This attribute of entrepreneurial predisposition is frequently mentioned in entrepreneurship literature to have a potential influence on the attitude of the founder and survival chances of a new venture (Brüderl et al. 1992; Cooper et al. 1994; Stam et al. 2010; Devine 1994).

### **6.3.6 Consideration of social desirability**

Surveys where the participants choose what they answer themselves have a structural disadvantage compared to other empirical investigations, for example neutral observations of behaviors. They always depend on two things: first, that the survey participant is aware himself/herself, what the answer is, that best corresponds to him/her and second, that the survey participant is actually willing to give this answer (Porst 2011; Moosbrugger & Kelava 2012; Aschemann-Pilshofer & Premsberger 2001). The first challenge can be counteracted by avoiding asking for too complex answers that could overstrain the participant. The second could result in potential distortion through socially desirable answers (e.g., Nederhof 1985; Crowne & Marlowe 1960; Fischer & Fick 1993; Fisher 1993; King & Bruner 2000; Ones et al. 1996; Paulhus 1984; Paulhus 1991; Stöber 1999; Stöber 1998; Strahan & Gerbasi 1972). People tend to behave more or less in a way that is compliant to the expectations and norms of their environment and of society. Related to surveys, this could lead to cheated answers and pretending when it comes to questions where the true answer would not conform to the expectations of society. This effect is especially strong for questions to controversial, delicate topics which you would not speak about in public, like sexuality, radical political views, attitude towards foreigners, alcohol consumption, health problems, etc. but also to emotions. According to emotions, social desirability can cause a distortion towards emotional stability (Pauls & Stemmler 2003), which could potentially interfere with honest answers about fear. Since a major focus of this study is the emotion of fear, this could be relevant for this survey as well. The area of socially desirable answer behavior is widely researched in the field of psychology and empirical social research (e.g., Nederhof 1985; Crowne & Marlowe 1960; Fischer & Fick 1993; Fisher 1993; King & Bruner 2000; Ones et al. 1996; Paulhus 1984; Paulhus 1991; Stöber 1999; Stöber 1998; Strahan & Gerbasi 1972). An example for such a distortion of reality caused by social desirability is given in a study by Alexander and Fisher (2003), where they showed that women declared the number of sex partners in an anonymous survey higher, when they thought they were connected to a lie detector. This shows that the



surveyed women tended to the more socially desirable answer to have had few sex partners, even though the survey was completely anonymous (Alexander & Fisher 2003).

### **Coping with the social desirability bias**

There are basically two ways to cope with socially desirable answer behavior in surveys. One is, to design the survey in a way that it is less affected by distortions through social desirability (prevention), the other is to explicitly measure the tendency for each individual participant for socially desirable answers (detection) and include this information in the interpretation of the survey outcomes (Nederhof 1985; Richman et al. 1999; Armitage & Conner 1999; De Vaus 2001). Unfortunately, there is no one single approach capable of completely excluding socially desirable distortions. "A combination of prevention and detection methods offers the best choice available" (Nederhof 1985).

#### **Prevention**

Probably the most important design aspect to prevent getting only socially desirable answers is, to have an explicitly anonymous survey. Then the survey participants do not have to fear negative reactions from the interviewer or other people if they give a non-conform answer. Also the phrasing of the questions plays a role. Generally, very neutral, value-free question phrasings should be chosen, not to provoke socially desirable answers. On the contrary, it could also help to use suggestive questions to present deviating behavior as normal, if some answer options are clearly not socially acceptable. This approach has to be used with care, as suggestive questions can have other distorting effects. Another way would be to use introductions to the questions which support to see deviating answers as normal as well. This could be reference to a broader group of people (e.g., "Many people today think that...") or normalizing statements (e.g., "There are very many different opinions about [...]. What do you think...?"). It can also be helpful not to mention the overall intention of the questionnaire, not to draw particular attention on the critical questions. A special case of social compliant answers is the tendency to answer questions with "yes" instead of "no". To counteract this behavior, some items can be inverted, so that in some cases selecting "no" supports the result as well (Nederhof 1985; Aschemann-Pilshofer & Premeisberger 2001; Porst 2011; De Vaus 2001).

The design of the questionnaire in this survey considered the above approaches. It was surveyed in an anonymous online survey with an explicit note in the introduction,



emphasizing the anonymity. The questionnaire also did not mention that its overall intention is to explore phenomena of fear. Instead a more general introduction was used that just mentioned entrepreneurship as research focus, without going into detail. The section about failure contained an introduction that intended to normalize entrepreneurial failure. Phrasings were used like the following: "Many companies fail. If your company should fail, what could be the reasons for that?" To avoid tendencies towards 'yes'-answers, some items were inverted.

## **Detection**

The basic principle to measure the tendency towards socially desirable answer behavior is to include control questions which are well-researched according to their social desirability (Nederhof 1985; Richman et al. 1999; Armitage & Conner 1999; De Vaus 2001). Analyzing the answers to these questions can then reveal to what extent the participant tends to socially desirable answers. These items can be "lie items", for example statements like "I was never unpunctual". An honest agreement to this statement is extremely unlikely, since practically everybody was unpunctual once before. Survey participants with a high agreement to this statement show an especially high tendency towards socially desirable answers (Nederhof 1985; Richman et al. 1999; Armitage & Conner 1999; De Vaus 2001). Practical problems are, that these items can hardly be included inconspicuously in a questionnaire and that the tendency towards socially desirable answers to these items has to be well-researched (Aschemann-Pilshofer & Premeisberger 2001).

Therefore, researchers developed particular item batteries to measure the extent of socially desirable answering. The probably most famous item battery is the social desirability scale by Crowne and Marlowe (1960), which is referred to as SDS (social desirability scale) or MCS (Marlowe-Crowne-Scale). It also exists in German language in a translation by Lück and Timaeus (1969). This set of questions consists of two parts, one measuring the other-deceptive (impression management IM) and self-deceptive (self-deceptive enhancement SDE) social desirability bias. The latter is according to cheating others to please one's social environment, the first tempts to cheat even oneself, as one is ashamed of the own attitude (Crowne & Marlowe 1960; Nederhof 1985). A problem of the usage of the MCS is that it contains 33 questions, which is far too much to be included in a questionnaire with main focus on another topic.

To cope with this problem, there are various research studies which try to shorten the item battery without compromising too much of its validity (Fischer & Fick 1993). For example, Stöber (1999) developed a 17 item and Winkler et al. (2006) even a 6 item battery. In this study, the 6 item battery by Winkler et al. was used, because of its short form and still high validity. There are also even shorter versions, for example with 4 items, however, they cannot be considered as valid (Winkler et al. 2006). The 6 item short form of the MCS consists of three items according to other-deceptive (impression management IM) and three items according to self-deceptive (self-deceptive enhancement SDE) social desirability. All questions are surveyed on a 7 step Likert scale. To interpret the results, in a first step certain item scales have to be inverted, so that high values always state a high tendency towards socially desirable answering. Only extreme answers (values 6 or 7) are considered to show a significant tendency towards socially desirable answering. To get an overall score of socially desirable answer behavior, the tree SDE and IM answer values are added up. A sum of 18 (of 21 maximum) guarantees extreme answers in most of the questions and therefore serves as a threshold to classify the survey participant as susceptible for socially desirable answer behavior. These participants are accordingly tagged in two dichotomous variables SDE and IM (Winkler et al. 2006; Paulhus 1991; Paulhus 1984). This approach and the according analysis were used in the survey of this study to detect socially desirable answer tendencies.

## **Results**

The analysis of socially desirable answer behavior was compared to the potentially delicate questions on fear in the survey. For example the mean values of the social desirability of the survey participants were compared to their answer behavior according to the questions on fear. However, for the different parameter values of fear (values 1 to 7 on the Likert scale) no significant differences in the means of social desirability could be found. All mean values were around 29 on the sum of the 6 questions with a 7 step Likert scale. A deviation in the mean is not significant (significance level of 0.392 in F-Test with factor overall fear and dependent variable social desirability).

Overall fear	Social desirability		
	Mean	N	STD
1	32.294	17	7.287
2	29.306	62	5.293
3	29.364	44	5.599
4	29.022	46	5.532
5	29.031	65	4.805
6	28.881	59	4.941
7	30.125	16	5.830

**Fig. 33:** Mean values of social desirability for different levels of overall fear

Correlation analyses showed a very weak, but yet significant negative relationship between social desirability and the amount of stated fear (correlation coefficient -0.118 with significance level of 0.038), indicating that survey participants with higher tendency towards socially desirable answering could have indeed stated less fear. An interpretation of this finding could be that confessing to be fearful might not be considered a socially desirable answer. However a subsequent regression analysis did not show a significant causality (regression coefficient 0.360, significance level 0.470). The above analyses show that, as supposed, the questions about fear are not perceived so delicate by the survey participants, that they would not be answered honestly and that the prevention measures, for example the anonymous survey method, were effective.

### 6.3.7 Consideration of general anxiety

There are different approaches in research to measure the fear of individuals. One approach is to use standardized questionnaires with established item batteries (Hoyer 2003). This approach was used additionally to the direct questions described above for two reasons. (1) A second, redundant approach of measuring fear should be used to improve the overall results. (2) Additionally to the fear of founding a company, the general sensitivity to fear of an individual should be measured. It could be that there are individuals who are in general more fearful and hence they are also afraid of founding a company. An item battery on general fear should measure this personal disposition.

There are various questionnaires aiming to measure fear, mostly coming from clinical psychology. Hoyer (2003) gives a good overview of 12 different questionnaires and rating scales to measure social phobia and anxieties. For this survey, the IAF (Interaktions-Angst Fragebogen) (Becker 1997) and the STAI (State-Trait Anxiety Inventory) (Spielberger et al.

1970) came into consideration. The IAF was not selected because consisting of 55 items in 10 categories, it is rather complex. Also it is primarily designed for German language and hence limited for the use in international surveys.

The STAI is a general questionnaire on anxiety with limited complexity and is available in the English original (Spielberger et al. 1970) as well as in established German translations (Laux 1981). Should this survey be expanded to the Anglo-American language area, this would prove helpful. The STAI is applicable in any diagnostic or research situation, where fear is relevant (Laux 1981; Laux et al. 1981). It aims to measure anxiety as a *trait* which refers to the general personal disposition to fear and as a *state* which refers to concrete fear in the current situation. Both aspects are surveyed with an item battery of 20 items each, with answer choices on a pre-defined 4 step Likert scale with a given approach (in a manual) how to apply the item batteries and how to analyze the results. The STAI is very well-researched and robust against the influences of social desirability and intelligence of the participants (Seifert 2002; Laux et al. 1981; Lück & Timaeus 1969; Crowne & Marlowe 1960).

A disadvantage of the STAI is that it is quite long. This makes it challenging to use it solely as a subsection in a questionnaire with many further questions. To overcome this challenge, various researchers tried to develop a short form of the inventory. For example, Englert et al. (2011) developed a version with only 5 items, Perpiñá-Galvañ et al. (2011) a version with 6 items and Marteau and Bekker (2011) a version with 6 items. The latter one was used in this survey, as it has similar explanation power as the full version.

## **Results**

Overall the usage of the standardized inventory to measure general anxiety has not proved very helpful in this specific situation. There is a significant correlation to the direct question on fear of failure, which is an indication that both questions could have measured the same effect, in this case the amount of fear. However, it could not be explained how relevant the influence of the general anxiety as a personal disposition of an individual is. Since the survey consisted only of one single questionnaire, it is hardly possible to differentiate between the general anxiety and the specific amount of fear in this situation. Since the survey participant is already in the state of mind of imagining founding a company, it seems difficult to have him/her ignore this setting for a moment and describe his/her general feelings. Therefore the application of the general anxiety inventory is limited in such a situation.

### 6.3.8 Further concepts not included in this survey

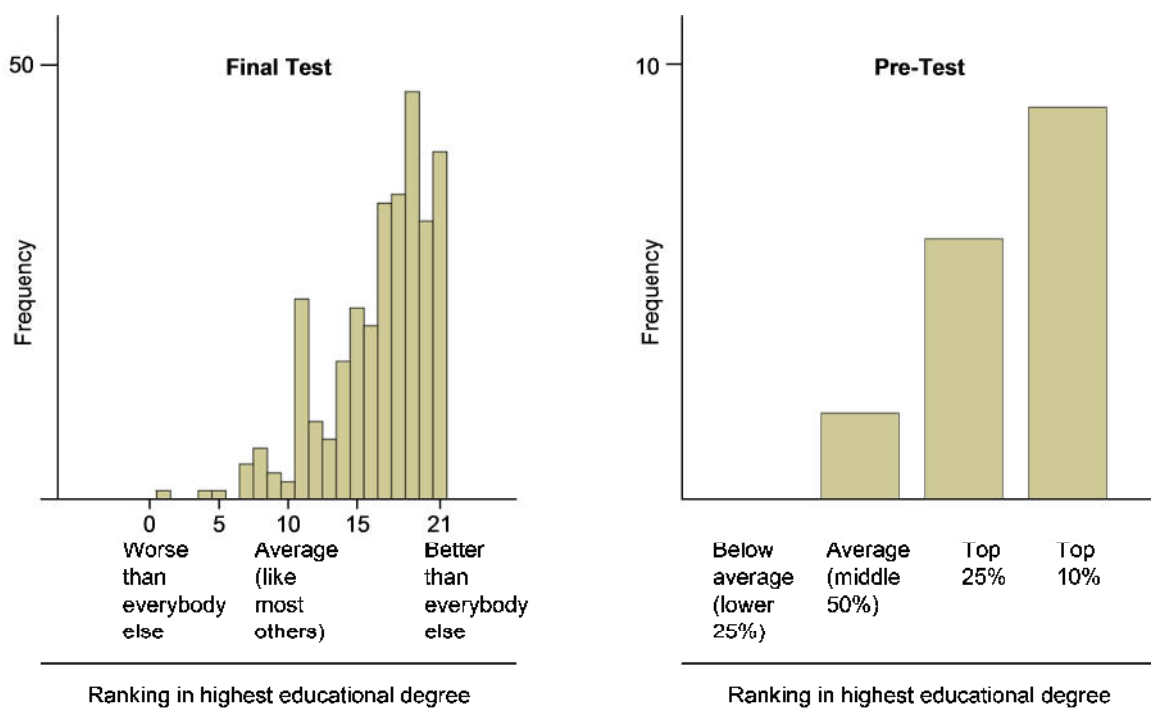
There are many interesting and potentially valuable aspects which could be included in such a survey. However, the amount of items in a survey is limited and afflicted with trade-offs. For example, the more questions are in a survey, the fewer participants will be willing to answer the questionnaire and the sloppier some of them will answer. This section will present some aspects which could have been, but were not included in this survey even though they could have potentially been interesting.

The *cognitive orientation* of a founder is an attribute which would have been interesting, for example. The reasons why an individual decides to found a company could help to understand the phenomenon of entrepreneurial activity in general and fear of foundation in particular. Various research studies consider this area (Carter et al. 2003; GfK et al. 2012; Caliendo & Kritikos 2010; Brixy et al. 2011; Manolova et al. 2008). Another aspect would be to investigate the *personal efficacy* score of the survey participants. This is an indicator to what extent an individual believes he/she can shape his/her environment and influence his/her fate. There are indications that this aspect is a relevant driver for entrepreneurial activity and potentially for fear as well (Markman et al. 2002). The *entrepreneurial orientation* of the survey participants could have been interesting as well. This dimension refers to personal attributes, for example innovativeness, risk-taking, pro-activeness, competitive aggressiveness or autonomy (Schillo 2011; Quince & Whittaker 2003). There are various studies investigating these attributes and their link to entrepreneurial activity and performance (Lee & Peterson 2000; Lumpkin & Dess 1996; Quince & Whittaker 2003; Rauch et al. 2009; Schillo 2011; Wiklund & Shepherd 2005). A closer look at the *risk preference* of the survey participants is another aspect which could have been helpful but did not make it into the survey. Since entrepreneurship is without a doubt a risk situation, the attitude of the founder towards risk is most likely a relevant aspect. Many research studies focus on entrepreneurship and the role of risk preference (Iyigun & Owen 1998; Huang 1973; Cramer et al. 2002). Also, surveying more personal attributes of the entrepreneur, for example his/her family situation or personal wealth could have been interesting.

## 6.4 Results of the pre-test and adaptation of the final test

Before the final survey a pre-test was conducted to test the empirical concept, especially the quality of the questionnaire. The pre-test was conducted in April-May 2013. 25 participants started to fill out the questionnaire, 17 of them completed it. The participants were sourced from private contacts and aimed to have representatives from every funnel step in the pre-test. After the analysis of the results of the pre-test, the questionnaire for the final test was modified based on the generated insights and the feedback of the survey participants.

The scales for the self-estimations of the rankings for the highest educational degree and the general qualification as an entrepreneur were adapted. The original scale in the pre-test showed a very small spread, as most of the participants ranked themselves as top 10% (maximum of the scale) compared with their peers. A more granular scale with 21 steps was therefore used in the final survey. Additionally, the labels of the scale were changed. The middle area was changed from “Average (middle 50%)” to “Average (like most others)” to emphasize that by definition most people are average. Doing so, a better differentiation could be achieved, even though the vast majority of participants still considered themselves as clearly above average.



**Fig. 34:** Self-categorization of ranking in highest educational degree compared to peers: pre-test vs. final test

Due to further literature research and feedback from the pre-test participants, additional questions according to the number of years of the participants' leadership experience, the self-estimation of the participants' industry specific knowledge compared to others and a question whether the participants have self-employed relatives were included.

Since a high share of participants who started the questionnaire has not completed it and because further questions were added, the final questionnaire had to be shortened. While the pre-test included the full State Trait Anxiety Inventory (STAI) item battery (Spielberger et al. 1970; Laux 1981), a shortened version as described above (Marteau & Bekker 2011) was used in the final test. Also the question if the participant is still in education or has started working already was dropped, since this information can be derived by the question on work experience as well. For the same reason, the item on self-employment experience was left out and the relevant information was instead drawn from the funnel step and the funnel step duration.

Further technical changes included a randomization of items, for example the self-estimation of the skills in various business functions/competencies and the potential failure reasons.

## **6.5 Description of final survey**

The following section will describe how the survey was conducted in terms of participant selection and what the received sample is structured like. The final test was conducted in June-July 2013.

### **6.5.1 Selection of survey participants**

The survey aimed at investigating the fear of potential founders in the steps of the Entrepreneurial Funnel. Nascent entrepreneurs who are about to found a company and young founders are in special focus. Furthermore a core hypothesis of the study is about the qualification level of the potential entrepreneurs. According to this aspect, it should also be investigated whether there are special characteristics about highly qualified entrepreneurs.

These requirements determined the study design and the selection of participants. Since only about 3% of the total population plan to and only about 1.5% are actually founding a company

per year (Ullrich 2013), the survey either has to have an excessive sample size or has to target certain groups with a higher concentration of founders. Therefore the survey participants were recruited using certain hubs of entrepreneurial activity. These hubs can for example be found in the business context, such as venture capitalists, in academics, such as entrepreneurship centers of universities, or in startup networks, where entrepreneurs meet. The hubs contacted for this survey included the following:

- Startup incubators, accelerators and venture capitalists (e.g., Project A, Venture Stars, Evobis, etc.)
- Founders of existing startups (e.g., Netzathleten Media, Sushi.Wrap, Favor.it, etc.)
- Entrepreneurship interest groups of the big German academic scholarship foundations (e.g., Studienstiftung des deutschen Volkes, Stiftung der Wirtschaft, etc.)
- Entrepreneurship centers of universities (e.g., Entrepreneurship Centers of the LMU Munich, TU Munich, University of Jena, Bremen, University of Applied Sciences Landshut, Munich, etc.)
- Startup networks and events (entrepreneurship groups of the alumni associations of the scholarship foundations, SUN, enable2start, Startup Weekend Munich, Gründermagnet, gruenderzuschuss.de, Startup press like Gründerszene, etc.)
- Entrepreneurship groups in social networks (e.g., XING, Facebook, etc.)

Furthermore private contacts to the startup scene were used and asked to spread the survey questionnaire in their startup networks.

This study also aims to investigate the behavior and attributes above-average skilled potential entrepreneurs – who are by definition very few. Again, tapping certain hubs of highly qualified individuals can increase the sample size of this group of participants in the survey. These hubs contacted for this survey included the following:

- The big German academic scholarship foundations (e.g., Studienstiftung des deutschen Volkes, Stiftung der Wirtschaft, etc.)
- Top Management Consultancies, Investment Banks, Private Equity Companies (e.g., McKinsey & Company, etc.)
- Germans scholars in top American universities (e.g., Harvard, Princeton, etc.)



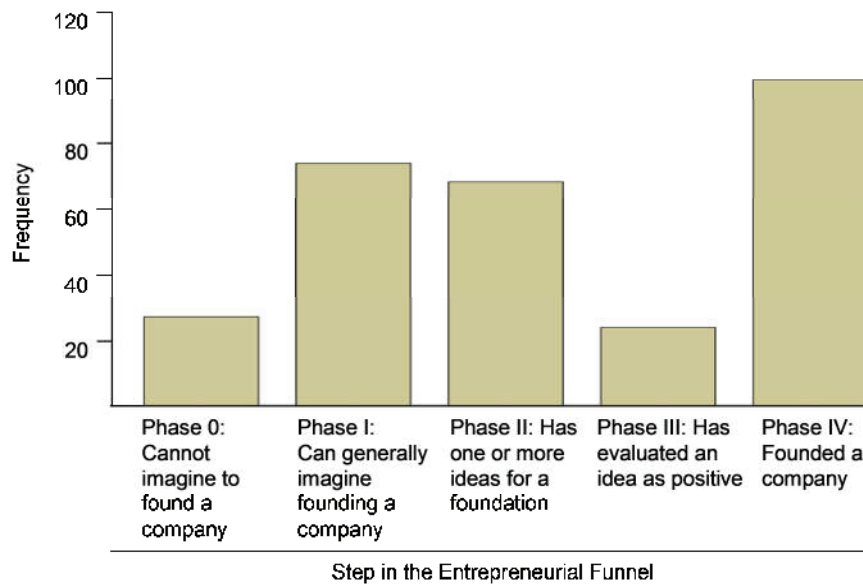
Additionally, to get a more balanced sample, students of the universities of the ten biggest German cities were contacted.

Various channels were used to contact the survey participants in the different hubs, depending on their availability. If possible, email distribution lists were used, or messages were posted on news boards, either directly or through contacting the administrator. Also viral redistribution was encouraged, asking individuals to spread the online survey link to others in their network.

The described sample selection method using entrepreneurship hubs has the advantage of achieving a sufficient number of potential entrepreneurs and highly skilled individuals. However, it has the downside of a distorted overall sample which is not representative for the total population. This disadvantage was accepted as a limitation in the study design because it does not aim to draw conclusions about the general population but especially of the group of nascent entrepreneurs and founders. Nevertheless, it has to be kept in mind when analyzing the survey data, that the overall sample is not a representative excerpt of the total population.

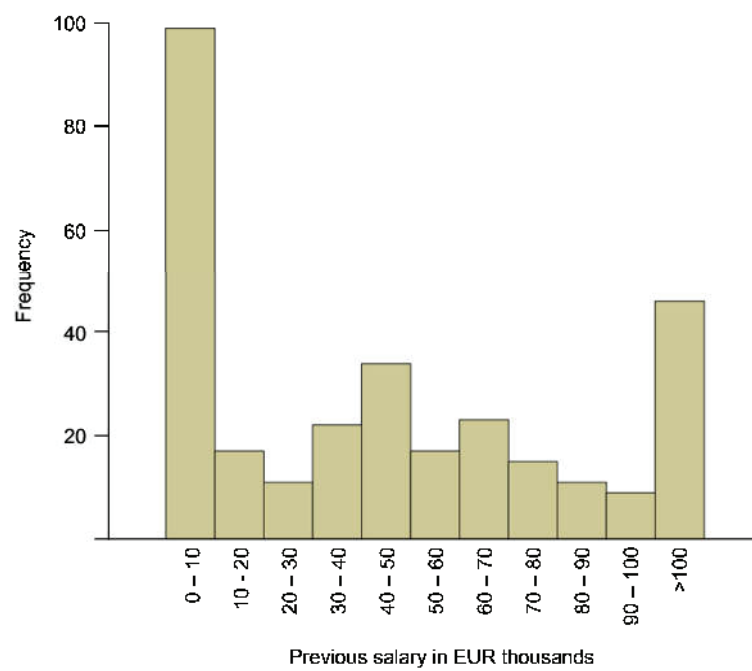
### **6.5.2 Description of sample**

A total of 572 participants took part in the survey, of which 373 finished the questionnaire and 304 completed all questions. 72% of the participants are male, 28% female. The mean value of the age is 30.01 with a standard deviation of 7.98 years. The majority of the age distribution reaches from 20 to 40. The survey participants are in different steps in the Entrepreneurial Funnel. The selection of the survey participants achieved to recruit a sufficient number of individuals who already founded a company as well as potential entrepreneurs who can generally imagine founding a company or who even have a concrete business idea already. The distribution of the survey participants in the sample is illustrated below.



**Fig. 35:** Distribution of the survey participants across the Entrepreneurial Funnel

The participants have a mean work experience of 5.97 years with a standard deviation of 7.51 years. 11.2% of the participants have no work experience at all. This group probably represents the students included in the survey. The previous gross salary (including bonus, etc.) of the participants before their self-employed occupation (or on the case of potential entrepreneurs their current salary) is around 45 thousand EUR per year (value 4.94 on the 11 step scale in steps of 10 thousand EUR) with a standard deviation of 35 thousand EUR (3.68 on the scale). The high standard deviation can be explained by the histogram of the salaries. While there is a distribution similar to a normal distribution with the peak around the salary 40 – 50 thousand EUR, there are strong peaks at each end of the scale. This indicates that a high share of the survey group had no income before the self-employed occupation. A part of these participants are the potential entrepreneurs who are still in their education. However, the share of participants with no previous income is bigger than the share of students in the sample. Many founders probably started their self-employment directly out of university. Therefore the other participants must include the founders who already run a business and had no previous paid employment. The analysis of the salary distribution for each single funnel step confirms this assumption. The peak towards the end of the scale can be explained by the achievement to recruit highly qualified participants for the survey, who work(ed) in a well-paid employment position.



**Fig. 36:** Distribution of previous salary of survey participants

## 6.6 Overview of the operationalization of the relevant variables

The following figure shows the operationalization of the relevant variables in the survey by presenting the variable name, a brief description and the used scale.

Variable	Description	Scale
<b>Entrepreneurial Funnel</b>		
Funnelstep	Step in the entrepreneurial funnel	Choice between funnel steps 0 ("I cannot imagine founding a company") - 4 ("I already founded a company/am self-employed")
Funnelstep_time	Time already spent in this funnelstep	Open text field for number of years
<b>Fear</b>		
Anxiety_estimate	Fear of founding a company	7 step Likert scale: 1 "no fear at all" - 7 "very high fear"
Anxiety_fearfailure	Fear of failure	7 step Likert scale: 1 "no fear at all" - 7 "very high fear"
Fail_probability_estimate	Estimation of probability of failure	7 step Likert scale: 1 "very low" - 7 "very high"
Fail_valuation_estimate	Estimation of valuation/ impact of failure	7 step Likert scale: 1 "not bad at all" - 7 "very bad"
<b>Attributes - Economical view (Skill)</b>		
Education	Highest level/ degree of education	Choice of 11 levels of education: None - Ph.D.
Education_ranking	Ranking in highest level of education compared to peers	21 step Likert scale: 1 "worst" - 11 "average (like most)" - 21 "best"
Languages	Number of languages spoken	Open text field for number of languages
Work_experience	Years of work experience	Open text field for number of years
Leadership_Experience	Years of leadership experience	Open text field for number of years
Salary	Previous salary before foundation	11 choices: 0-10,000 EUR - 90,000-100,000 EUR and "above 100,000 EUR"
Qualification_ranking	Estimation of qualification as founder compared to other founders	21 step Likert scale: 1 "worse than everybody else" - 11 "average (like most)" - 21 "better than everybody else"
Score_competencies	Score calculated from the variables below	
Competency_management	Estimation of own competencies in this area	7 step Likert scale: 1 "very poor" - 7 "very good"
Competency_industry		
Competency_finance		
Competency_social		
Competency_organization		
Competency_marketing		
Competency_accounting		
Competency_procurement		
<b>Attributes - Psychological view (Will)</b>		
Will_wannabe	Wish to become an entrepreneur	7 step Likert scale: 1 "not at all" - 7 "very much"
Will_admire	Admiration for other entrepreneurs	7 step Likert scale: 1 "no admiration" - 7 "high admiration"
Will_reputation	Estimation of reputation of entrepreneurs in social environment	7 step Likert scale: 1 "not reputable at all" - 7 "very reputable"
<b>Attributes - Sociological view (socio-demographics)</b>		
Age	Age of the participant	Open text field for number of years
Sex	Sex of the participant	Choice between "male" (1) and "female" (2)
State	State in Germany	Choices of 16 states and open text field for "other country"
State_east_west	Re-coded variable based on "State"	Western Germany: 0, Eastern Germany: 1
Relatives_selfemployed	Existence of self-employed relatives	Choice between "no" (1) and "yes" (2)
<b>Failure reasons</b>		
Failure_reason_accounting	Reasons which would most likely be responsible if the founded company should fail	Tick-off boxes: box not ticked (0) - box ticked (1)
Failure_reason_attitude		
Failure_reason_business_plan		
Failure_reason_capital		
Failure_reason_competition		
Failure_reason_expertise		
Failure_reason_finance		
Failure_reason_legal		
Failure_reason_management_skills		
Failure_reason_market_demand		
Failure_reason_marketing		
Failure_reason_organization		
Failure_reason_others		
Failure_reason_personnel		
Failure_reason_private		
Failure_reason_procurement		
Failure_reason_size_and_growth		
Failure_reason_social_political		
Failure_reason_team		
Failure_reasons_open_question	Further reasons which would most likely be responsible if the founded company should fail	Open text box
<b>Others</b>		
Social Desirability	Established item battery on social desirability	
General Anxiety	Established item battery on general anxiety	

Fig. 37: Operationalization of the relevant variables

## **6.7 Empirical methodology**

To validate the hypotheses of this study, statistical analyses of the empirical data from the survey were conducted. All analyses were performed using the statistics software IBM SPSS Statistics 21. The use of the software and the according statistical methods were guided by the SPSS textbooks by Brosius (2004) and Bühl (2006) and the statistics textbook by Bamberg and Baur (2001).

First of all, simple frequency analyses and histogram illustrations were used to quantify different subgroups and to visualize them, for example for the section on the sample description. To analyze the expected failure causes, the simple frequencies of the mentions of the respective failure causes were counted. To do so, the corresponding histogram display functions of SPSS were used (Brosius 2004; Bühl 2006).

To measure the overall value of a variable, for example the overall amount of fear, their mean and median values (Bamberg & Baur 2001) were calculated, using the corresponding SPSS functions (Brosius 2004; Bühl 2006). To compare the values of a variable between different groups, for example participants in different funnel steps, the data set was first stratified and then the mean and median values were calculated separately for the different groups. An evaluation of the standard deviation provided insights about the distribution of the values aggregated in the mean values. A higher standard deviation shows greater cumulated distances from the mean value (Bamberg & Baur 2001). When two groups should be compared to analyze whether the mean of a variable is significantly different, T-Tests could be used (Brosius 2004; Bühl 2006). Here, it has to be differentiated between T-Tests with one sample and independent samples. To compare a variable, for example the total amount of fear, between two groups, for example one with rather high and one with rather low socially desirable answer behavior, the T-Test with independent samples could be used. To analyze the significance of a deviation of two variables, for example the amount of fear of foundation and the amount of fear of failure, within the same group, for example the overall sample, the T-Test with one sample could be used (Brosius 2004; Bühl 2006). For more than two groups, F-Tests can be used in a similar way (Brosius 2004; Bühl 2006).

To reveal relationships between variables, correlation analyses using Pearson's correlation coefficient were used (Bamberg & Baur 2001). The correlation coefficient measures the connection between two variables according to direction and intensity of the connection. The

calculation method is limited to identifying linear connections. The direction is expressed by the algebraic sign (“-“ indicates a negative linear connection, “+” a positive linear connection) and the value between an absolute value of 0-1 indicates the strength of the connection (0 indicates that no linear connection could be measured, 1 that a very strong linear connection could be measured) (Brosius 2004). Pearson’s correlation coefficient is calculated by the following formula (Bühl 2006, p.343):

$$r = \frac{\sum_{i=1}^n (x_i - \bar{x})(y_i - \bar{y})}{(n - 1)s_x s_y}$$

The calculations of the correlation coefficients and the corresponding significances were performed using SPSS (Brosius 2004; Bühl 2006). It has to be kept in mind that a connection between two variables which has been discovered does not mean there has to be a causal relationship between the two variables. It could for example be that both variables are causally independent of each other and the result of a third variable (Brosius 2004). Correlation analyses were used to measure the connection between different variables, for example the personal attributes of an entrepreneur and the amount of fear he/she experiences.

To identify causal relationships between variables in a statistical model, regression analyses could be used. While the correlation analysis can identify the direction and strength of a connection, the regression analysis can identify the type of connection and determine the value of a dependent variable from the values of one or more independent variables (Bühl 2006). The linear regression analysis again measures linear relationships between variables. The connection between the variables follows a straight line, the regression line, described by the following formula (Bühl 2006, p.354):

$$y = b x + a$$

The value b in the above formula is referred to as the regression coefficient, the value a as the disturbance term. The linear connections allows to determine, how many units one variable increases, if the other variable increases a certain amount (Bühl 2006). To measure the causal relationship between variables, linear regression analyses have been applied, for example to measure the causal relationship between personal attributes of the entrepreneur and the amount of fear he/she experiences.

Furthermore, the statistical method of binary logistic regression analysis was applied. This statistical method goes back to Nobel Prize winners Daniel McFadden and James Heckmann. The application in SPSS of the method in this study again based on the statistics textbooks by Brosius (2004) and Bühl (2006) and an application in entrepreneurship research by Rotefoss and Kolvereid (2005). The detailed description of the binary logistic regression and a delimitation from the multinomial logistic regression (Bühl 2006; Brosius 2004) as an alternative approach will be described with the concrete application example in section 7.3.3.3, page 248).

To be able to analyze the attributes of entrepreneurs with high fear and low fear, the survey participants were clustered using a discriminant analysis (Brosius 2004; Bühl 2006). The analysis allows clustering items based on a given binary group variable (Brosius 2004; Bühl 2006). The corresponding group variable was generated by recoding a variable with a given threshold into a binary dummy variable. The discriminant analysis was used in two steps. First, by grouping the survey participants according to their fear into two groups, the attributes with significantly differing values between the groups were identified. Then these attributes were used to forecast the amount of fear for each individual. This forecast was then compared to the actual survey data to determine the forecast accuracy based on the selected variables. A more detailed description of the approach will be described with the actual calculation example in section 7.3.2.4 (page 236).

## 7. Empirical findings

The following chapter will present the empirical findings of the study. It will be structured into three main sections. The first section will present the findings about the amount and composition of fear (“How much do they fear?”), the second section will investigate the causes for fear (“What do they fear?”) and the third section will present the findings about the connection of personal attributes of entrepreneurs with their success or failure chances along the steps of the entrepreneurial funnel (“Who fears? Who founds? Who is successful?”).

### 7.1 Empirical findings about the amount of fear of potential entrepreneurs (“How much do they fear?”)

This section will present the findings of the empirical part of the study according to the amount of fear of founding a company, the fear of failure and the connection of both. First, it will give an overview of the approach that was used and the hypotheses which were tested. Then it will explain the applied methodology. Finally, it will present the results of the analyses and the validation of the hypotheses. The section will conclude with a summary and an interpretation of the results.

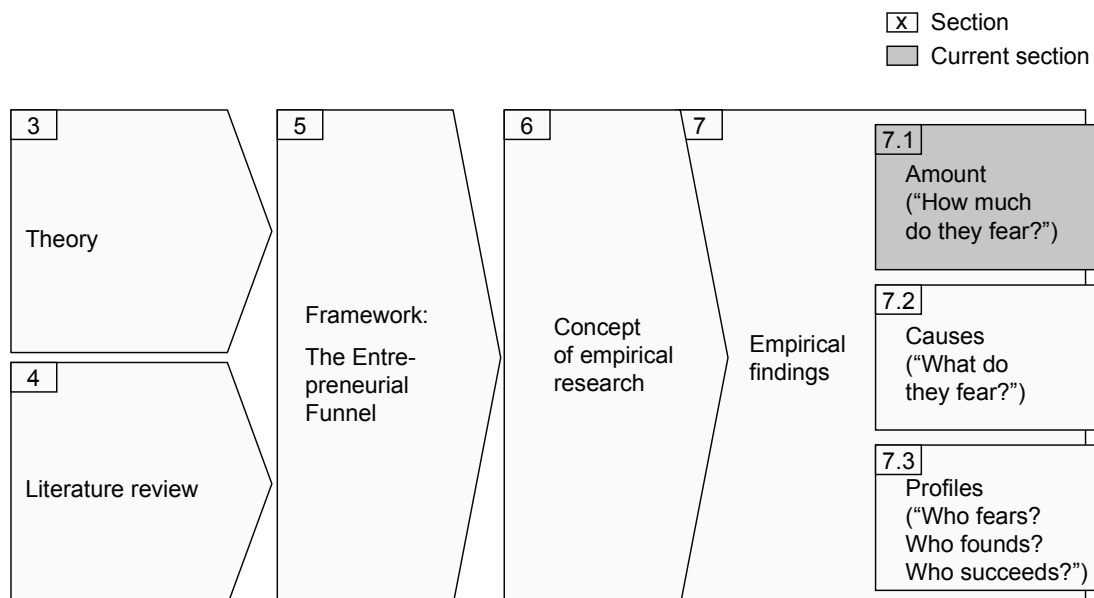


Fig. 38: Structure of this research study with highlighted current section



### 7.1.1 Overview of approach

These analyses and tests will be structured in separate sections following the structure of the hypotheses. This section will focus on hypotheses set 1 and will analyze the potential entrepreneurs' amount of fear to found a company and the composition of this fear. The theoretical background of the investigation will be Prospect Theory (Kahneman & Tversky 1979), which can provide insights about the composition of the expected value of future events based on subjective perception (Kahneman & Tversky 1979; Tversky & Kahneman 1992). Furthermore the concepts of concepts of *anxiety in the face of risk* (Eisenbach & Schmalz 2013) and *cold feet* (Epstein & Kopylov 2007) can help to explain how these subjective estimations develop over time towards decision.

#### **Hypotheses to be tested according to the amount and composition of fear to found a company**

##### Hypothesis 1a:

Fear of failure is the dominant driver of fear of foundation for potential entrepreneurs.

##### Hypothesis 1b:

Fear of failure is mainly driven by the components *perceived probability of failure (belief)* and *perceived valuation of failure (preference)*, where probability stands for the odds of failure and valuation for the perceived impact of the failure on the future of the entrepreneur.

##### Hypothesis 1c:

Out of the main two components of fear of failure, the *perceived valuation of failure (preference)* has a higher impact on the overall fear of failure than the *perceived probability of failure (belief)*.

##### Hypothesis 1d:

The dominant component of fear of failure (i.e. the component *perceived probability of failure (belief)* or *perceived valuation of failure (preference)*, which has the higher impact on overall fear of failure) differs between entrepreneurs in the different steps in the Entrepreneurial Funnel.

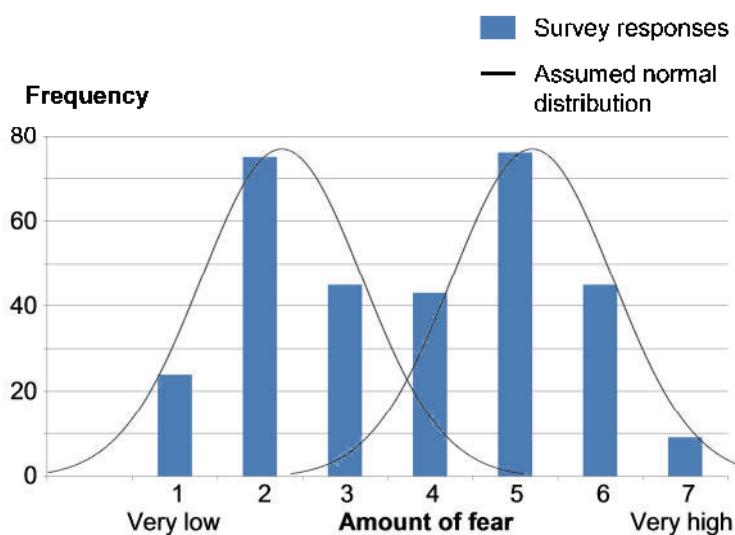
### 7.1.2 Empirical findings about fear of failure

This section will investigate the overall amount of fear of foundation that potential entrepreneurs face. Following, the drivers of this fear and its components will be analyzed.

#### 7.1.2.1 The amount of fear of potential founders

The study surveyed the overall amount of fear to found a company on a Likert scale with values from 1 to 7. The average estimated fear that the survey participants face is 3.75, which is relatively close to the expected mean of a random choice, which would be 4.00. However, there is a quite large standard deviation of 1.68. That indicates, that the distribution is not random but there seem to be big differences between individuals.

When taking a look at a histogram of the amount of fear, two peaks can be observed. One is at a value of 2, which represents a very low amount of fear; the second is at a value of 5, which shows a relatively high amount of fear. Both peaks are almost equally strong. This explains the mean value around the middle of the scale. It seems there are two distributions of overall fear represented in the survey. It is assumed, that there is one group of entrepreneurs with a certain distribution around low fear and another with a distribution around high fear, respectively.



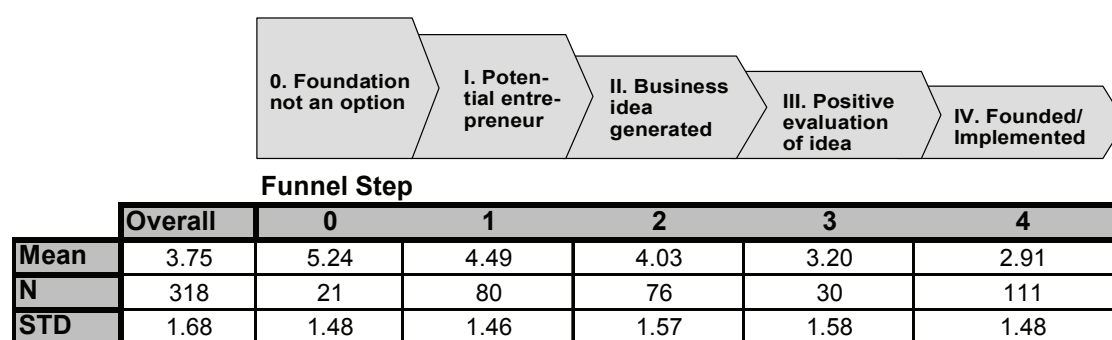
**Fig. 39:** Histogram of the distribution of fear with an illustration of two assumed mean distributions for a group with low fear and one with high fear

When taking a look at the overall amount of fear across the different steps in the Entrepreneurial Funnel, it can be observed that the mean value of fear decreases along the process of nascent entrepreneurship. While survey participants who cannot even imagine founding a company face very high fear of doing so with a mean value of 5.23, it decreases for potential entrepreneurs. This circumstance could be interpreted as causality in two ways. Either they are highly afraid of taking the risk to found a company and hence cannot imagine doing so, or vice versa, since they cannot imagine founding a company, they would face high fear if they were to do so.

The prospective founders who could imagine starting a company in general, face an overall fear of 4.49. Once they already have a business idea, the fear drops down to 4.03 and when the idea is positively evaluated, it even drops to 3.20, which is even below the middle of the fear-scale. Again, this incident could be interpreted in two ways. On the one hand, it could be a selection bias. If only the potential entrepreneurs who experience a lower amount of fear move on to the next funnel step, the amount of fear would decrease along the funnel. On the other hand, it could well be, that the perceived fear of each individual entrepreneur decreases, as he/she moves through the funnel. Reasons for that could be manifold: He/she could discover that starting a business is actually not as scary, as one would think, while he/she gets more and more acquainted with the matter or he/she could start developing routine. Also, he/she could increasingly dive into the startup community and hence experience role models and supporters among the founders. Another reason could be that the uncertainty decreases bit by bit along the process of nascent entrepreneurship with lower uncertainty inducing lower fear. It could also simply be that the potential founder just gets more and more used to the situation of being an entrepreneur and accepts this situation as a new normal and hence gets less and less afraid over time.

In the next funnel steps, not surprisingly it can be seen that survey participants who already have founded a company stated that they did not face a lot of fear when looking back of doing so. This could be interpreted in two ways. Either the would-be founders who had the lowest fear actually did found companies, while others failed (selection bias), or the perception of the fear they faced when looking back at the time of formation, changed over time (hindsight bias). This could show a distortion of their memory with a tendency to remember the positive aspects with higher weight.

The standard deviations of the amount of fear remains relatively constant with a range of 1.48 – 1.58 across the survey participants in the different funnel steps. That indicates, that there is still a spread in the different funnel steps and that the spread in the overall view does not merely result from the difference in fear in the funnel steps. An examination of the histograms of the single funnel steps supports this indication. The following illustration gives an overview of the overall amount of fear for the total survey group and the subgroups in the different funnel steps. The following figure shows the mean values, number of respondents and standard deviation for the overall amount of fear for the total survey group and the participants in the different funnel steps.



**Fig. 40:** Overall amount of fear for the total survey group and the participants in the different funnel steps

### 7.1.2.2 Fear of failure as predominant driver of overall fear

This section will focus on investigation of the following hypothesis:

#### Hypothesis 1a:

Fear of failure is the dominant driver of fear of foundation for potential entrepreneurs.

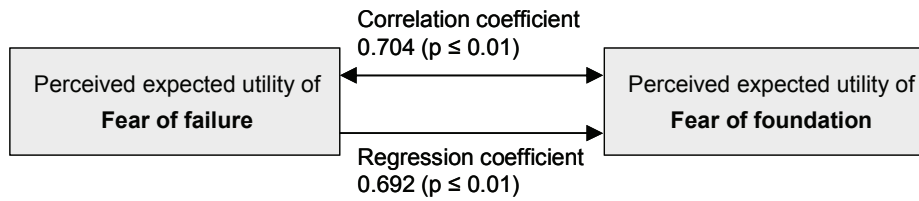
The empirical study shows a high correlation between the potential entrepreneurs' fear to found a company and their fear to fail with their respective company after foundation. The correlation coefficient for this interrelation is 0.704 and highly significant (significance level <0.01).

A logical interpretation of this correlation to derive hypothetical causality can be made. It seems reasonable, that the fear to fail with a company creates a certain hesitance to found the respective company in the first place, as it does not make sense to found a company in expectation that will fail. The reversed causal relationship that the fear to found a company creates fear to fail with the company, once founded, does not seem plausible.

Interpreting the correlation as hypothetical causality leads to a further analysis to investigate the connection between the two variables fear of foundation and fear of failure. Regression analyses with fear of foundation as dependent variable and fear of failure as an independent variable reveals a regression coefficient of 0.692 with high significance (significance level  $<0.01$ ). Supporting the logical argument to interpret the connection from fear of failure to fear of foundation as causality, the results of the survey show that fear of failure with a regression coefficient greater than 50% is indeed the dominant driver of fear of foundation across the survey sample. This also holds true when each step of the Entrepreneurial Funnel is analyzed separately. The regression coefficients for funnel steps 0-IV are 0.635, 0.620, 0.619, 0.611 and 0.597. All are highly significant (significance level  $<0.01$ ).

Existing literature supports the general assumption that fear of failure plays a role in preventing potential entrepreneurs from founding a company (Ullrich 2013; Werner 2011; GfK et al. 2012; Meissner & Welp 2013), although the direct connection to fear of foundation and its importance was not researched. The empirical results indicate a predominant influence of fear of failure on fear of foundation, however it does not explain 100% of the effect. Further causes could be for example insufficient expectation of income, lacking support of the personal environment, too much stress for the own family (Werner 2011), insufficient personal funds (Werner 2011; GfK et al. 2012), etc. It has to be borne in mind that the few existing research studies which investigate the obstacles of founding a company often do not distinguish between fear of failure and other barriers. Ullrich (2013) for example presents a list of obstacles for foundation, which among others includes the items “better career option in employment situation”, “difficulty in acquiring customers” and “social risk in case of a failure”. These examples illustrate the missing differentiation of arguments. “Difficulties in acquiring customers” is an anticipated failure cause and therefore an indirect cause for fear of failure, in particular for the component probability of failure. “Social risk in case of a failure” refers to the consequences of a potential failure and therefore represents the indirect driver of fear of failure according to the component valuation of failure. Only the argument “better career options in employment situation” would address an argument different from fear of failure.

Since fear of failure is the predominant cause of fear of founding a company, hypothesis 1a can be confirmed.



**Fig. 41:** Confirmation of hypotheses 1a: Fear of failure as the dominant driver for fear of foundation

This does not seem very surprising, but is a required prerequisite for the following more in-depth evaluations, e.g., for investigation of the different components of fear.

### 7.1.2.3 The components of fear: probability and valuation

This section will focus on investigating the following hypothesis:

#### Hypothesis 1b:

Fear of failure is mainly driven by the components *perceived probability of failure (belief)* and *perceived valuation of failure (preference)*, where probability stands for the odds of failure and valuation for the perceived impact of the failure on the future of the entrepreneur.

As explained in the previous sections, this study bases upon the hypothesis that the overall amount of fear is composed of the probability that a failure will actually occur and its impact, i.e. how severe the consequences of failure would be. This argument bases on the expected behavior of a rational player who would try to maximize his/her expected utility, when taking a decision. Mathematically speaking, this utility is the product of the single outcomes and their corresponding probabilities. For example, if offered a lottery with the odds of winning 100 EUR with a chance of 10% or losing their bet with a chance of 90%, a rational player should not pay more than 1 EUR for the lottery ticket, as the expected utility equals  $10\% \times 100 \text{ EUR} + 90\% \times 0 \text{ EUR} = 1 \text{ EUR}$ .

However, Kahnemann and Tversky (1979) show, that in reality, human beings apply certain distortions in evaluating the probabilities and valuations of future events when taking decisions in the face of risk. The expected value  $U$  represents the sum of the products of outcomes  $x_i$ , weighted with a value function ( $v$ ), and the expected probability of each outcome  $p_i$ , weighted with a probability function ( $w$ ):

$$U = \sum_{i=1}^n w(p_i)v(x_i)$$

These weighting functions describe the players tendency to, for example, overestimate very small probabilities, and hence explain the irrational prices of state lotteries, where participants are willing to pay way above the value of the expected utility for the bet (Kahneman & Tversky 1979).

In this study of entrepreneurial failure, it is very likely that the actors show a similar “human” behavior, when assessing risks, i.e. the probabilities and valuations of future events. Additionally, in the case of the uncertainty of entrepreneurial failure, the real probabilities cannot be known in advance. The decision, hence, has to be taken under ambiguity and not only under risk (c.f. figure 17 for an overview of the states of the future). This leads to the interrelation of perceived probabilities and valuations for rational, yet human actors as shown in figure 18.

The empirical study aimed to verify whether this interrelation can be observed in reality. As the act of taking the decision to found a company is likely to be highly emotional, it could well have been, that this hypothesis of a rational actor maximizing his/her expected utility does not apply, or is overlaid with other, more irrational factors.

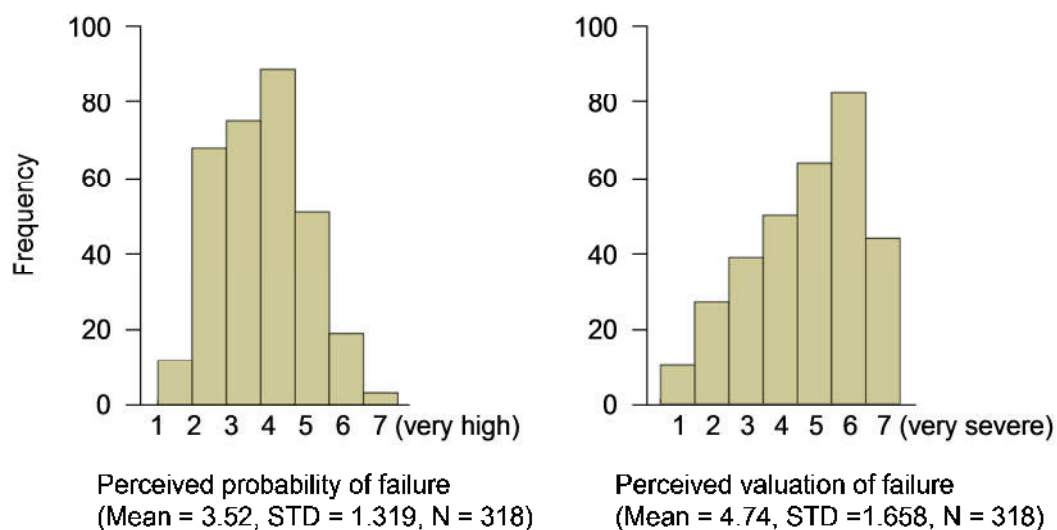
The empirical study asked the survey participants to rate their estimations of the odds that their founded company would fail and how severe this failure would be for their future lives on a Likert scale from 1 to 7.

The answers for the perceived probability of failure show a strong peak around the mean of 3.52 and a quite moderate standard deviation of 1.319. Given the high chances of startup companies to fail, it seems that potentials entrepreneurs underestimate the odds of their potential business to fail. This is in accordance to previous studies. As early as in 1988, Cooper et al. showed in a survey with 2.994 young entrepreneurs who became business owners recently that the survey participants rated the perceived prospects of their business as way too favorable. 95% of the participants rated the odds of success  $\geq 5$  out of 10, 81% even  $\geq 7$  out of 10 and 33% as absolutely certain with 10 out of 10. The mean value of the answers was 8.1 on a scale of 1-10 (Cooper et al. 1988). These results are not completely comparable with this study, as Cooper’s survey focused on young entrepreneurs who already founded

companies, whereas this study also targets nascent entrepreneurs before foundation. However, a tendency for over-optimism about the chances of success can be observed in both settings.

The peak of the answers about the perceived valuation of a failure is shifted to the right towards a higher severance. The mean is 4.74, with a highest number of given answers on 6, and a moderate standard deviation of 1.658. This rationality of the survey participants according to this estimation also seems to be questionable. 60% of the participants rated the impact of a failure with their potential company on their future lives as very severe ( $\geq 6$  out of 7). This could be an indicator for the assumption, that it is still a strong dishonor to be a failed entrepreneur. Multiple studies confirm that entrepreneurial failure is seen as a stigma in Germany (Ullrich 2013; Landier 2006; McGrath 1999).

#### Distribution of answers in survey



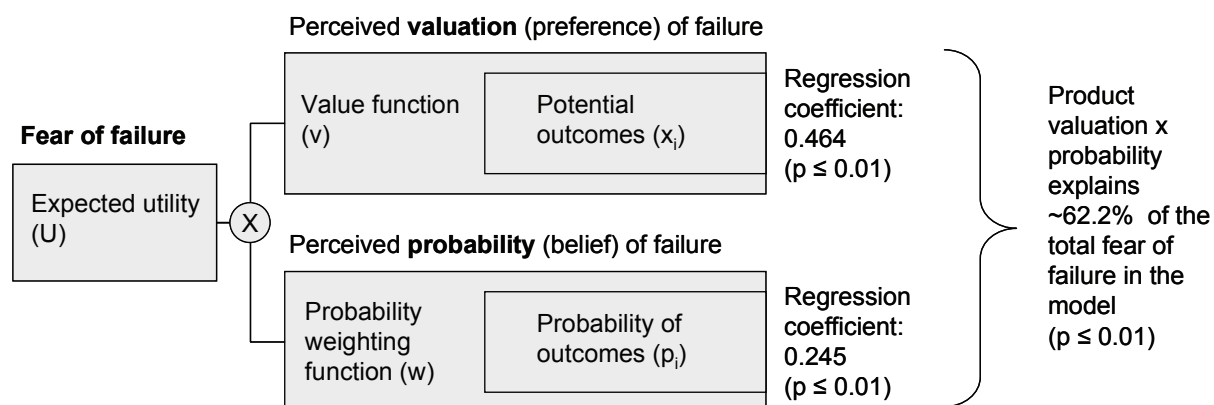
**Fig. 42:** Distribution of answers for perceived probability of failure and perceived valuation of failure in survey

The variables of these two surveyed items were used as independent variables in a regression analysis with fear of failure as dependent variable. Both variables proved to be a driver of fear of failure. The regression coefficient of the perceived valuation of failure is 0.464, the respective regression coefficient of perceived probability is 0.245. Both regression coefficients are highly significant with a significance level  $< 0.01$ . These results show, that both variables work as drivers for the overall fear of failure when analyzed as two independent variables in one regression model. However, as hypothesized, both variables should be linked to each other and have to be investigated with their interrelation. Following the calculation of the expected utility the product of these two variables was calculated, to



show the expected utility a rational player should base the price of his/her bet on. In this case, the price of the bet represents the overall amount of fear of failure. A further regression analysis with the mentioned product of the expected probability of failure and the perceived valuation of failure as independent variable and overall fear of failure as dependent variable shows a regression coefficient of 0.622 with high significance (significance level  $<0.01$ ). This result shows that the majority (about 62%) of the potential entrepreneur's fear of failure can be explained by the rational argument of the expected utility of the potential failure and proves the overall fear to be rational in wide parts. However, there remains a relevant part of the overall fear of about 38% that cannot be explained by the expected utility. The reasons for this are likely to be manifold and can at this stage only be speculated about. Reasons could for example be an individual's general tendency to be frightened ("cowards vs. daredevils").

Since the majority of drivers for the overall fear of failure could be explained by the components of the expected utility hypothesis 1b can be confirmed.



**Fig. 43:** Confirmation of hypotheses 1b: Fear of failure can predominantly be explained by the components perceived valuation of failure and perceived probability of failure

#### 7.1.2.4 Importance of each component: Valuation as dominant driver

After having identified the two major components *perceived probability of failure* and *perceived valuation of failure* which drive fear of failure, this section will focus on investigation of the following hypothesis:

### Hypothesis 1c:

Out of the main two components of fear of failure, the *perceived valuation of failure (preference)* has a higher impact on the overall fear of failure than the *perceived probability of failure (belief)*.

The previous section illustrated that with a regression coefficient of 0.464 the component *perceived valuation of failure* drives the overall fear of failure almost twice as much as the component *perceived probability of failure* with a regression coefficient of 0.245 (both highly significant with significance level  $<0.01$ ) for the entire survey group. This difference seems to be in fact with regards to content, not statistical artifacts: If one of the two variables had a higher statistical spread, it could tend to a lower regression coefficient. If this was the case for the variable *probability of failure*, the cause could simply be in the statistical methodology. However a corresponding analysis of the distribution of the two variables shows that in fact the variable *valuation of failure* has a higher standard deviation (STD) of 1.658 than the variable *probability of failure* with a standard deviation (STD) 1.319. Hence, the twice higher importance of valuation than probability can be explained by a different preference of the survey participants. That means that decreasing the valuation of failure by one unit on the 7 step Likert scale could almost compensate an increase of two units on the 7 step Likert scale for the probability of failure. This is a very interesting finding, as it indicates, that potential entrepreneurs are far more afraid of *what will happen*, if they fail, than of the odds *that it will actually happen* that they fail. A rational actor would value both components equally, as their product drives the expected utility and hence an increase in either one has the same overall effect (assuming both are on the same level). Entrepreneurs seem to be much more willing to take risks on the probability than on the consequences. This is a subjective distortion which could also be observed in Prospect Theory research (Kahneman & Tversky 1979).

The results above indicate, that hypothesis 1c can be confirmed, since one of the main two components of fear of failure (*perceived probability of failure (belief)* or *perceived valuation of failure (preference)*), does have a higher impact on the overall fear of failure than the other. The components *perceived valuation of failure* has a higher impact on the overall fear of failure than the *perceived probability of failure (belief)*.

#### 7.1.2.5 Shift of component importance along the funnel: cold feed before foundation

After having shown that the component *valuation of failure* generally has a higher importance than *probability of failure*, the following section will investigate this compared importance in more detail to evaluate hypothesis 1d:

##### Hypothesis 1d:

The dominant component of fear of failure (i.e. the component *perceived probability of failure (belief)* or *perceived valuation of failure (preference)*, which has the higher impact on overall fear of failure) differs between entrepreneurs in the different steps in the Entrepreneurial Funnel.

While it holds true for the overall survey group that valuation instead of probability is the main driver of fear of failure, there are differences between the different steps in the entrepreneurial funnel. The same regression analysis with fear of failure as dependent variable and estimated valuation of failure and estimated probability of failure as independent variables was conducted, but this time stratified by the position in the Entrepreneurial Funnel of the survey participants. The results show that for most of the funnel steps the valuation of failure remains the dominant driver for overall fear. However, funnel step III (*positive evaluation of idea*) builds an exception.

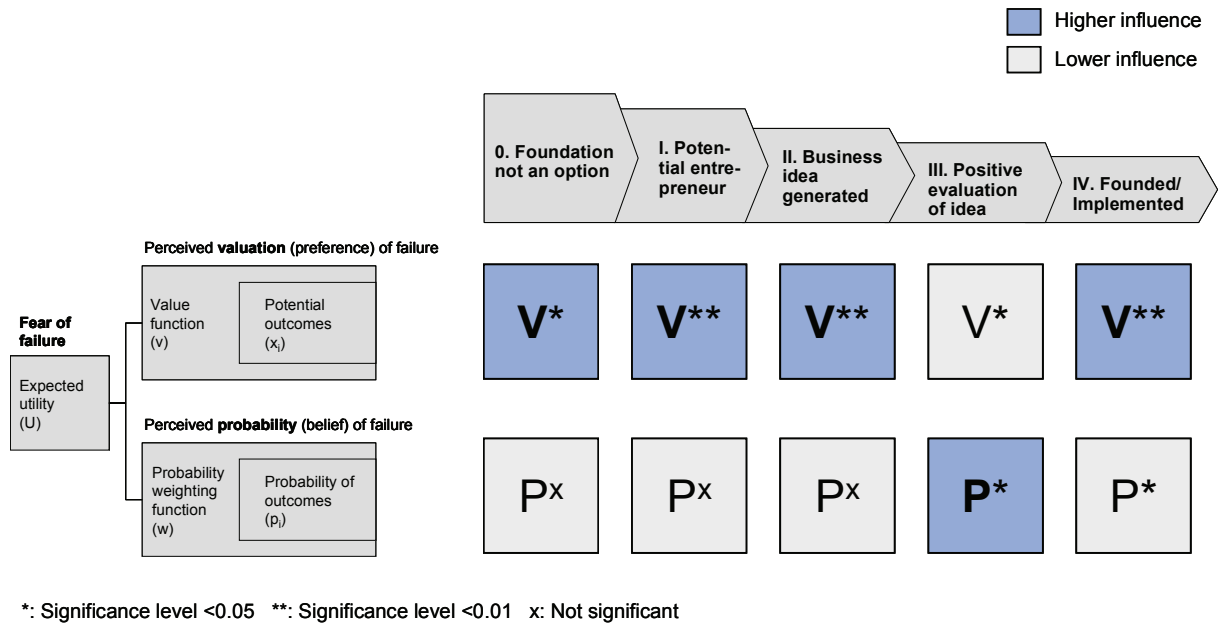
**Funnel step 0 (Foundation not an option):** Valuation of failure remains the dominant driver for overall fear of failure with an extremely high regression coefficient of 0.711 and a significance level of  $<0.05$ . The probability of failure seems to play a minor role here and does not reach a significant level as driver of fear of failure. The probability of failure of a potential founded business does not make too much sense here anyway, since foundation is not an option anyway for this survey group.

**Funnel step I (Potential entrepreneur):** Valuation of failure also remains the dominant driver for overall fear of failure. The regression coefficient is 0.431 and highly significant with a level of  $<0.01$ . The variable probability of failure does not reach a significant regression coefficient, since the effect on fear of failure is rather small (regression coefficient 0.175) and the sample size is reduced through the stratification. However, with 0.464 (significance level  $<0.01$ ) the combination of the two variables to the product *probability x valuation of failure* has a higher regression coefficient, than *valuation* alone, which indicates that *probability* adds explanatory power.

**Funnel step II (Business idea generated):** Also in this funnel step, the valuation of failure remains the dominant driver for fear of failure, with a regression coefficient of 0.475 with high significance on a level of  $<0.01$ . Probability of failure does not show a significant regression coefficient to fear of failure, assumingly also because of its minor importance and the reduced sample size. Similar to funnel step I, the product *probability x valuation of failure* with a regression coefficient of 0.588 and a significance level of  $<0.01$  adds explanatory power as compared to only *valuation of failure*.

**Funnel step III (Positive evaluation of idea):** While analysis of the previous funnel steps did not bring any surprises compared to the overall sample, funnel step III builds an exception. Once a potential entrepreneur has a concrete idea and evaluated it as positive, the importance of the two components of fear of failure suddenly changes. The importance of the *probability to fail* – which did not even reach significant levels in the previous funnel steps – suddenly gains high importance for the overall fear of failure with a regression coefficient of 0.422 with a significance level  $<0.05$ . This time, *valuation of failure* only comes in second place, with a regression coefficient of 0.395 and a significance level  $<0.05$ . The product of the two components reaches a climax of explanatory power within all funnel steps with a regression coefficient of 0.745 with a significance level  $<0.01$ .

**Funnel step IV (Founded/implemented):** Real entrepreneurs, i.e. survey participants who actually already founded a company still feel the *valuation of failure* of their corresponding businesses as more important for their fear than the *probability of its failure*. The regression coefficient for *valuation* is 0.311 with a significance level  $<0.01$  and for *probability* 0.211 with a significance level  $<0.05$ . The product *probability x valuation of failure* shows a regression coefficient of 0.506 with a significance level  $<0.01$ . For participants in this survey group, almost half of their fear is not caused by the rational evaluation of the expected utility of fear of failure.



**Fig. 44:** Confirmation of hypotheses 1c: The components perceived valuation of failure (preference) has a higher impact on the overall fear of failure than the perceived probability of failure (belief) for all funnel steps except step III (Positive evaluation of idea)

According to the analyses above, funnel step III (Positive evaluation of idea) builds an exception with *probability of failure* suddenly gaining a higher importance than *valuation of failure*.

This phenomenon can not only be investigated by analyzing the regression coefficients as shown above, but also by taking a closer look at the mean values of the two components of fear of failure. Here, funnel step III (Positive evaluation of idea) also shows a particularity regarding the means of the variable *probability of failure*. The perceived probability of failure constantly decreases throughout the steps in the funnel, except in funnel step III, where it reaches a local peak. The means in funnel step 0-IV are 4.00, 3.86, 3.54, **3.70** and 3.12 on a Likert scale 1-7. The variable *valuation of failure* does not show this behavior and decreases constantly through the funnel. The means in funnel step 0-IV are 5.76, 5.34, 4.83, 4.37 and 4.15 on a Likert scale 1-7.

The results above indicate, that hypothesis 1d can be confirmed, since the importance of the components of fear of failure (*perceived probability of failure* (belief) or *perceived valuation of failure* (preference)), differ between entrepreneurs in the different steps in the Entrepreneurial Funnel. Except for funnel step III (Positive evaluation of idea) the components *perceived valuation of failure* (preference) has a higher impact on the overall fear

of failure than the *perceived probability of failure (belief)*. This is in line with findings from Prospect Theory that the dimension *valuation* is generally more important for human decision makers than *probability* (Dobelli 2011, pp.106, 233; Sunstein 2002; Kahneman & Tversky 1979). In funnel step III the *probability* gains a higher importance. This effect can be explained by the cognitive distortion through the *cold feet* effect (Epstein & Kopylov 2007) that can be observed in similar situations. As explained in section 5.2.2.2, the effect describes dynamically changing risk preferences which lead to of a higher risk aversion towards the moment of decision. “Individuals often lose confidence in their prospects as they approach the ‘moment of truth’” (Epstein & Kopylov 2007). Applying this interpretation on nascent entrepreneurs means that they lose confidence in their venture when the moment of decision approaches and hence they suddenly rate the probability of failure higher. The effect of *cold feet* influences the perception of the probability of an event, while *anxiety in the face of risk* influences the valuation of the event. The fact that the latter occurs towards the moment of resolution of uncertainty and not the moment of decision, could explain why it cannot be observed here (c.f., section 5.2.2.).

### **7.1.3 Summary of results and implications**

This section investigated the phenomenon of entrepreneurial fear in great detail. Fear of starting a company is an important influence factor on potential entrepreneurs (in alignment with literature, e.g., Brixy et al. 2011; Welpe et al. 2011b), however the amount of fear by trend decreases along the entrepreneurial process. The more the individuals engage themselves in the process of becoming a founder, the less fear they experience. This could be because they get more and more acquainted with the matter, meet other founders, etc. and through that, the foundation gets less abstract and less frightening. Generally, two groups of potential founders can be identified: the rather fearful, and the rather fearless. For both groups, the fear to found a company is predominantly caused by the fear of failure. That means, they do not even dare to try, since they fear they could fail. Other aspects that could hinder someone to found, for example the private situation, the preference for dependent work, appealing alternative options or social reputation of entrepreneurship (Brixy et al. 2011) play a minor role, compared to the effect of fear of failure. Disaggregating the abstract feeling of fear of failure into its components reveals the expected probability to fail and the evaluation of a potential failure as underlying drivers, which are able to explain the major part of the fear. Similar to the mathematical expected value (Ibe 2009, p.39), the fear can be explained by the expected probability and the value of an unpleasant event (Kahneman &

Tversky 1979; Tversky & Kahneman 1992), which explains fear as a surprisingly rational (though not objective) evaluation of the situation. However, both the expectation and the valuation are highly subjective estimations. The impact of a potential failure is a more important driver for fear than the odds of a failure. As most people would rate a failure to have a severely negative impact on their lives, they are scared about what could possibly happen rather than how likely it is, that it will actually happen. This is in line with findings from Prospect Theory (Kahneman & Tversky 1979; Tversky & Kahneman 1992). While the valuation of a failure is the major driver for fear across all types of individuals and most funnel steps, the step immediately before foundation builds an exception. Here, the potential entrepreneurs get “cold feet” (Epstein & Kopylov 2007) and are suddenly biased towards the probability of a failure event, rather than the event itself.

The findings result in one major implication: to get more people to engage in entrepreneurship, you have to make failure less scary. A potential failure is evaluated so severe that people are often too scared to even try starting a business (see also: Brixy et al. 2011). This evaluation of the impact of a failure is probably caused by both “harder” and “softer” causes. A hard argument for the negative impact of a failure is the chance of personal financial distress (Meissner & Welp 2013). If an entrepreneur gets into personal liabilities – which might often be necessary – it can lead to his/her private bankruptcy if the business fails. According to the current German laws, it takes six years of living in poverty to get out of private bankruptcy (§ 286 InsO). Apart from private financial accountability, this also applies to legal issues (Meissner & Welp 2013). Even for a company of limited liability, the director can be held personally accountable if he/she missed to fulfill his/her responsibilities (§ 43 GmbHG). However, in the new role and highly uncertain environment of being the director of a startup, it might be hard to live up to all of the according responsibilities. Novice entrepreneurs face various challenges compared to experienced entrepreneurs (Politis 2008; Baron & Ensley 2006; Westhead et al. 2005; Westhead et al. 2003; Ucbasaran et al. 2003). An inexperienced founder might not even be aware of according responsibilities, since it is a new situation for him/her. Also, there are no procedures, departments, etc. in place like in established companies that could help him/her. For example, in pretty much any established company, there is a standardized template for the contract of employment which fulfills the regulatory requirements and a human resources and legal department with knowledge about employment law. The entrepreneur does not have this knowledge, these templates or such departments. The only thing he/she has just as well is the responsibility. Apart from these ‘hard’ arguments, there are also softer arguments. Failure is seen as a stigma in Germany



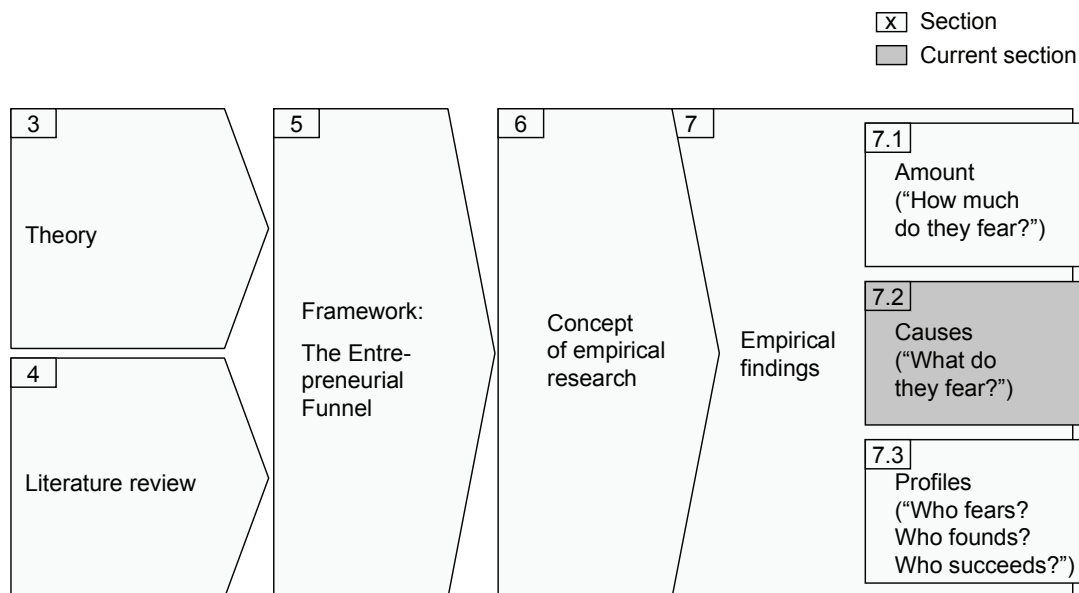
(Ullrichover 2013; Landier 2006; McGrath 1999). This leads to situations, where entrepreneurs do not get a second chance. The first shot has to be a winner. Obviously, that makes it harder to decide, if a business idea is sufficient to try. Even outside of the entrepreneurial context, being a failed entrepreneur can be negative for the future career (Landier 2006). If the courage to try and the achievements in the startup-phase are not appreciated by the next employer, it might be hard for the failed entrepreneur to find a new suitable position. At best, the years of entrepreneurial experience are wasted, at worst they are even adverse.

To change this situation, a shift in regulation and in mindset has to take place. Failure is a normal part of entrepreneurial activity and has to be treated like that by legislation and society. The US American culture can be a role model here (Landier 2006). Failure can be seen as a normal part of the learning process and a failed entrepreneur can be desired partner of investors for future projects due to his/her experience (Landier 2006). Since chance plays such an important role in success and failure, it is often not the entrepreneur who is accountable for it (Landier 2006; Kihlstrom & Laffont 1979; Barney 1986). Often, failed entrepreneurs have a more valuable experience than successful ones, where everything went just too smooth. It is hard to change the public opinion rapidly. Investors, banks (e.g., KfW, LfA) and business plan competitions could take a leading role here, seeking out particularly for entrepreneurial re-starters. An important role comes to legislation as well. The implications of failure and the personal risks should be softened (Meissner & Welppe 2013). This could be done by changing the bankruptcy laws (Landier 2006), for example by decreasing the time of private insolvency from six (§ 286 InsO) to three years for individuals, where the private insolvency was not caused by excessive private consumption but by entrepreneurial activity. Also the personal liability of the director of a business (§ 43 GmbHG) should be limited to deliberate breaches and the naturally lacking knowledge about the manifold legal responsibilities should be taken into account. Obviously it is not easy to design the legal framework in a way that protects founders but does not summon abuse.



## 7.2 Empirical findings about feared causes of failure ("What do they fear?")

Section 7.1 investigated the amount of fear potential entrepreneurs face and identified the fear to fail with their according enterprises as the main driver for their fear to found a business in the first place. In the following section the fear of failure will be analyzed in more detail. While the potential founders fear to fail, it is not yet known, why they think so. In particular it should be explored, what reasons they anticipate that would lead their businesses to failure. These reasons can obviously only be assumptions, as most of the potential founders have no previous entrepreneurial experience.



**Fig. 45:** Structure of this research study with highlighted current section

The first part of this section will explore the reasons that potential entrepreneurs expect to be responsible for their companies' failures. These perceived failure causes were explored in the empirical survey. The study assumed that there are certain failure reasons which seem to be more important across potential entrepreneurs than others. Because of that, the failure reasons will be ranked by their importance. Being aware of these dreaded anticipated failure causes, is highly relevant, since they are the beginning of a causal chain that eventually hinders potential entrepreneurs to found companies: They fear certain reasons that might lead to failure, which leads them to fear that their companies will fail, which again leads to fear to found a company in the first place. Being aware of this causal chain and its beginning – the dreaded failure

causes – allows influencing decision-making of nascent founders and creating ways to foster entrepreneurship in Germany. Such a way could be to address the feared failure causes in academic research, education or entrepreneurship consulting, to either (a) avoid the potential causes through counter measures or (b) lower the potential entrepreneurs' fear according to these reasons.

The second part of this section will take a different perspective on the same matter. It will present an overview on failure causes which are observed in reality and lead existing startups to failure. The basis will be previous research on entrepreneurial failure and the respective causes. As some of these reasons are more common than others, ranking will show their relative importance.

The third part will bring the insights from the first two sections together. It will show a comparison of the failure reasons potential entrepreneurs anticipate and the failure reasons that can actually be observed in reality. This is very important, because it shows, if entrepreneurs are afraid of the 'right' things. Oyer and Volery (2012) point out that potential entrepreneurs need a "sense of failure" (Oser & Volery 2012), as it will lead them to "awareness of pitfalls" (Oser & Volery 2012). Currently the focus seems to be more on a "sense of success" (Oser & Volery 2012) in academic research and practical implementation (Oser & Volery 2012; Rotefoss & Kolvereid 2005; Reynolds 1997; Souitaris et al. 2007). Awareness of failure reasons is rather neglected (Oser & Volery 2012; Bryant & Dunford 2008; Schulte 2011; Sommer & Wittrock 2011; Mellahi & Wilkinson 2004). This study assumes that anticipated and real reasons which lead to entrepreneurial failure are not identical. This leads to the following hypothesis:

#### Hypothesis 2a:

The reasons why their corresponding ventures might most likely fail, which potential entrepreneurs anticipate before founding, do not entirely match actual empirical observations of the most common reasons for failure of startup companies.

Even though there is no exact match, it is likely that there will be certain failure causes which are as well anticipated before foundation as observed in reality at actual failed companies. Other reasons potential entrepreneurs fear could be overrated, since they are not major failure reasons in reality. Vice versa there could be failure reasons that are not on top of the potential founders' minds before foundation, but should be, since they lead to failure in reality. These reasons are blind spots for the entrepreneurs and are possibly not taken into account well

enough. The three groups that can be categorized from the reality match of the anticipated failure causes leads to the following three hypotheses. A fourth group would be potential failure reasons, which are neither in the minds of entrepreneurs nor observed in reality. These are not in focus of this study.

Hypothesis 2b:

Potential entrepreneurs anticipate certain reasons to be responsible if their venture should fail, which match actual empirical observations of the most common reasons for failure of startup companies (existence of “reasonable reasons”).

Hypothesis 2c:

Potential entrepreneurs anticipate certain reasons to be responsible if their venture should fail, which cannot be observed in actual empirical observations of the most common reasons for failure of startup companies (existence of “overrated reasons”).

Hypothesis 2d:

Potential entrepreneurs do not anticipate certain reasons as a likely cause if their venture should fail, which however can be observed in actual empirical observations of the most common reasons for failure of startup companies (existence of “blind spots”).

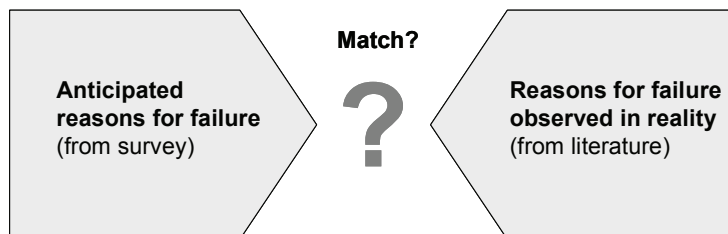
### **7.2.1 Overview of approach**

In the first step a literature review will collect and present the main failure reasons of startup companies. These reasons will be ordered according to their importance to identify the most relevant failure reasons. The frequency of studies mentioning the reason will be used as order criterion.

A second step will survey the anticipated failure reasons of potential entrepreneurs. To do so in a systematic way, a list of potential failure reasons to choose from in the survey had to be developed. This list consisted of failure causes from literature, other potential pitfalls and shortfalls from literature, expert interviews and from answers to an according open question in the pre-test of the survey. This approach granted a list of assumingly the most relevant reasons for the survey. Additionally, the survey questioned for other reasons in an open question to assure no potential cause was missing. As a result of the empirical survey all failure reasons were ranked according to the frequency of their selection to determine the

most important ones, i.e. the ones that most survey participants classified as important failure causes.

The third step will compare the ranked failure reasons from literature and from the empirical survey and classify them as *reasonable*, *blind spots* or *overrated*.



**Fig. 46:** Comparison of anticipated failure reasons from survey with real failure reason from literature

## 7.2.2 Results

The following section will show the results from the literature review to identify the most important actual failure reasons, the findings from the empirical study about the anticipated failure reasons and the match of those two.

### 7.2.2.1 Overview of actual failure causes of ventures according to literature

Despite of the challenges described above, there are several research studies that aim to explain entrepreneurial failure and identify the most important failure causes. Even though certain limitations have to be considered when reviewing these studies, they achieve to show a general tendency which of the potential causes are more and which are less important. There are also very helpful meta-studies which aggregate the existing empirical studies and support to distill the essence of these studies to a bigger picture of the most important failure causes. Freiling and Estevão (2005) reviewed and summarized existing research to identify the success factors of newly founded companies in the service industry. Doing so, they also identified many failure factors. Fallgatter (2005) summarized and evaluated the current state of research according to success factors of young enterprises in general and along with that also identified some failure factors. Hansen (2009) built on the two literature reviews of Freiling and Estevão (2005) and Fallgatter (2005) with focus on newly founded companies in the service industry and added the findings of supplementary empirical studies. Hansen also presents an overview and differentiates between success and failure factors and finds that in many studies failure factors are merely the mirror image of the respective success reasons. In

a further study, Freiling (2009a) reviewed and evaluated the current state of research with focus on entrepreneurial failure caused by managerial shortfalls of the founders. This evaluation adds a very interesting perspective to the explanation of entrepreneurial failure. Since many other studies used in the reviews mentioned above highlight the importance of the founders as a success or failure factor, the investigation of managerial shortfalls can be interpreted as a deep dive into this category of causes of entrepreneurial failure. Also, especially in early phases, the company itself and its founders often cannot be distinguished. In the moment of foundation, the company literally is even equal to the founders. So, especially for startup companies it seems necessary to include the different types of managerial shortfalls in the discussion of failure causes of companies.

## **Approach**

The approach to identify the most important failure causes that can be observed in reality based on existing research studies bases on the following steps. First, all potential categories of failure reasons were collected based on a review of existing literature to get an exhaustive set of possible failure factors. Then, in the second step, the single studies were attributed to failure reasons. Each failure reason that was identified to have high importance in a specific study was marked. This categorization was partly already available from the existing literature review summaries mentioned above. Some studies, that actually only showed success factors but not failure factors were included as well, but accordingly tagged. An analysis proved that these studies do not distort the overall result, i.e. the identification of the most important failure reasons, and hence can be included without problems. Also, since some studies only present the failure causes as mirror images of the success causes (Freiling et al. 2010; Hansen 2009) and the reasons are classified in relatively general categories, the transition between success and failure causes is rather fluent. So these studies on success reasons can also be included from a consistency point of view. For the reasons explained above, also the studies dealing with managerial shortfalls were included in the overview. As a third and final step, for each of the failure cause categories, the overall amount of studies mentioning the category was counted. This approach is rather simple since it does neither include a ranking of the importance of certain reasons within a specific study nor a weighting between the studies. However, since all of the studies have different sample sizes, different numbers of mentioned failure causes, etc. they cannot be directly compared to each other anyways. Therefore a simple aggregation seems to be a pragmatic approach without the impression of false

accuracy, to achieve to get a rough impression or the ordinal ranking of the importance of the different failure causes.

### **Overview of failure reasons in literature**

The following table presents the research studies and the respective failure causes they identified. The failure causes are ordered by the number of their mentions by the studies.

Study	Note	Sample (n)	Specification of failure reasons																	
			management skills	marketing	industry expertise	finance	business plan	capital	accounting/ tax	organization	market demand	legal	size and growth	attitude	competition	procurement	private/ personal	team	personnel	social/ political
Hunsdiek (1987)	1, 3	324		x				x												
Kay, May-Strobl, Maaß (2001)	1, 3	650						x						x						
Laitinen (1992)	1	40							x											
Meyer (1999)	1, 3	136	x		x	x				x										
Schulte (1999)	1, 3	12	x					x												
Venkataraman et al. (1990)	1, 3	28		x																
Zacharakis, Meyer, De Castro (1999)	1, 3	8	x		x						x							x		
Terpstra, Olson (1993)	1, 2, 3	121	x	x			x			x										
Duchesneau, Gartner (1990)	1, 2, 3	26	x					x							x					
Hunsdiek, May-Strobl (1986)	2, 3	119						x												
Weihe, Laufner, Schüler (2001)	3	215	x			x		x										x		
Bindewald (2004)	3	1968	x					x												
Pleschak, Ossenkopf, Wolf (2004)	3	85		x				x												
Ricketts Gaskill et al. (2003)		n/a								x										
Jo, Lee (1996)		48	x			x														
Brüderl et al. (1992a)		1849	x			x														
Brüderl et al. (1992b)	4, 5	1849	x																	
Szyperski, Nathusius (1977)	5	n/a	x			x														
Klandt (1984)	5	n/a	x			x														
Aldrich, Zimmer (1986)	5	n/a	x			x														
Schüssler, Voss (1988)	5	n/a	x			x														
Brüderl, Preisdorfer, Baumann (1991)		1850				x					x									
Bates (1985)	4	20.964	x			x					x									
Bates (1990)	4	25.000	x			x					x									
Brüderl, Preisdorfer (2000)	4	n/a	x																	
Chandler, Hanks (1994)	4	n/a	x																	
Colombo, Grilli (2007)	4	391	x			x														
Herron, Robinson (1993)	4	n/a	x																	
KfW (2002)	4	n/a																		
Krystek, Moldenhauer (2007)	4	n/a																		
Lee et al (2001)	4	137	x			x														
Pennings et al. (1998)	4	2080	x			x														
Stam et al. (2010)	4	n/a	x																	
Storey (1994)	4	n/a	x																	
Stuart, Abetti (1990)	4	53	x																	
Audretsch & Mahmood (1995)	4	>12.000																		
Günter, Scheipers (1993)	4	n/a																		
Honjo (2000)	4	2488																		
Mata et al. (1995)	4	17612																		
Thornhill, Amit (2003)	4	339	x			x														
Witt, Schönbucher (2006)	4	n/a	x					x	x											
Gemünden, Konrad (2005)	4	n/a	x																	
Armtz, Bindewald (1998)	4, *	104		x			x													
Balderjahn (1997)	4, *	44		x			x													
Grulms (2000)	4, *	27																		
Hemer et al. (2006)	4, *	20		x			x	x												
Hüfner et al. (1992)	4, *	1.168		x			x													
Hunsdiek, May-Strobl (1981)	4, *	112		x			x													
Kay et al. (2007)	4, *	207		x			x													
Klandt, Daniels (2001)	4, *	50		x			x	x												
Kugler (2003)	4, *	405		x			x													
Lang-von Wins et al. (2002)	4, *	136		x			x													
Lowski et al. (2006)	4, *	501		x			x													
May (1981)	4, *	504		x			x													
Reents et al. (2004)	4, *	300		x			x													
Schulte (2005)	4, *	2.535		x			x													
de Brentani (1995)	1, **	115		x																
de Brentani, Ragot (1996)	1, **	55		x																
Brüderl, Preisendorfer, Ziegler (1996)	1, 2, 3;	1849	x																	
Chaganti, Schneer (1994)	1, 2, 3;	345	x																	
Chandler, Jansen (1992)	1, 2, 3;	431	x				x													
Cooper, Gimeno-Cascon, Woo (1994)	1, 2, 3;	1053	x				x													
Roure, Keeley (1990)	1, 2, 3;	36	x																	
Stuart, Abetti (1987)	1, 2, 3;	24	x				x													
Pleschak, Werner (1999)	2, 3, **	221		x																
Schwenk, Shrader(1993)	2, 3, **	n/a																		
McGee, Dowling (1994)	2, **	210					x													
Herron, Robinson (1993)	2, 3, **	n/a		x																
Sheikh(2001)	3, **	60		x	x															
Number of mentions:			36	21	21	16	13	10	8	6	5	4	4	3	1	1	1	1	0	0
Sources: 1: Freiling & Estevão (2005), 2: Fallgatter (2005), 3: Hansen (2009), 4: Freiling (2009), 5: Brüderl (1992)																				
Notes: *: Focus on managerial shortfalls, **: Focus on success factors																				
n, a: Not available (theoretical, conceptual only, different sample sizes, etc.)																				

**Fig. 47:** Overview of existing research studies and corresponding findings about failure causes

The literature review shows broad consensus between the studies according to the most important failure reasons. For most of the studies important failure causes are in the context of management skills of the founder(s), industry expertise of the founder(s) and the area of marketing and of finance. Other important reasons, however with a lower extent of agreement among the different studies, have to do with the business planning, capital endowment of the company and problems with accounting and taxation and with organizational issues, like organizational structures and planning. Among the less important failure causes seems to be consensus between the different empirical studies again. Potential pitfalls do not seem to be too likely in the areas about problems with competition, procurement and suppliers, private or personal problems of the founders (e.g., health problems), problems within the founding-, management- or owner-team, problems with the work force or the employment market or in the area of social and political developments.

The following table presents the areas of the most important failure causes for startup companies based on the literature review, ordered by importance.

Failure reason	Number of studies to mention this failure reason	
	absolute	percentage rate
<b>management skills</b>	36	52%
<b>marketing</b>	21	30%
<b>industry expertise</b>	21	30%
<b>finance</b>	16	23%
<b>business plan</b>	13	19%
<b>capital</b>	10	14%
<b>accounting/tax</b>	8	12%
<b>organization</b>	6	9%
<b>market demand</b>	5	7%
<b>legal</b>	4	6%
<b>size and growth</b>	4	6%
<b>attitude</b>	3	4%
<b>competition</b>	1	1%
<b>procurement</b>	1	1%
<b>private/personal</b>	1	1%
<b>team</b>	1	1%
<b>personnel</b>	0	0%
<b>social/political</b>	0	0%

**Fig. 48:** Overview of most important actual failure reasons for startup companies from literature

Two of the most important reasons have to do with the person of the entrepreneur(s) himself/herself. Lacking management skills of the entrepreneur or lacking experience and knowledge in the industry the startup operates in, was observed to lead to failures in previous studies. Two other important reasons consider two crucial business functions in companies: marketing and finance. It is not surprising that not being able to adequately fulfill the



marketing function and hence achieve sufficient sales of products or services at the required price lead to failure in companies according to literature. The finance function plays an important role, too. Financial planning and liquidity management seems to be particularly important for young and yet vulnerable enterprises in a volatile environment. Insufficient business planning – as well before foundation as during the running business – is a major failure reason as well. It seems necessary to plan well in advance and to be flexible enough to adjust the planning during the ongoing business to react to environmental changes or also just to past misinterpretations of the situation. The capital endowment plays a key role especially for young businesses as well. It allows building up competitive structures through significant investments and gives the company enough ramp-up time to generate cash flows. The next two items in the order of importance concern the business functions of accounting and tax (12% of studies mentioned this failure reason) and organization (9% of studies mentioned this failure reason). These areas seem to be on the threshold of importance as a failure reason. It could be that they are only of particular importance for certain businesses. The following areas according to figure 48 in the order of importance as a failure cause in existing literature are each only mentioned by 7% or less of the examined studies. The reasons mentioned above which are clearly important are all mentioned at least twice as often in the studies. So the failure causes below 7% seem to be of minor importance.

A glance at the most important failure reasons reveals that the common practice of investors to closely look at the founders and their business plan already captures three of the most common failure reasons. When investors grant sufficient funding for the startup and support them in fulfillment of the marketing and finance function, the top six potential failure reasons are already addressed.

### **Further reasons from single research studies**

Additionally there are potential failure causes that are only mentioned by a single or very few studies and hence did not make it into the overall list of potential failure reasons at all. According to Freiling and Estevão (2005) and Hansen (2009), Heimerl and Reiß (1998) mention the amount of infrastructural support of partners as potential success and failure reasons. This seems to be of particular importance for franchise foundations (Michael & Combs 2008). Timmons and Spinelli (1994) mention the size of the company at the moment of foundation as a success factor. Carter, Gartner and Reynolds (1996) find that the speed of implementing the foundation, e.g., the gathering of financial resources or the beginning of

production, is linked to entrepreneurial success. In a further study Carter et al. (1995) find that the selection of the business model, e.g., the industry, the position in the value chain or the location, has an influence on the success of the potential company. Chandler and Hanks (1994) support this argument but besides market attractiveness, they highlight the business model aspects of available resources and strategy. Otto (2004) evaluates the influence of cooperation with scientific institutions and their influence on success. Bamford et al. (2000; 2004) investigate the influence of decisions and resources at different points in time on success in new bank foundations. Apart from these concrete studies, there are also diverse studies available dealing with broader, more general concepts of entrepreneurial success and failure, for example according to the discussion of “Liabilities of Newness” (Campbell 1965).

#### **7.2.2.2 Determination of anticipated failure causes from survey**

The following section takes the perspective of potential entrepreneurs before the foundation of their according companies. To better understand their fear of failure, the anticipated reasons why they think their companies might fail are investigated. The survey participants were asked that if their potential individual business would fail, what the most likely causes of that failure would be. As described in section 6.3.4, the survey gave them a randomized list of 18 potential failure reasons to choose from as well as an additional open question for further reasons.

#### **Amount of anticipated failure reasons**

The survey participants selected an average of 3.7 reasons with a relatively small standard deviation of 1.8. That assumes that for most entrepreneurs a relatively short list of potential failure reasons is on top of their minds.

Interestingly enough, the survey participants who selected more failure reasons had a higher overall fear to found a company. There is a correlation coefficient of 0.145 with a high significance level  $<0.01$  between the number of selected reasons and the overall fear of failure. Regression analysis shows a regression coefficient of 0.136 with a high significance level  $\leq 0.01$  with fear to found a company as dependent variable and the number of selected reasons as independent. Due to this interrelation it can be assumed that potential entrepreneurs, who have more reasons in mind why their according company could fail, have a higher amount of fear and hence most likely hesitance to actually found the company. They

seem to be either more worried about all eventualities that could happen or just more aware of how tough it is, to bring a startup company to success.

To investigate more about this phenomenon, analyses were performed to evaluate if a higher number of selected anticipated failure reasons only lead to a higher fear to found a company or also to a higher fear that their according company, once founded, would fail. Surprisingly, a correlation analysis with the two variables *number of selected anticipated failure reasons* and *fear of failure* showed no significant correlation (significance level  $p=0.071$  is not significant). However, there seems to be a certain tendency. The correlation coefficient had the value 0.101. A subsequent regression analysis with *fear of failure* as dependent and *number of selected anticipated failure reasons* as independent variable showed a similar result with no significance but a potential tendency. The significance level was again 0.071 and the regression coefficient 0.097. Due to these analyses, it can be assumed that the number of selected failure reasons has no or only minor influence on the overall fear to fail with a company once founded.

On first sight, it may seem as a contradiction that the amount of possible failure reasons on the minds of potential entrepreneurs drive their overall fear to found a company but not their fear to fail with a company, though. This is especially surprising, since fear to found a company and fear to fail with the according founded company show a strong correlation, as shown before. However, arguments can be made to explain these interactions. One reason could be that survey participants who selected many failure reasons and hence are afraid to found a company, actually do not plan to do so. Therefore the fear to fail with an imaginary founded company seems not realistic or at least rather abstract for them. That could lead to a lower amount of fear of failure. Another reason could be that the origin of these types of fear could differ in the objectivity of their evaluation of the situation. Survey participants who are generally more cautious or anxious by their personality could tend to worry more about what could go wrong and hence tick off more failure reasons in the survey. Due to their anxious personality, they would hesitate to found a company and, hence, be more afraid of founding. This would be a highly subjective behavior. When it comes to fear of failure, they could think more objectively about it and try to estimate the odds to fail in a rational way. Another reason could be that these fears are time shifted. The event of foundation inevitably has to precede the event of failure with the company. So especially potential founders with a higher naturally tendency to fear could be more afraid of the earlier event than the later one. Moreover, fear of

failure only gets relevant once the decision to found is taken. This could show behavior of increased fear of “the next step”.

To explore more on these different feelings of fear, the following analysis will take a closer look at the natural preference of anxiety of a person – independently of the situation. This was measured with an item battery targeting general anxiety of persons. In this survey the State Trait Anxiety Indicator (STAI) (Spielberger et al. 1970) was used, as described in previous sections. It measures the general tendency of a person to be afraid of anything. A correlation analysis shows no significant relation of the general anxiety of a survey participant and the amount of selected failure reasons, but again a tendency. The correlation coefficient is 0.101 with a significance level of 0.077. An according regression analysis with the number of selected failure reasons as dependent variable and general anxiety as independent shows a similar result with a regression coefficient of 0.175 with significance level of also 0.077. This analysis shows that the general anxiety of a person could have a tendency to explain parts of the fact, that some potential entrepreneurs have more failure reasons on their minds. Founders who are generally more worried by their personality by trend have more possible failure causes on their minds. These worried entrepreneurs also have a higher fear to found a company due to their personalities. However, the analyses can only provide very weak evidence for this assumption.

### **Importance of each failure reason**

There seems to be a clear ‘preference’ of the survey participants according to the anticipated failure reasons. They ranked some as clearly more likely to happen, than others. The failure reasons potential entrepreneurs expect most to be responsible for a potential failure of their according companies are access to sufficient capital endowment for their companies and the amount and development of market demand. Each of those two reasons was considered a likely failure cause by more than half (each 51%) of the potential entrepreneurs. The next most important potential failure reason is about competition, e.g., too strong performance of competitors or imitation by competitors. A third (33%) of the participants selected this point as a supposable failure cause. The next two most important failure reasons are connected to the person of the entrepreneur. More than a quarter of the survey participants saw the attitude of the founder (26%) or his/her skill to sufficiently fulfill the finance function (25%) as a failure reason with high likelihood. The entrepreneur’s attitude refers to his/her character, according to his/her will, power of endurance, risk awareness and the like. The skills in

financial management are about costing, investment planning and budgeting, liquidity management, etc. Other important potential failure reason in the order of their perceived importance for entrepreneurs are in marketing (22%), legal/regulation (22%), problems within the team (founders, management or owners), e.g., conflicts and arguments (21%) and subcritical size or growth of the company (19%).

Interestingly enough, the failure cause considered least important (6%) by the potential founders is about insufficient management and social skills of the founders. This could be either because management skills in general are considered less important for a startup or because potential entrepreneurs overestimate their individual management skills (Cooper et al. 1988). The survey question was related to potential failure causes of their according companies, so if the survey participants overestimated their individual management skills and considered it sufficient they would not rate it as a potential failure reason. As literature clearly shows, that management skills of the founder(s) are definitely a success and failure cause (Chandler & Jansen 1992; Brüderl et al. 1992; Cooper et al. 1988), the underestimation of their importance shows already a quite obvious blind spot of nascent entrepreneurs. A deeper analysis of these blind spots will follow in the next section.

The second last important failure cause is about problems with procurement and/or with business partners (7%). The third last reason may seem surprising, too. Only 10% of the survey participants considered insufficient business planning a likely potential failure reason. Reasons for that could be similar to management skills. Either the founders do generally not value business planning as important, or they overestimate their own planning and hence not consider it a potential hazard for their future companies.

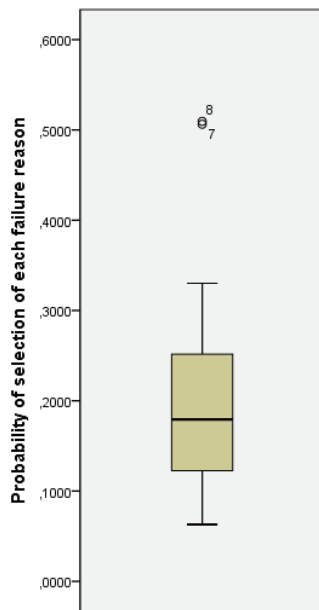
The following table presents an overview of the potential failure reasons perceived as most likely to cause failure of a startup company ordered by their importance (frequency of mentions).

**Anticipated failure reasons of potential entrepreneurs  
(N=318)**

Anticipated causes for entrepreneurial failure	Percentage of survey participants selecting this cause
capital	51%
market_demand	51%
competition	33%
attitude	26%
finance	25%
marketing	22%
legal	22%
team	21%
size_and_growth	19%
private	17%
accounting	15%
social_political	14%
personnel	14%
expertise	12%
organization	10%
business_plan	10%
procurement	7%
management_skills	6%

**Fig. 49:** Overview of anticipated failure reasons of potential entrepreneurs

As described in the section above, the survey participants on average chose 3.7 anticipated failure reasons out of 18. That leaves a single failure reason with an average chance of being selected of 20.8%. The table above illustrates, that not every potential failure reasons shows an equal frequency of being selected. Some have a clearly higher likelihood than others across all survey participants. Since some single reasons are of especially high importance, the median chance of a failure reason to be selected is below the mean chance, with a value of 17.2%, when taking the top two items with 51% selection chance each out. The following box plot illustrates the distributions of the selection probabilities of each single failure cause, with the median, box limits from the 25% to the 75% quartile, whiskers to the outmost items (but at maximum to 1.5 times the box width) and the outliers. The two outliers described above (capital and market demand) with 51% chance of being selected can clearly be identified in the plot.



**Fig. 50:** Box plot with distributions of the selection probabilities of each single failure cause

An analysis of the box plot reveals that the median can be used as a threshold to determine if a failure reason is important or not important. Values with a chance higher than 17.9% are more likely than a random selection of choices, others are less important. Given this threshold, the important anticipated failure reasons are (ordered by their importance):

- capital
- market demand
- competition
- attitude
- finance
- marketing
- legal
- team
- size and growth

The anticipated reasons with a perceived low likelihood to cause entrepreneurial failure are (ordered by their importance):

- private/personal
- accounting/tax
- social/political
- personnel
- industry expertise
- organization

- business plan
- procurement
- management skills

The perceived importance of the different possible failure causes differ between potential entrepreneurs in the different funnel steps. However the tendency, which reasons are perceived to have a high importance remains the same. The following section will highlight differences in the perception of the most important potential failure reasons between the funnel steps and will try to interpret them.

**Capital:** The factor capital endowment remains one of the top two perceived failure reasons for all entrepreneurs in the different funnel steps. An interesting insight from the survey, however, is that the importance of capital as a failure reason loses importance in funnel step IV, when entrepreneurs already have founded a company. An interpretation could be that at this point in time, some founders have already closed their financing rounds or identified their equipment with funding as sufficient.

**Market demand:** Insufficient market demand or changes in the demand also remains one of the top two failure reasons in all funnel steps. There are no major differences between the funnel steps.

**Competition:** Problems with too powerful competitors or imitation of products or services is an important perceived failure cause for potential entrepreneurs in all funnel steps. However, the importance across the funnel steps changes in relevance. While 38% of participants in funnel steps 0 and I consider problems with competition as a top failure reason, participants in funnel step II consider it even more important with 45%. Subsequently, the importance changes to 43% in funnel step III and 48% in funnel step IV. To interpret this behavior, you have to take a look at the entrepreneurs in the different funnel steps. In funnel step II, they already have some ideas, but have not yet evaluated one or more of them as positive. Looking at this process, there could be two explanations. The first is that the entrepreneurs who have vague business ideas but have not yet deeply evaluated them, hence have no realistic view on the competition. Either the uncertainty about the strength of the potential competitors or the overestimation of their strength creates doubts and fear of competition as a failure reason. A second interpretation could be that the entrepreneurs in funnel step II simply have not found a business idea with a sufficient market gap yet (selection bias). So it could be that most ideas the survey participants in funnel step II have, simply do have very strong competition and



hence have not been evaluated as positive. In funnel step III, the entrepreneurs already identified an idea that they could evaluate as positive. According to the above argumentation the importance of competition as failure reason is decreased, either because of the choice of an idea with lower competition or because the evaluation showed, that competition can be coped with.

**Attitude:** The attitude of the entrepreneur seems to gain importance steadily as a potential failure reason along the funnel. While only 14% of survey participants in funnel step 0 consider it crucial, its importance increases up to 33% in funnel step IV. Potentially, especially the power of endurance and the strength to cope with problems and setbacks proves to be of higher and higher importance along the foundation process. This could start with not finding good ideas in funnel step I, coping with demoralizing feedback in funnel step II, disillusioning experiences when evaluating the business case of a selected idea in funnel step III and continue with numerous operational problems with the company once founded in step IV. The strength to cope with setbacks and the will to go on gets more and more important.

**Finance:** According to financial management, e.g., investment planning and liquidity planning, there are no significant differences between the funnel steps. Between 19% and 33% of all participants rated it important in the different phases. There is a minor peak of 33% in funnel step III. This could only be because of random reasons or a statistical artefact but could also be interpreted content wise. Entrepreneurs who already evaluated a business case in detail might have already faced some aspects of difficulty in financial planning while performing their financial analysis for their business plan.

**Marketing:** The importance of problems in fulfilling the marketing function as a potential failure reasons is perceived as quite high and similar across the funnel steps 0, I, II and IV for 20-27% of the participants. Though, participants in funnel step III (*Positive evaluation of idea*) build an exception and ascribe a lower importance to failure due to marketing issues. Only 7% of those nascent entrepreneurs rate it as an important pitfall. This fact can be explained by a similar argument as for competition with two possible reasons. One is that the entrepreneurs in this stage only selected ideas with perceived high chances on the market and hence do not see marketing as a critical issue (selection bias). They seem to be convinced of their product or service in this stage, that is why they evaluated their idea as positive. In the end, marketing is the harder the less demanded the product or service is – and vice versa. The other possible reason lies in the evaluation process. While evaluating their idea, the founders

could either discover marketing as less crucial than expected or still see it as important but have already developed an at least rough plan how to tackle marketing.

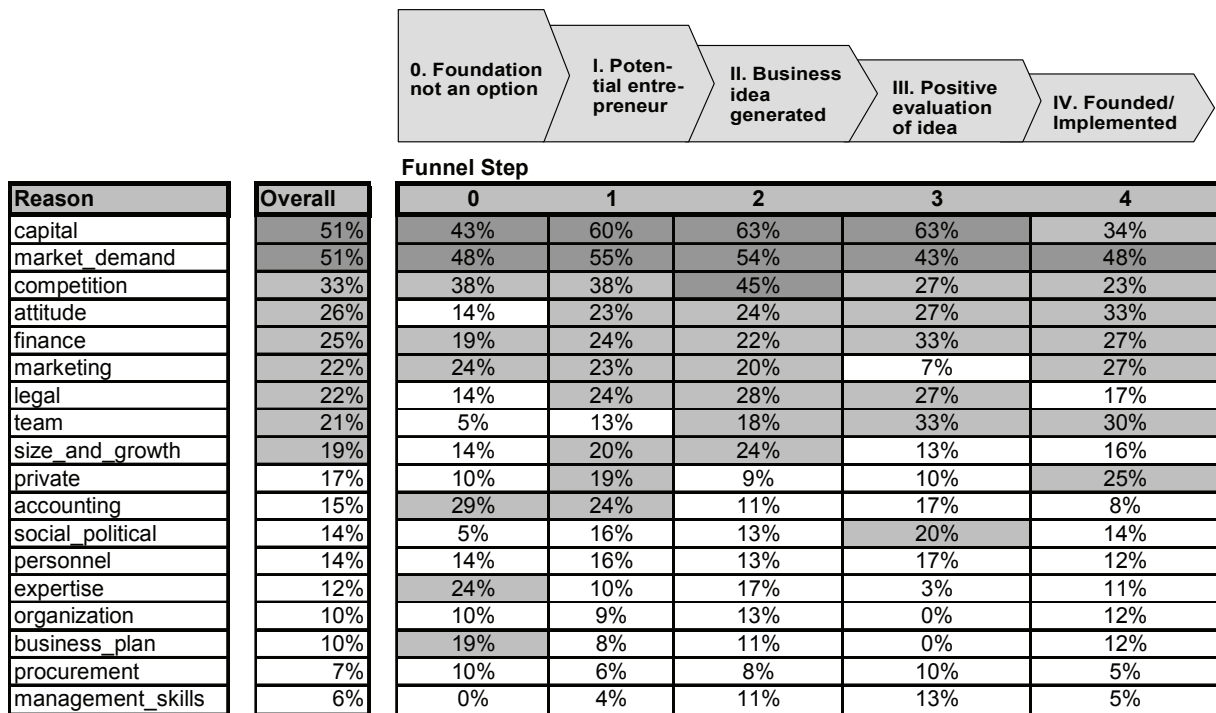
**Legal:** Problems with legal or regulatory issues are perceived as important only in the middle funnel steps. 24-28% of the survey participants in funnel steps I-III rated it a crucial pitfall. Only 14% of the participants in funnel step 0 rated it as important. Since for these participants foundation is not an option they cannot be seen as actual potential entrepreneurs. So it is not too surprising that they can have a deviating estimation about certain failure reasons. More interesting, however, is the fact that only 17% of the entrepreneurs who already have founded a company rate legal and regulatory problems an important failure reason. An assumption could be that many worries about legal problems are associated with the formation process of a company, e.g., the legal formation of the company, its declaration to the authorities, etc. Actual founders have already surpassed these problems and either do not see them as a pitfall anymore because this particular potential failure is already mostly overcome or retrospectively they do not see it as such a big problem as expected.

**Team:** Problems with the team of founders or owners experiences an increasing prominence along the funnel. Participants in funnel steps 0 and I see the importance of those pitfalls below average. Participants in funnel step II rate it roughly on average, compared to all other potential failure reasons, with 18% of them rating it crucial compared to 17% mean selection of a random failure reason. For survey participants in funnel steps III and IV worries about problems in the team clearly gain significance. 30-33% of these entrepreneurs rate it as a main cause for failure. Interpreting this circumstance leads to the assumption that these entrepreneurs already faced conflicting team situations either in the planning and formation process or in the running startup. It seems normal that in situations of such an intense collaboration with sometimes long working hours, high involvement and probably emotional stirring, first conflicts start arising and have to be coped with. These experiences could explain the worries about team problems as failure causes.

**Size and growth:** Problems with growth or a subcritical size of the company are of quite high rank for the early entrepreneurs in funnel step I and II (20%, 24%). However, they are only of minor importance for the advanced entrepreneurs in funnel step III and IV (13, 16%). This could be because they only selected a business model which does not have unfeasible requirements on size and growth in its startup phase. Another reason could be that they already managed to establish required partnerships or gained sufficient funding for either the

desired growth path or to survive the dry spell of subcritical size. It could also be that they experienced that a slow and steady course also leads to their target and are disillusioned of overambitious growth scenarios.

**Others:** As shown in the section above, the remaining potential failure reasons are of below average prominence. Though, for some funnel steps they reach a significant rank. Participants in funnel step 0, who cannot image founding a company, would see problems with accounting, industry experience and expertise of the founder and business planning, if they did in spite happen to found a company. Survey participants in step I who could actually imagine starting a business, consider private and health problems of the founder and accounting of high importance. In funnel step III hostile social and political developments seem to be an issue and in funnel step IV entrepreneurs are worrying about their private and health problems.

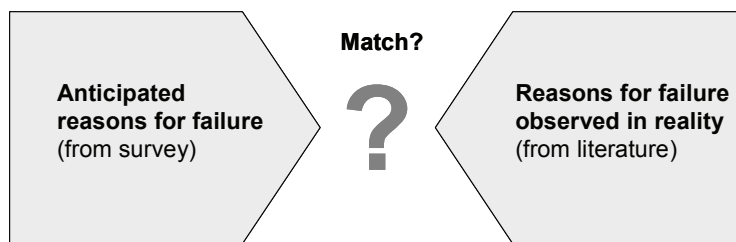


The percentage shows the mean of the number of survey participants who selected the given failure reason.

**Fig. 51:** Overview of anticipated failure reasons of potential entrepreneurs for each funnel step

### 7.2.2.3 Match of actual and anticipated failure causes

The following section will bring the insights from the literature review and from the empirical survey together. It will compare the failure reasons observed in reality based on the studies from the literature research with the anticipated failure reasons potential entrepreneurs fear based on the survey of this research endeavor.



**Fig. 36:** Comparison of anticipated failure reasons from survey with real failure reasons from literature

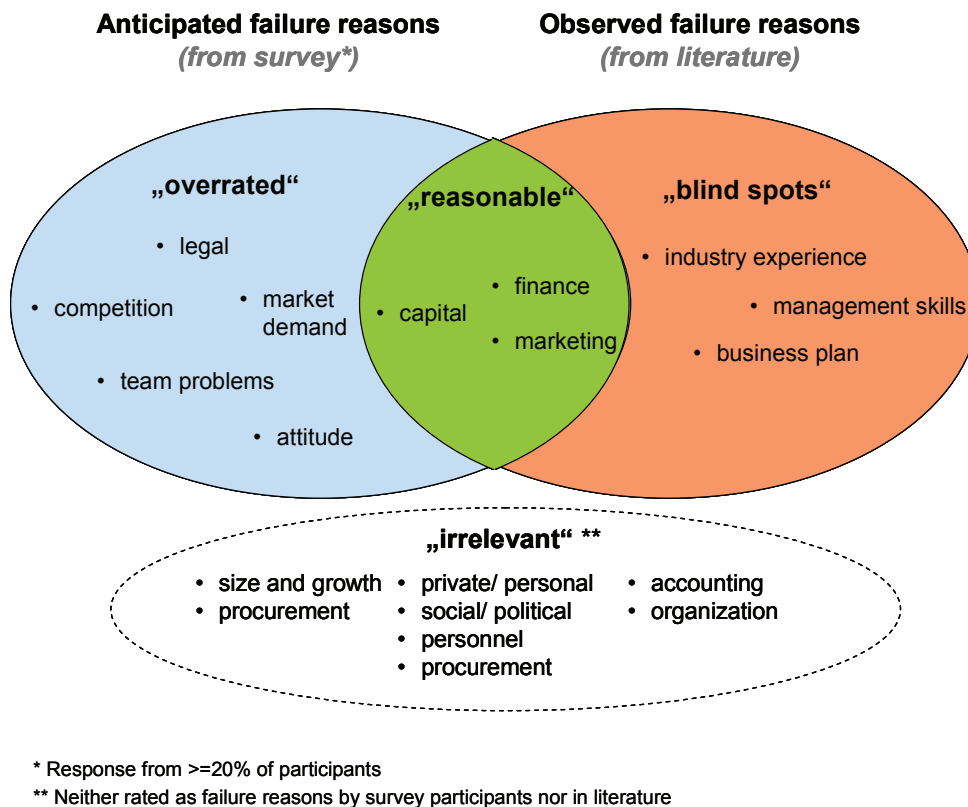
The aim of this comparison is to evaluate the following hypothesis:

#### Hypothesis 2a:

The reasons why their corresponding ventures might most likely fail, which potential entrepreneurs anticipate before founding, do not entirely match actual empirical observations of the most common reasons for failure of startup companies.

The previous sections presented the order of importance of the failure reasons both based on literature review and on the survey data of potential entrepreneurs. Comparison of these two orders of importance shows that apart from the matching reasons (“reasonable reasons”), there are also “overrated reasons” and “blind spots”. The remaining potential failure reasons that neither lead to failure in reality nor are feared to be important before foundation will be labeled “irrelevant”. The following figure will illustrate the failure reasons in the above categories.

The mismatch of the failure reasons that can be observed in reality and those anticipated by potential entrepreneurs proves hypothesis 2a true.



**Fig. 52:** Comparison of possible failure reasons observed in reality (based on literature review) and anticipated by potential entrepreneurs (based on empirical survey)

#### 7.2.2.3.1 Presentation of reasonable reasons and interpretation

As mentioned above, despite the differences for many reasons, there are also some failure reasons that match in their importance between the ex-ante view of potential entrepreneurs and the ex-post view of researchers investigating actual company failures. This fact confirms the following hypothesis:

##### Hypothesis 2b:

Potential entrepreneurs anticipate certain reasons to be responsible if their venture should fail, which match actual empirical observations of the most common reasons for failure of startup companies (existence of “reasonable reasons”).

Based on the above comparison, these reasons are especially problems with marketing, capital endowment of the startups and fulfillment of the finance function, e.g., costing, investment planning and liquidity management.

It does not seem too surprising, that marketing and capital are both ex-ante feared as well as ex-post observed failure reasons. Apart from the fact, that these two areas seem to be quite

obviously important for companies in general but startups in particular, they are also closely interlinked with the definition of failure itself (Watson & Everett 1993; Fallgatter 2005) and the consequences of failure causes. As discussed above, failure is often defined based on the financial situation of the company like liquidity and profits. The least arguable definition of business failure is bankruptcy and following liquidation (Watson & Everett 1993; Fallgatter 2005). Obviously this is interlinked with capital endowment. In the end, insolvency cannot happen, when sufficient capital is (still) available. Capital equipment also allows the flexibility to turn around a company that is on the wrong track. Sufficient capital principally allows degrees of freedom to avoid failures. Marketing is also very closely linked to the measures of success and failure, since the direct outcomes of marketing efforts are revenues and, together with pricing, profits. Missing profits is often also a direct or at least indirect measure of business failure. If a company achieves to generate sufficient revenues with the pricing required to be profitable, failure does not seem to be likely. Since achieving sufficient sales as well as enforcing the required pricing falls into the area of marketing, it is not surprising, that it is considered an important failure risk both for potential entrepreneurs and actually failed founders.

What seems to be more surprising, is that the fulfillment of the finance function is a pitfall for startup companies, that is already commonly feared before foundation. It seems understandable, that problems in the area of finance can cause problems and in an extreme case failure of companies. Problems in keeping costs and liquidity under control can obviously be problematic. The question is, why potential entrepreneurs fear to have these problems even before foundation. A reason could be that entrepreneurs themselves might often not be acquainted with finance in detail. Potential founders usually start thinking of their prospective business with an innovation, which is usually an innovative or imitated idea of a product or a service (Brixy et al. 2011). In some cases, it might also be a process innovation, e.g., concerning production of goods or services. In these cases the thoughts, researches and competencies of the entrepreneur might circle around the direct value chain of the product of service offering, e.g., procurement, production and marketing. Parts of the value chain that are indirectly connected to the product, like legal, finance or accounting might not be the key competency of the entrepreneur. However, out of the many indirect value creating functions, the potential entrepreneur might identify finance to be crucial. The combination of identifying the area as important and not being knowledgeable about it, might lead to fear of it. There might also be other reasons for this observation that can be speculated about. It could also be that finance is considered a “hard skill” that seems to be about clear facts that one either

knows or does not know. Other functions, like marketing or human resources are often considered more “soft skills” where people impute themselves sufficient intuitive skills to at least make ends meet. This can be also observed in the results of the survey questions concerning the self-estimation of competency in different business functions on a Likert scale from 1 (“very poor”) to 7 (“very good”). The survey participants rated their own skills and knowledge in areas that seem to be more “soft skill”-like (e.g., organization, social skills, and management skills) significantly higher than areas that seem to be more “hard skill”-like (e.g., finance, procurement and accounting). It seems questionable if this represents their actual knowledge and experiences.

Competency area	Mean	N	STD
organization	5.77	304	1.13
social	5.55	304	1.30
management	5.50	304	1.12
industry	5.03	304	1.32
marketing	4.84	304	1.50
finance	4.40	304	1.68
procurement	4.28	304	1.48
accounting	3.58	304	1.62

**Fig. 53:** Overview of self-estimation of competencies in different business areas

#### **7.2.2.3.2 Presentation of overrated causes and interpretation**

Overrated reasons are anticipated to be important failure causes by potential entrepreneurs before founding, but are not observed to cause significant business failure in reality. The comparison at the beginning of this section identified some of these reasons and therefore confirms the following hypothesis:

##### Hypothesis 2c:

Potential entrepreneurs anticipate certain reasons to be responsible if their venture should fail, which cannot be observed in actual empirical observations of the most common reasons for failure of startup companies (existence of “overrated reasons”).

The reasons which are overrated by potential entrepreneurs lie in the areas of problems with market demand, plagiarism or too strong performance of competitors, issues with the attitude of the founders, like risk awareness, will or stamina, problems with legal issues and insolvable disputes within the team of founders, managers or owners.

It is very interesting why missing market demand is a feared failure reason for potential founders but no real reason for business failures. This can be interpreted in the following way. Potential entrepreneurs might be very focused on their business idea and convinced of the product or service they plan to offer. This passion and conviction generally is a good thing (Cardon et al. 2009), as it is a great motivation to start the business and work on its success with full energy. However, in reality business ideas rarely develop exactly as they were planned initially. Many startups have to modify their offering based on the experiences or new developments while they are in operation. Some even have to change their business model completely and have to shift to “Plan B” (Mullins & Komisar 2009). That might also be a reason, why investors often consider the team more important than the business idea. Prior research confirms the founder(s) to be the main driver of success (Brüderl et al. 1992; Bates 1990; Jo & Lee 1996; Markman & Baron 2003; Stuart & Abetti 1990; Herron & Robinson 1993; Chandler & Hanks 1994; Storey 1994; Brüderl & Preisendörfer 2000; Lee & Peterson 2000; Colombo & Grilli 2007; Freiling & Wessels 2010). A good team manages to adapt or change a business idea which does not prove to be successful. Therefore market demand changes its role. In this way of thinking, it is no longer a given external factor, but in fact a residual of the product offering and marketing efforts. Wannabe founders might not have this view yet, either because of lacking experience or because of distorted beliefs, driven by their passion and conviction of their business offering idea. As opposite, researchers who examine failed companies might identify other reasons for lacking market demand. Marketing might have missed to design the product upon the needs of market demand, to communicate and distribute it accordingly or to sell it at the right price point.

Another overrated failure reason is about competition. Potential entrepreneurs fear that their idea could be copied, once they are on the market, or the competition generally proves to be too strong. However, in reality competition is usually not the cause of failure. The fear of the competition before founding can be interpreted in a similar way to the problems with market demand. The wannabe founders might be too focused on their concrete product or service offering and too convinced of its ingeniousness. They might ignore the importance of implementation. Often, successful startups feature a product which is not a major innovation (Brixey et al. 2011) but is just executed in a brilliant way. Sometimes, it is just another solution for an existing problem or demand, but just a bit more useable and convenient or just marketed in a different way. In reality founders might find, once they started their business, that in most cases the implementation is at least as important as the idea. They might



also find that they overestimated the capabilities of the competitors and that they also only “put their pants on one leg at a time”.

Other overrated reasons are connected to the attitude of the founder (like risk awareness, will or stamina), or conflicts within the team of founders, managers or owners. While these reasons can in some cases be problematic, they are not within the most common failure causes according to literature research (e.g., Freiling & Estevão 2005; Fallgatter 2005; Hansen 2009; Freiling 2009a; Brüderl et al. 1992). There could be different reasons for this observation. It might be that in reality the team members are less replaceable than the founders think. Usually investment contracts are designed in a way, that unresolvable conflicts do not automatically ruin the whole endeavor. Often there are clauses to replace team members, for example. Another reason could be that it is likely that conflicts in the team go along with general trouble of the company. If the business is developing well, it is very likely that every participant is sufficiently happy not to risk spoiling the success with excessive conflicts. It is hard to imagine a business that goes down due to unresolvable dispute among the founder team or the investors, for example because an already satisfying growth is not fast enough. Vice versa, if the company is in trouble there seems to be an urging necessity to resolve problems within the team. If the business is about to fail anyways, it might be easier for a disturbing team member to agree to leave the team or for team members to find compromises. Also, in cases where team conflicts arise from problems in the company, the originate cause of the failure are not the conflicts themselves, but they are rather an effect of prior problems.

Why problems with legal issues, like lawsuits with competitors or problems with intellectual property is an overrated problem by potential entrepreneurs can only be speculated about. A reason could be that this area just is a black box for entrepreneurs without a judicial background. It could cause a certain discomfort among the potential founders that they are aware of the potential importance of this area but they do not have any knowledge about it.

#### **7.2.2.3.3 Presentation of blind spots and interpretation**

Reasons which are responsible for business failure in reality in many cases, but are not anticipated to be important by potential entrepreneurs before founding, can be considered blind spots of the founders. Since the comparison at the beginning of this section revealed that some of these blind spot reasons do exist, the following hypothesis can be regarded confirmed:

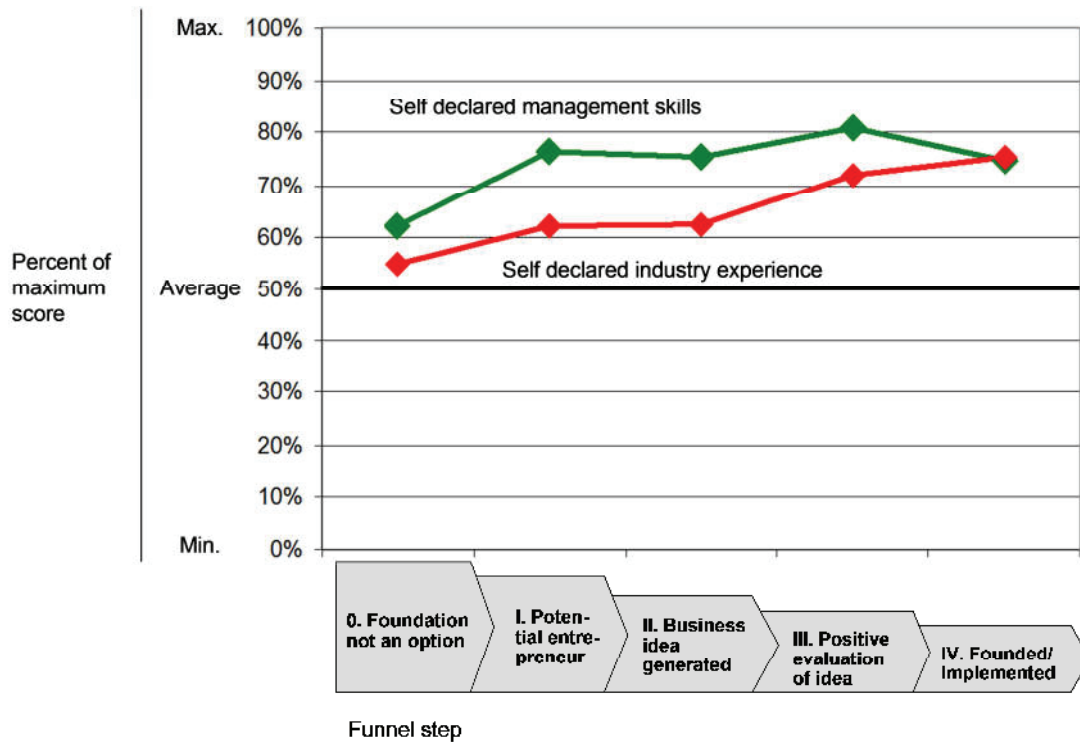
### Hypothesis 2d:

Potential entrepreneurs do not anticipate certain reasons as a likely cause if their venture should fail, which however can be observed in actual empirical observations of the most common reasons for failure of startup companies (existence of “blind spots”).

The most important reasons in this category are management skills of the founder(s), lacking industry experience of the founder and problems with business planning. Interestingly enough, the skills and knowledge of the founder according to management and the industry is among the top three failure causes that can be observed in reality (references see fig. Fig. 47, Fig. 48). Problems with business-planning makes it at least in the top five (references see fig. Fig. 47, Fig. 48). This fact makes it especially surprising as well as alarming that these failure reasons are not on the radar of potential entrepreneurs before foundation at all.

Again there could be many reasons for that. A likely reason might be that potential entrepreneurs overestimate their own management skills and their expertise in the industry of their undertaking (Cooper et al. 1988). The survey supports this assumption. The self-declared competencies in the area of management skills and industry experience of potential entrepreneurs are beyond average. Survey participants who do not consider a foundation as an option (step 0 in the Entrepreneurial Funnel) rate their industry experience with 55% (4.28 at a Likert scale from 1 to 7) and their management skills with 62% (4.72 at a Likert scale from 1 to 7) quite on average. The further the survey participants progress in the Entrepreneurial Funnel, the higher their confidence in their own abilities rises. For survey participants who have already positively evaluated their ideas, the self-estimation of their industry experience reaches 72% (5.32 on the Likert scale 1-7) and their management skills 81% (5.86 on the Likert scale 1-7). For participants who already founded a company, both self-estimations reach 75% (industry experience 5.51 and management skills 5.48 on the Likert scale 1-7). These observations could theoretically be explained by a selection bias. In this case, only the individuals with high management skills and industry experience would progress into the next funnel step. This could only be finally proved by a longitudinal study. However, this explanation can be doubted. It is much more likely, that the same individuals gain confidence as they progress through the funnel towards foundation. Since reality shows that startup businesses often fail due to lacking management skills and industry experience of their founders (references see fig. Fig. 47, Fig. 48), it also seems to be very unlikely that startup founders are indeed so much more competent in these areas than comparable individuals. Therefore, it can be assumed that potential entrepreneurs overestimate their competencies in

management skills and industry experience and hence do not consider these areas as potential pitfalls leading to failure of their businesses. This interpretation is in line with findings from literature that founders are more optimistic than others, even though they are not more qualified than others (Cooper et al. 1988).



**Fig. 54:** Self-declared management skills and industry experience along the Entrepreneurial Funnel

The same overestimation of the personal skills (Cooper et al. 1988) might apply to the business planning. While 19% of the survey participants who do not consider foundation an option (step 0 in the Entrepreneurial Funnel) see problems in business planning a potential cause of failure, not a single survey participant (0%) who already positively evaluated his/her business plan considers it possible to fail due to poor business planning. Again, this fact can lead to the assumption that potential founders drastically overestimate their own planning due to overconfidence (Cassar 2010; Forbes 2005; Cooper et al. 1988; Koellinger et al. 2007; Arenius & Minniti 2005). It could be that this overconfidence amplifies the potential danger that lies in business planning. Founders might become too uncritical about their own planning and refuse to review and update the planning to match the current developments. This behavior could be reinforced by the dialogues founders have to hold with investors or capital markets, customers, the press, etc. Research shows, that especially venture capital investors are often overconfident themselves (Zacharakis & Shepherd 2001). All these stakeholders might want to hear good news about the company and a plan which leads to a ‘golden future’

– in the end, all of these stakeholders have to be convinced of the current or future success and trustworthiness of the company. This requirement for the founders to spread good messages and convince third parties of the future success of the company might influence the founders themselves to believe in the optimism and the accuracy of their planning. Also common human cognitive distortions could influence the evaluation of the planning, after it is done. For example, due to the “post-decisional bolstering” (Cooper et al. 1988), decision makers “tend to bolster or exaggerate the attractiveness of an option after it has been chosen” (Cooper et al. 1988). This bias systematically compromises the entrepreneurs’ ability to accept criticism according to their planning.

#### **7.2.2.3.4 Presentation of irrelevant causes and interpretation**

Even though, due to the high number of businesses that have ever failed, most likely all thinkable reasons lead to one or more failures in history (Fallgatter 2005), there are some reasons which do not seem to be very likely. Hardly any of the reviewed studies mention these potential failure causes (references see fig. Fig. 47, Fig. 48). The survey participants had a realistic assumption of the importance of these reasons and did not consider them particularly dangerous as well. Since both, the entrepreneurs and the research studies agree on the minor importance of these causes, they can be considered irrelevant. Reasons in this category that were prompted in the survey were problems with subcritical business size or growth, private or personal problems like health problems, problematic social or political developments, problems with the labor market or the workforce and problems with suppliers or procurement. Issues in the business functions of accounting and taxation and organization can be considered quite irrelevant as well, however a few research studies mention these areas as potential pitfalls for startups.

Problems with the growth speed seem to be luxury problems. A company would most likely only get problems about fast growth, when it is already quite successful. Problems with a subcritical company size are probably taken into account when planning the business already. Usually a startup starts from the scratch and hence plans with an initially very small size. The business functions procurement and HR do not seem to be critical functions for most of the startup businesses. Since many startups might operate in the area of online retailing (Mulpuru et al. 2011), procurement should generally be important for them. Possibly, in this field, the sales channel performance is more crucial for the success than procurement. Harmful social and political developments seem to be less important in countries with stable governments

and structures. It could be that problems in this area are of higher threat in developing countries (Li et al. 2006). Private and personal problems are not regarded a potential pitfall as well. Possibly, the private and professional life are regarded as two separated areas, where especially the private one should not interfere too much with the professional one. Most entrepreneurs do not consider problems in the business functions accounting and organization as particularly dangerous for their business. However, some studies (references see fig. Fig. 47, Fig. 48) see this differently. Since these studies are very few, those areas can be regarded irrelevant rather than blind spots. It could be that in special occasions, these areas can be fatal, when they go wrong. These cases seem to be quite rare, though, and are not on the potential entrepreneurs' minds.

#### **7.2.2.4 Implications of a realistic assumption of failure reasons**

The previous section showed that the anticipated failure causes and the failure causes observed in reality do not entirely match. This section will elaborate on the association of a certain selection of anticipated failure causes and fear.

#### **Methodology**

To do so, variables were coded for each survey participant with the number of failure reasons he/she selected in the categories resulting from the match between anticipated reasons and actual reasons, as presented in the previous section. Reasons which in reality lead to entrepreneurial failure represent two categories. In the first category are “reasonable reasons”, which are also anticipated, in the second are “blind spots”, which are not anticipated. The other reasons, which are not observed to be very frequent in reality, are divided into two categories as well. The ones which are anticipated, even though they do not often occur in reality are labeled “overrated reasons” and the ones which are neither expected nor happen in reality are labeled “irrelevant reasons”. One variable was coded for each of the four categories with the number of failure causes, each survey participant selected from this group. An additional variable was coded with the total number of failure causes selected and a further with the total number of selected failure causes that occur in reality. These six variables were then used in a correlation analysis with the variables according to fear of foundation and fear of failure. The correlations should identify whether there is a connection between the overall amount of anticipated failure causes or the accuracy of the estimation of failure causes with actually occur in reality.

## Observations

The results of the analyses show surprising associations. First of all, the more expected failure causes – independently whether realistic or not – come to mind of the survey participant, the more fear of founding a company he/she has, but not necessarily more fear of failure. The correlation is highly significant (correlation coefficient 0.145, significance level  $p \leq 0.01$ ). Second, the more failure causes, which actually happen in reality, are anticipated, the more fear of foundation (correlation coefficient 0.174, significance level  $p \leq 0.01$ ) and the more fear of failure a participant experiences (correlation coefficient 0.127, significance level  $p \leq 0.05$ ). The same applies for both the subcategories of “blind spot” (correlation coefficient 0.110, significance level  $p \leq 0.05$ ) and “reasonable” reasons (correlation coefficient 0.149, significance level  $p \leq 0.01$ ). “Blind spots” can be interpreted as those realistic reasons that most potential entrepreneurs are not aware of and “reasonable” reasons as those that most are aware of. According to fear it does not seem to make a difference, whether an individual fears a commonly recognized or a widely ignored failure cause, as long as it does happen in reality. Interestingly enough, the failure causes, which do not happen in reality are not associated with higher fear, even though many entrepreneurs do not know that they do not happen in reality and still consider them rather likely. If a participant selected a high number of “overrated” or “irrelevant” reasons, which do not lead to failure in reality, he/she did not show any higher fear. The corresponding correlation coefficients, which are not significant, are shown in the bottom two rows in the following figure.

<b>Correlations</b>	<b>Fear to found a company</b>	<b>Fear of failure after founding</b>
Total number of failure reasons selected	.145**	.101
Number of reasons selected, which in reality (based on literature) lead to failure	.174**	.127*
Reasons, which in reality lead to failure		
Number of "blind spot" reasons selected	.110*	.099
Number of "reasonable" reasons selected	.149**	.097
Reasons, which do not lead to failure in reality		
Number of "over-rated" reasons selected	.062	.051
Number of "irrelevant" reasons selected	.020	.011

\*\* Significance level  $\leq 0.01$

\* Significance level  $\leq 0.05$

**Fig. 55:** Correlation between estimations of potential failure causes and fear

## Interpretation

Unfortunately, there is no prior research available, which connects the anticipated failure causes to the amount of fear of a potential entrepreneur that could give hints for the interpretation of the findings above. The fact that a high number of anticipated failure causes lead to higher fear might be interpreted in different ways. The obvious interpretation would be that the entrepreneurs, who are aware of many pitfalls that can happen, are afraid to dare to found because of those worries. Otherwise, since the analysis only reveals a correlation, not a causality, the number of failure causes, no matter if real or not, could also just be a proxy for the amount of fear a participant feels. If somebody has a lot of fear, he/she might think of many things that could go wrong. That would mean that it is not the many anticipated failure reasons, which cause fear, but that the many anticipated failure reasons are just an expression of high fear. The number of failure reasons could therefore be interpreted as an indirect question for the amount of fear.

Interestingly, only the actual reasons of failure lead to higher fear of foundation. The reasons for that can only be speculated about. It could be that entrepreneurs have a certain implicit feeling of what is really important and what not and hence do not face particularly high fear, when they anticipate minor failure causes. It could also be that some of the frightened survey participants just ticked off a few other failure reasons in the survey while they saw them, additionally to the ones they were initially afraid of. Then the additionally ticked-off reasons would rather measure a certain response behavior to surveys or a behavior to cope with fear, than actually measure the amount of fear. However, this would imply that only the unrealistic failure causes were subject to impulsive selection, which does not seem plausible. A third interpretation would be that there is a certain group of participants with generally confused evaluations and high self-confidence (“ignorant narcissists”). They could not have a clue of which reasons are really relevant neither would they be afraid to found or fail. It could also be an opposite group of participants who are well informed about the empiric failure causes of businesses but are highly afraid of founding a company (“intellectual cowards”). They would hit the actual failure reasons with high accuracy and show high fear and would hence drive the average fear of participants selecting the real reasons up.

Another interesting finding worth speculating about is that some variables only influence the fear of founding, but not the fear of failure. However, this could just be a statistical



phenomenon. The reasons which happen in reality are just the sum of the party “blind spots” and “reasonable” reasons. However, the sum of the parts shows both a significant correlation with fear of foundation and fear of failure. Since the parts do not show both correlations, it could simply be that the sample size was not sufficient to reach statistical significance with these subsets. According to the number of total failure causes selected and the number of real failure causes selected, it could be that people who generally expect that many things can go wrong in entrepreneurship, no matter whether realistic or not, are also afraid but do not necessarily have the intention to found a company. Since they do not concretely consider a foundation, they might just not have thought about failing with a potentially started company. Others, who tend more to becoming an entrepreneur might have already gathered some knowledge about this topic and hence have a higher accuracy of hitting the real failure reasons. Since they tend more to founding a company, they might have engaged in thoughts about a potential failure and subsequently developed fear of failure. Nevertheless, this interpretation seems hypothetical, as the tendency towards entrepreneurship should be measureable by the funnel step the survey participants are in (e.g., step 0: *Foundation not an option* vs. step I: *potential entrepreneur*). However, regression analysis shows that fear of failure causes fear of foundation across all funnel steps. Therefore there should be no difference between these two groups according to the relationship between fear of foundation and fear of failure.

Since some interpretations of these observations come back to assuming distinct groups of individuals (e.g., “ignorant narcissists” or “intellectual cowards”), the following section will aim to identify if it is possible to cluster certain groups according to the number of selected failure reasons and the assessment of their actual relevance.

#### **7.2.2.5 Influence of the individual attributes of an entrepreneur on the accuracy of the estimation of failure reasons**

The following section will investigate whether certain attributes of an individual have an influence on the amount or quality of anticipated failure causes. To do so, the variables representing the number of selected failure causes in each of the categories, as described in the previous section, were used in a correlation analysis together with the personal attributes of the survey participants. Figure 56 presents the results of the analysis. The highlighted numbers show significant associations of the variables. A negative correlation coefficient expresses the according attribute is associated with less selected failure causes in this



category. As described in the previous section, the category “real reasons” is divided into the subcategories “blind spots” and “reasonable reasons”, whereas the subcategories “overrated reasons” and “irrelevant reasons” represent the reasons which do not occur frequently in reality. Selecting more of the real reasons (no matter if from the category “blind spots” or “reasonable reasons”) indicates a more realistic view on the actual pitfalls, whereas a selection of “overrated” or “irrelevant” reasons indicates misjudgment of the importance of the failure causes.

Correlations	all_reasons	real_reasons	blind_spots	reasonable_reasons	overrated_reasons	irrelevant_reasons
Funnelstep	-.049	-.065	-.030	-.064	.023	-.057
Will_wannabe	-.001	-.022	-.029	-.008	.018	-.006
Will_admire	-.032	-.069	-.047	-.057	.015	-.003
Will_reputation	.092	-.004	.009	-.011	.155**	.001
Age	.004	-.078	-.113*	-.023	-.042	.119*
Sex	-.009	.015	-.043	.048	.000	-.016
State_east_west	-.054	-.050	-.063	-.021	-.012	-.045
Education	-.038	-.075	-.032	-.074	.016	-.028
Languages	.004	-.009	.012	-.019	.020	-.011
Salary	-.047	-.135*	-.127*	-.087	.041	-.008
Work_experience	-.027	-.100	-.118*	-.048	-.055	.107
Leadership_Experience	.006	-.081	-.128*	-.017	-.046	.139*
Education_ranking	-.187**	-.175**	-.112	-.147*	-.031	-.143*
Qualification_ranking	-.174**	-.211**	-.189**	-.142*	-.023	-.058
Score_competencies	-.207**	-.208**	-.213**	-.122*	-.051	-.094
Competency_management	-.141*	-.160**	-.117*	-.125*	-.003	-.073
Competency_industry	-.117*	-.198**	-.203**	-.115*	-.043	.026
Competency_finance	-.153**	-.208**	-.175**	-.147*	.056	-.126*
Competency_social	-.022	-.035	-.034	-.022	-.018	.039
Competency_organization	-.097	-.075	-.108	-.022	-.014	-.064
Competency_marketing	-.035	-.009	-.040	.015	-.043	.016
Competency_accounting	-.173**	-.098	-.077	-.072	-.101	-.093
Competency_procurement	-.133*	-.100	-.151**	-.026	-.050	-.103

\*\* Significance level  $\leq 0.01$

\* Significance level  $\leq 0.05$

**Fig. 56:** Influence of attributes of entrepreneurs on their estimation of potential failure causes

An interpretation of the results of the correlation analysis suggests that there are indeed certain associations between personal attributes and anticipated failure causes. The first insight is that the funnel step the survey participant is in, has no connection to the quantity or quality of anticipated failure reason. That means that a person who cannot imagine founding a company at all generally has the same feeling of the entrepreneurial pitfalls as a person who is just about to found a company. Going along with that, the motivation of becoming an entrepreneur hardly has an influence on the estimation of failure reasons. People who dream of being an entrepreneur do not select more or less failure reasons and are not more or less realistic about what could happen. This is an interesting insight, since the entrepreneurial

motivation is both an important driver for fear and for the probability to actually found a company (Shane et al. 2003; Cardon et al. 2005; Baum 1994; Baron 2004). Also socio-demographic attributes do not show strong connections to the amount or quality of anticipated failure causes either. The level of education is not associated with the number of accuracy of anticipated failure causes. Better educated potential entrepreneurs have neither a more realistic estimation of what could go wrong, nor more reasons in mind, which could cause failure. The existence of the character type of the “intellectual coward”, which was assumed in the previous section, therefore cannot be confirmed. It is also surprising that for example the sex of a person does not have an influence on the number of expected failure causes. Since women generally are more susceptible to fear (Zahn-Waxler et al. 1996), one could think they would also imagine more things that could go wrong. According to the above analysis, this is not the case. The personal attributes associated with experience, general work experience, leadership experience and achieved salary, are associated especially with “blind spot” reasons. This makes sense, when looking into the reasons categorized as blind spots. As shown in section 8.2.3 the “blind spot” reasons are mainly according to industry experience, management skills and business planning. These happen to be reasons, which are directly addressed by the according personal attributes. It is indeed understandable that people with many years of leadership experience have a lower chance of failing in a company due to a lack of management skills, out of a human capital argumentation (Becker 1975; Davidsson & Honig 2003; Bates 1990; Werner 2011; Hatch & Dyer 2004; Pennings et al. 1998; Cooper et al. 1994). Therefore this group of entrepreneurs does not anticipate this area as a likely failure cause – for good reason. Since experience is likely to be associated with age, this would also explain the lower number of selected “blind spot” reasons for older participants.

Personal attributes with a high association with the quantity and quality of expected failure causes are those connected to self-estimation of the own skills. The following three kinds of self-estimations have a significant influence on the number of selected potential failure causes: (1) the self-estimation of how good the own performance in the highest level of education was compared to the classmates, (2) the self-estimation of the qualification to be an entrepreneur compared to the other entrepreneurs and (3) the self-estimation of the competencies in various business functions compared to others. The overall self-estimation of competencies are a calculated score from eight separate competencies. Interestingly the top two blind spot areas “management skills” and “industry experience” both have a strong connection with the according individual attributes. Survey participants who have a high estimation of their own skills generally select less potential failure causes. This could be

interpreted in two ways. Either, these participants are indeed more qualified than others and since have less to be worried about, or they are way too optimistic both about their own skills and the challenges that come with starting a company. Since there is no correlation between objective measures of qualification, for example education, it is likely, that the second interpretation holds true and these potential entrepreneurs overestimate their own skills as well as the chances of entrepreneurship (Cooper et al. 1988). The lower number of expected failure causes going along with higher self-estimation of the own skills, is majorly at the expense of those failure reasons, that can be observed in reality. People who think they are more qualified than others (though there is no objective proof that they actually are) select less failure causes that are objectively frequent in reality, whereas no change in the number of failure reasons, which do not often occur in reality can be seen. The accuracy of their prognosis is hence worse than the one of others. Not anticipating realistic failure reasons makes them “blind spots”, by definition. Actually there seems to be a group of entrepreneurs with unfounded, but very high self-confidence and also unconsciousness of the real pitfalls that come with starting a company – the “ignorant narcissists”. The more convinced of themselves they are, the more they misjudge the situation.

### **7.2.3 Summary of results and implications**

The results presented in this section suggest certain implications to encourage entrepreneurial activity and to improve its success chances. There is a mismatch of the failure causes which are anticipated and which can be observed in reality. There seems to be a distorted estimation of the actual pitfalls among potential entrepreneurs, which suggests a better entrepreneurial education to convey them a more realistic picture of potential failure sources. Both the “blind spots” and the “overrated reasons” have a special importance here. “Blind spots” are dangerous, since it can be assumed that pitfalls are even more dangerous if the founders are not aware of them. Especially academic education could make a valuable contribution here and create awareness as well as prevention and solution approaches of the so far commonly unrecognized pitfalls. The “overrated” failure sources cause fear for no reason and therefore potentially prevent promising foundations. Generally a higher number of anticipated failure reasons, especially realistic ones, causes a higher fear of failure, which again causes higher fear of founding a company. Better education could again improve this situation and present a more realistic view to encourage entrepreneurial activity. Apart from academic education, also investors, business angels, incubators, etc. could contribute in this area. They could not only teach a realistic picture of common failure reasons, they can also actively help to avoid or to

cope with them. They could for example help to fill managerial shortfalls in the founder team (Freiling 2009a) or provide valuable knowledge.

The analyses also identified a group of entrepreneurs with high confidence in their own skills, even though they objectively do not have any higher qualifications than others, but a very low accuracy in anticipating realistic failure causes. Entrepreneurs in this group are particularly at risk, because they overestimate themselves and underestimate the real threats. This group needs particular help to get a realistic view of the own skill and the real risks of their entrepreneurial endeavors.

### 7.3 Empirical findings about the connection between the entrepreneurs' profiles and their success chances in the steps of the Entrepreneurial Funnel

The following section will take a closer look at entrepreneurial profiles and their influence on fear and will establish a connection between personal attributes of entrepreneurs and their success in certain funnel steps. The funnel steps in focus are steps III ("Positive evaluation of idea"), IV ("Founded/Implemented") and V ("Profitable") and hence according to the entrepreneurial profiles it should be investigated which groups of entrepreneurs (a) face the most fear, (b) which do actually found companies and (c) which achieve to make them successful.

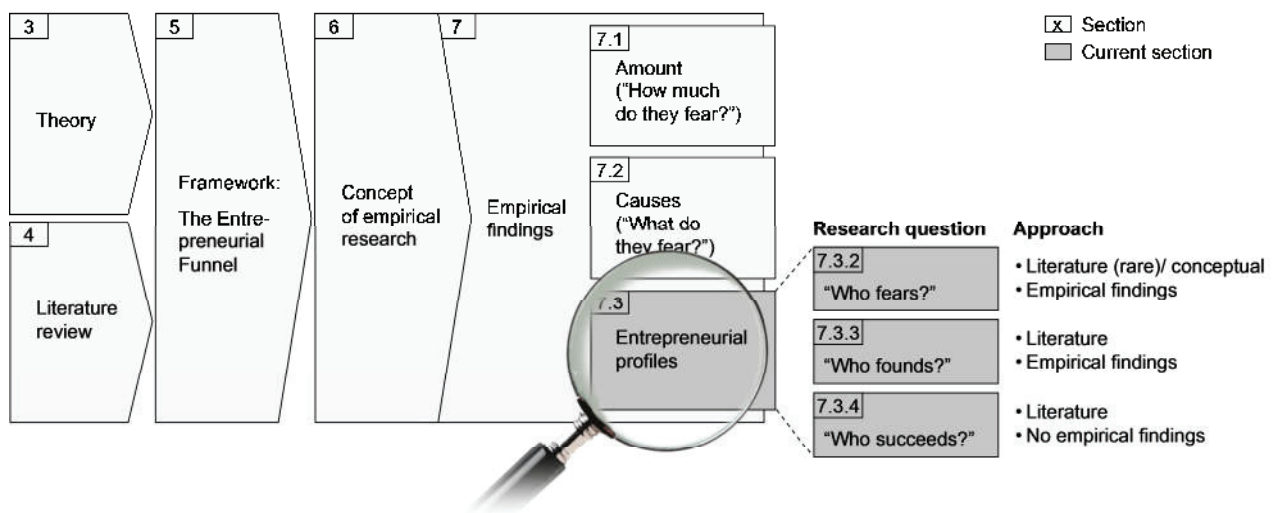


Fig. 57: Structure of this research study with highlighted current section

These attributes of the entrepreneurs in those groups will then be compared, to find similarities, for example if the same group of founders faces high fear but despite has a high chance to make a venture successful, once founded. Since fear of failure is in particular focus of this study, the empirical survey aims to validate the following hypotheses on entrepreneurial profiles according to fear.

#### Hypothesis 3a:

Potential entrepreneurs can be clustered according to certain attributes into groups with different amounts of fear.

#### Hypothesis 3b:

A high competence (skill) profile of a potential entrepreneur will lead to a higher amount of fear of failure.

#### Hypothesis 3c:

A low motivation (will) profile of the potential entrepreneur will lead to a higher amount of fear of failure.

### **7.3.1 Overview of approach**

The success of entrepreneurs in the three funnel steps III (“Positive evaluation of idea”), IV (“Founded/Implemented”) and V (“Profitable”) will be investigated and connected to the personal attributes of the individual entrepreneurs. The aim is to establish a connection between individual attributes of an entrepreneur and success in a certain funnel step. This would allow a prognosis whether a founder will be successful in a particular funnel step, based on his/her personal characteristics. This study mainly focuses on funnel step III (“Positive evaluation of idea”) and the subsequent question, which personal attributes of entrepreneurs are correlated with high amounts of fear. Empirical evidence from the conducted survey will answer this question. To investigate which personal attributes lead to success in funnel step IV (“Founded/Implemented”), insights from existing research as well as from the conducted survey will be utilized. This will answer the question, what the common characteristics of individuals are, who actually do found companies. Finally, the entrepreneurs in funnel step V (“Profitable”), who achieved to make their respective companies successful, will be studied. The aim is to find out whether this group of entrepreneurs has certain shared attributes, which distinguish them from the base population and hence allow a forecast, who will be successful and who will not.

Once the attributes connected with success are identified individually for each of the three funnel steps, they will be compared. This is, to find out if the subsequent funnel steps share the same success factors according to entrepreneurial attributes, or if there are particular entrepreneurial profiles which are successful in certain funnel steps, but not others.

### **7.3.2 Who fears? The influence of individual attributes on fear**

The following section will focus on the question which personal attributes describe entrepreneurs with a higher amount of fear. As this question is in special focus of this study and there is rarely any existing research on this special topic, it will be evaluated in two steps. The first step is a conceptual, logical discussion of arguments, which attributes could lead to high fear. As the second step, the empirical results will be used to validate these thoughts.

#### **7.3.2.1 Prerequisite: Does fear actually influence the foundation decision?**

Before investigating and comparing the personal attributes of entrepreneurs associated with the steps of experiencing fear, founding a company and making it successful, it has to be discussed whether there actually is a connection between these steps. The second connection seems to be obvious: a company first has to be founded, before it could be made successful. The first connection, between fear and foundation, will be discussed in this section.

There are research studies which show that fear of foundation plays a critical role in the decision whether to found a company or not. Research shows that fear does hinder many potential entrepreneurs from actually founding a company (Welpel et al. 2012; Kelley et al. 2011; Brixy et al. 2011). “Fear reduces exploitation” (Welpel et al. 2012) of entrepreneurial opportunities. Fear can have this hindering influence even though the individual evaluation of the specific opportunity is favorable. Fear can reduce the “impact of evaluation on exploitation” (Welpel et al. 2012). Arenius and Minniti (2005) show in an empirical study that individuals who actually found companies have less fear of failure than non-entrepreneurs. While 38% of not active entrepreneurs face high fear of failure, this share is lower for individuals who plan to found a company (20%), already have founded a company recently (19%) or who are self-employed for more than 3.5 years (21%) (Arenius & Minniti 2005). The effect of fear preventing foundation is especially strong in Germany (Brixy et al. 2011). The reasons for this are not known but it is likely that the social environment plays a key role. In countries with higher entrepreneurial activity, the fear of failure is generally lower. However, it cannot be proven, if this is a causality or just a selection bias. Fear gets an increasing importance, since the overall amount of fear of foundation raised in Germany in the last years (2009-2011) (Brixy et al. 2011).

However, the intensity of the connection between fear of foundation and actual foundation can vary. Women, for example refrain more often from founding a company due to fear than men. According to the Global Entrepreneurship Monitor, 56% of the female but only 46% of the male survey participants refrain from founding because of fear of failure (Brixy et al. 2011). There are also regional differences. According to the survey of this study people in Eastern Germany do not have significantly higher fear of failure (no significance in T-Test of the two mean values of 4.05 for Western Germany and 3.50 for Eastern Germany on a Likert scale 1-7 of fear of failure) but seem to have a stronger hesitance to found a company according to the Global Entrepreneurship Monitor (Brixy et al. 2011). Based on the above discussion, it can be assumed that fear of foundation is indeed associated with the actual probability to found.

#### **7.3.2.2 Conceptual thoughts and backgrounds about the influence of individual attributes on fear**

Due to the lack of existing research literature covering this topic (Goss 2008), this section will mainly focus on the conceptual, logical discussion of arguments, which attributes could lead to high fear. The attributes will be discussed structured in categories according to the economic view (skill), the psychological view (will) and the sociological view (socio-demographics). For the latter it is hard to find a reasonable conceptual argumentation according to the connection between certain attributes, like sex or age, and fear to found a company and there is actually some literature available on this topic. Therefore this section will mainly be based on a literature review.

#### **Conceptual thoughts and logical arguments according to the economic view (Skill)**

The following section will evaluate, if a high skill profile of an individual potential entrepreneur leads to more or less fear out of a logical argumentation. In this context, skill is seen according to qualification for entrepreneurial engagement or engagement in a business environment in general. This includes human capital aspects (Becker 1975; Davidsson & Honig 2003; Bates 1990; Werner 2011; Hatch & Dyer 2004; Pennings et al. 1998; Cooper et al. 1994), according to learnable skills, but also traits aspects, like intelligence (Werner 2011). Therefore high skill is understood as high intelligence, especially in an analytical and social way, a relevant and profound education and knowledge, for example in business studies or in the industry of the venture and work experience and according abilities, especially leadership,



management and self-employment experience (for selection approach of these attributes see section 6.3.5).

For a rational agent, fear of founding a company should be related to the evaluation of the economic risk situation (the bet), since fear of foundation is connected to fear of failure (c.f. findings of this research study in section 7.1.2.3 and Brixy et al. 2011). For this evaluation the input factors, like work and funds, the output factors, like profits, and their respective probabilities have to be compared. Entrepreneurs with a high skill profile, who are coming out of well-paid jobs with admirable career prospects, would have to give up their current occupations to start a company. They have high opportunity costs of their previous or alternative occupations. Not only do they give up their high salary during the time of foundation, they also risk flaws in their careers, should they fail (Ullrich 2013; Landier 2006; McGrath 1999). These opportunity costs are an additional input factor for the economic risk situation they are evaluating, which decreases the attractiveness of the bet. Therefore, to engage in this risk situation should increase the amount of fear, they face. Vice versa, potential founders with a lower skill profile might have fewer chances of finding an attractive job, since the employers' selections take human capital aspects into account (Hatch & Dyer 2004). Therefore their opportunity costs would be lower, the input factors of the risk situation would decrease, which makes the bet more attractive and finally the amount of fear to take the bet would decrease. Indeed, the lack of alternative employment options is a reason in reality for many people to found a company (Brixy et al. 2011).

On the other hand, highly skilled entrepreneurs could be aware of their own outstanding abilities and therefore evaluate the probability of success higher, than for other entrepreneurs who would start a comparable venture. In this case, the probability of success for skilled founders would be higher (Chandler & Jansen 1992; Brüderl et al. 1992; Cooper et al. 1988; Cooper et al. 1994; Jo & Lee 1996; Hagen et al. 2011; Stuart & Abetti 1990; Gompers et al. 2006) and the risk situation would have to be valued as more attractive. This should decrease the amount of fear they face in taking the bet. A prerequisite for this argument would be a realistic estimation of one's abilities. In reality, this estimation is probably very subjective (Cooper et al. 1988), but since this section aims to evaluate the logical behavior of a rational agent, a realistic self-estimation should be assumed.

A higher skill profile also might have a connection to the awareness of the ease to start a new company. It could be that highly skilled entrepreneurs are more aware of the pitfalls and

challenges of such an endeavor and hence evaluate the probability of success lower which causes higher fear (c.f. findings of this research study in section 7.1.2.3 and Brixy et al. 2011). This would mean that ignorance is indeed bliss, and those who are simply not aware of all the potential problems face less fear. On the other hand, exactly the opposite could be the case as well. Potential entrepreneurs with sufficient skills and knowledge for a foundation, who are aware of the challenges, could reduce the uncertainty of the probabilities of success and failure, since they could actively counteract managerial shortfalls (Freiling 2009a). This more realistic evaluation of the risk situation would reduce uncertainty and increase the value of the bet. Therefore the amount of fear would be reduced. Since the effect on fear of foundation can be explained in both directions, no logical argument can be made according to the influence of a higher skill profile mediated by a better awareness of the challenges of a startup.

### **Conceptual thoughts and logical arguments according to the psychological view (Will)**

An argument based on the psychological view should evaluate, if a high willingness of a potential entrepreneur should lead to higher or lower fear, from a logical argumentation. In this context, high will is defined as the intrinsic motivation to found a company. This could refer to individuals who always dreamt of building their own business or who admire founders. It also includes extrinsic motivation, for example through an environment that supports and appreciates entrepreneurship (Kelley et al. 2011). Motivation is generally an important driver for entrepreneurial performance (Shane et al. 2003; Locke & Baum 2007; Baum 1994; Baum & Locke 2004). Potential founders, who are intrinsically motivated and dream of founding a company, receive additional benefits apart from potential economic profits from their entrepreneurial activity. By fulfilling their dreams, they could for example achieve self-realization (GfK et al. 2012; Carter et al. 2003; Manolova et al. 2008). This value has to be taken into account as an additional output of the risk situation and would improve the bet. Therefore, intrinsically motivated entrepreneurs should face lower fear to found a company. A similar argument can be made for extrinsic motivation. An entrepreneurial friendly environment can support foundation engagements decisions (Brüderl et al. 1992; Stam et al. 2010; Werner 2011) and hence lower the required input factors in a company's gestation. More importantly, it decreases the value of entrepreneurial failure. If a failed entrepreneur is not stigmatized as a loser (Ullrich 2013; Landier 2006; McGrath 1999), but instead appreciated for his/her courage to take the risk to start a company and for the experiences he/she gathered in his/her venture, the impact of a failure bears lower negative consequences for the future career of the failed entrepreneur. This fact increases the

attractiveness of the bet and should hence reduce fear of foundation. In Germany this extrinsic motivation is rather low. The absolute motivation to found a company is average (with a tendency to slightly negative), but compared to 18 other innovation-based countries (AUS, CH, CZ, E, F, FIN, GR, IRL, N, NL, P, ROK, S, SGP, SLO, TW, UAE, UK), eleven have a more positive attitude towards entrepreneurship and only one (CZ) has a worse one (Brixy et al. 2011). Another factor is the estimation of the own abilities of a potential founder. A higher confidence in one's own abilities or even an over-estimation of them (Cooper et al. 1988) would have the same effect as higher skills, as mentioned above. This is, because the evaluation of the risk situation can only base on the estimation of the situation with the available information. Such an overestimation of the own skills can be the result of a subjective view but could also apply to rational agents. The ability to compare the own skills to others can be based rationally on limited available information. Such an agent might compare his/her own abilities to study or work colleagues, where he/she indeed may stand out. Should the average of business founders be even more skilled, the agent could only evaluate his/her own skills compared to them, if he/she had sufficient knowledge about this group. Should he/she have no or only limited information of their skills, he/she might estimate the own skills in a distorted way. Therefore, an optimistic evaluation of one's own abilities would increase the perceived probability of success and hence reduce fear. Existing research in the Global Entrepreneurship Monitor shows, that on average 49% of the surveyed men in 23 investigated innovation based countries (e.g., Germany, USA) and 32% of the women are convinced, they have sufficient knowledge for the foundation of an own company (Brixy et al. 2011; Brixy et al. 2011). In Germany 44% of the men and only 30% of the women are convinced of this (Brixy et al. 2011). However, the objective abilities required to found a company are rather poor in Germany. An investigation of 18 innovation based countries (AUS, CH, CZ, E, F, FIN, GR, IRL, N, NL, P, ROK, S, SGP, SLO, TW, UAE, UK) showed that in only five countries (CH, IRL, NL, TW, UAE), the population is better qualified for entrepreneurship, while all others were equally poor (Brixy et al. 2011). Estimating that women are not generally less skilled than men, this would show either an under-estimation of their own abilities of women or an over-estimation of their abilities of men. Since the Global Entrepreneurship Monitor (Brixy et al. 2011) constitutes poor entrepreneurial abilities in Germany, the high number of people (especially men) who consider themselves competent enough to found a company suggests that there is a broad over-estimation of the own entrepreneurial skills in the society.

#### **Arguments from literature according to the sociological view (Socio-demographics)**

From a socio-demographic viewpoint no logical argument can be made according to the connection between certain attributes, like sex or age, and fear to found a company. It can hardly be argued, that younger potential founders have more or less fear than older ones. However, an argument can be made out of existing knowledge about beliefs and behaviors of people based on their social-demographic attributes.

In literature, a common relevant socio-demographic attribute is the Eastern or Western German origin of individuals. The survey in the Global Entrepreneurship Monitor shows, that Eastern Germans estimate the chances of entrepreneurship more skeptical than Western Germans. Apart from that, even though there are certain variances between different regions in Germany, there are no other significant patterns (Brixy et al. 2011). Therefore, people from Eastern Germany should value the economic situation of the bet as less favorable and hence have a higher fear to found companies.

Another common socio-demographic attribute that is often examined in literature is the sex of the individual. In entrepreneurship research there are some findings about the differences between male and female entrepreneurs. Women have a stronger hesitance to found companies due to fear of failure. In Germany 56% of the women, but only 46% of men would refrain from founding a company because they fear it would fail (Brixy et al. 2011). According to this study, women seem to have a higher fear to found a company. This observation could be linked with general higher risk aversion of women (Sapienza et al. 2009; Jianakoplos & Bernasek 1998; Schubert 1999). The reasons why people decide to start a company vary between men and women as well. For example, women tend to found a company because of a lack of alternative employment options more often than men (Brixy et al. 2011). It is difficult to interpret this observation. It could mean that women simply do not have as many employment options as men – for whatever reason. Then there would be more women than men without the chance to get another job and subsequently there would be more women, founding because of this reasons than man, even if there were no difference in the founding behavior between the two sexes. Research on female employment options shows, that there is a long history of gender inequality (Goldin 1992). There are still various barriers to entry when it comes to employment options (Phillips & Imhoff 1997), especially when it comes to employment after motherhood (Gutiérrez-Domènech 2005). Due to family and domestic work, part-time or flexible working hours are often a prerequisite to be able to cease a job opportunity for women (Bielenski & Wagner 2003; Hock et al. 1984). Also gender specific stereotypes (Bartholomew & Schnorr 1994) and self-perception (Fischlmayr 2002)

can limit the availability of alternatives. Women also often have different preferences about employment alternatives compared to men, for example according to working hours or industries (Rooney et al. 2003; DeMartino & Barbato 2003). Another interpretation could be that women are less willing to accept their current situation of lacking job opportunities than men and therefore create the alternatives for them themselves. However, there are no specific research studies to back this interpretation. Since the reasons for this observation can only be speculated about, it cannot be determined out of a logical argumentation, what the effect on fear of foundation really is.

### **Summary of selected logical arguments for rational agents**

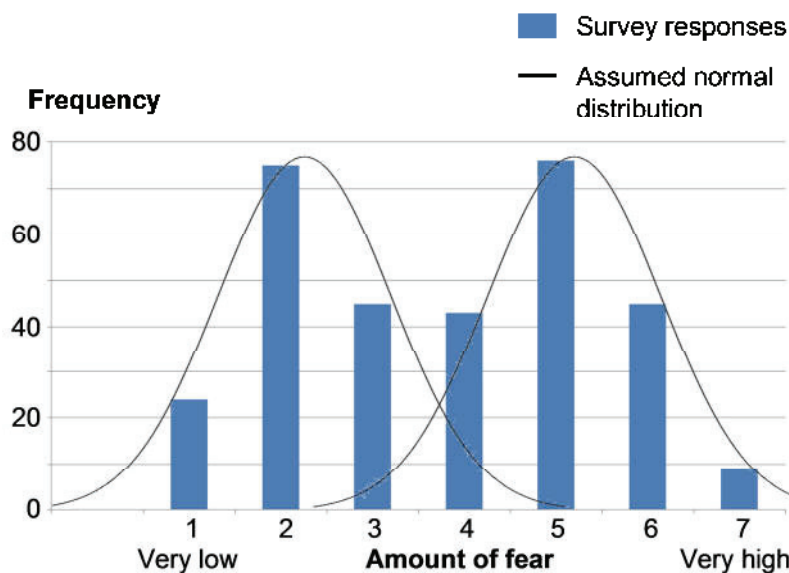
- High skill → opportunity costs → Fear ↑
- High skill → higher success chances → Fear ↓
- High skill → awareness of own abilities → Fear ↓
- High skill → awareness of challenges → Fear ?
- Intrinsic motivation (wish to found) → self-realization → Fear ↓
- Extrinsic motivation (supportive environment) → failure more acceptable → Fear ↓
- Optimistic evaluation of own abilities → perceived higher success chances → Fear ↓
- East Germany → less favorable evaluation of entrepreneurship → Fear ↑
- Female → generally more afraid → Fear ↑
- Female → founding reason lack of alternatives → Fear ?

The discussion above shows that a logical argumentation cannot determine the direction of the differences in fear, for different attributes of entrepreneurs. Some arguments support higher fear, others lower fear for the same attribute. A problem here is, that the qualitative arguments do not contain a weighting. It cannot be determined which of the drivers has a stronger influence and hence is dominant, or if the different arguments might even level out. Another problem is that the above argumentation is based on entrepreneurs as rational agents. However, they are human beings who most likely do not always act completely rational. Therefore in the next section, an empiric observation of entrepreneurs will investigate the influence of different attributes on the amount of fear the individuals face.

### 7.3.2.3 Empirical findings about the influence of individual attributes on fear

The following section will present the empirical findings about the connection between certain personal attributes of individual entrepreneurs and their fear of founding a company. These empirical findings will complement the logical argumentation of the previous section.

As described in section 7.1.2.1 (page 170), there seem to be two distinct groups of entrepreneurs according to their fear. While the mean value of the fear of founding a company of 3.75 is almost in the middle of the used Likert scale with values from 1 to 7, there are two strong peaks in the distribution of fear. Both peaks are almost equally strong. The first is at the value of 2, the second at a value of 5. The distribution of the survey responses suggests that there are two sub-distributions similar to normal distributions around these peaks.



**Fig. 39:** Histogram of the distribution of fear with an illustration of two assumed mean distributions for a group with low fear and one with high fear

This result suggests the existence of two groups of entrepreneurs according to their fear, each with a certain spread. One group has a lower, the other a higher amount of fear. Detailed analyses of the attributes of these two different groups will reveal whether there are differences between the entrepreneurs in these groups. A correlation analysis and a regression analysis were used to reveal the influence of the individual's attributes on fear.

### **Empirical findings according to the economic view (Skill)**

In the correlation analysis the different entrepreneurial attributes were compared to the fear of founding a company. Surprisingly there is no significant correlation between fear and the level of education or the performance in the education compared to fellow students. Also the previous work experience and previously achieved salary show no correlation with fear. These findings are in contradiction to the theoretical thoughts above. Nascent entrepreneurs who come out of an occupation with high salary face higher opportunity costs. Theoretically, this has an influence on the evaluation of the startup situation and hence the according fear but this does not seem to be relevant in reality. The same applies to the level of education. Higher skilled entrepreneurs, who are aware of their abilities, should theoretically have higher success chances with their ventures and should hence face less fear. However, in reality this cannot be observed.

The amount of leadership experience of a potential entrepreneur has a highly significant negative correlation with fear of foundation. An explanation for that could be that executive managers are used to the situation of being confronted with uncertainty, making challenging decisions and taking risks. This experience might help them in evaluating the situation of starting a new venture and having the courage to take the decision.

Other attributes of potential entrepreneurs which are significantly correlated with fear have to do with the self-estimation of their abilities. The self-estimation of their qualification as a business founder compared to others and the overall score of their self-estimated qualification in various competencies which are required in entrepreneurship are strongly correlated with decreased fear. Since this correlation is only about the self-estimation of qualifications but not about objective measures of qualification, like the level of education or salary, it seems obvious that this group of entrepreneurs overestimate themselves. This could explain the effect on fear. The phenomena over-optimism and, in this situation, especially overconfidence can be observed in many aspects of entrepreneurship. For example, individuals who actually founded a company are generally more optimistic than others, even though they are not more qualified than others (Cooper et al. 1988). The excessive trust in the own ability and fortune can understandably lead to lower fear of taking the risk to found a company.

The evaluation of a risk situation includes an investigation of the challenges that might be included. Two attributes aim to measure the entrepreneurs' awareness of potential pitfalls. The first counts the total number of potential failure reasons, which the entrepreneur could



imagine could be leading his/her company to a failure. The second one only counts those reasons, which can be observed in reality according to existing studies on entrepreneurial failure. Therefore the first measure can be interpreted as a general worry what can go wrong, the second as an awareness of the actual pitfalls in reality. Both variables show a highly significant correlation with an individual's fear to found a company. This result is open to interpretation. Over-optimism could play a role here again. Over-optimistic entrepreneurs might not expect many challenges and face lower fear. According to the awareness of realistic failure causes, ignorance could be a bliss. The less aware potential entrepreneurs are of the real challenges the less fear they have and the more likely they will have the courage to found a company. There is no correlation between the awareness of real failure reasons and the objective level of education or the amount of work experience. Therefore it can be postulated that this awareness is rather a matter of attitude than knowledge. When interpreting this result, it has to be kept in mind that the relationship between the variables only shows correlation, but not necessarily causality. Therefore it could also be that the amount of failure reasons which come to mind is not the cause for fear but rather a result. People with high fear might imagine more potential pitfalls because of their fear. In this case, the amount of anticipated failure reasons should rather be interpreted as another measure for fear but not as a potential root cause.

### **Empirical findings according to the psychological view (Will)**

There is a strong correlation between fear of founding a company and motivational attributes of the entrepreneur. The wish to become an entrepreneur has a very high and strongly significant correlation to the amount of fear he/she faces. This dream to found a company seems to be able to counteract the fear and actually do it. The more an individual wishes to be an entrepreneur, the less fear he/she has and hence the more likely it gets, that he/she actually becomes one. The admiration of entrepreneurs has a similar effect. It is assumed, that the admiration of entrepreneurs goes along with the dream to be an entrepreneur. It is likely that you appreciate what you dream to be. These results show that the intrinsic motivation plays a major role about fear of founding a company. Quite surprisingly, the estimation of the reputation of entrepreneurs in society does not show a significant correlation to the amount of fear to found a company. Survey participants who think entrepreneurs have a good reputation in society do not face less fear than others. The extrinsic motivation, which is induced by the potential entrepreneur's environment, seems to play a minor role. However, the environmental context has an influence on the intrinsic motivation



of the entrepreneur over time as well. It seems more likely to build the dream of becoming an entrepreneur if there is according encouragement of the social context. Nevertheless, this could be limited to certain peers of the potential entrepreneurs. He/she could drain this support and encouragement out of a reference group of peers he/she can identify with, but still think the broad society does not appreciate entrepreneurship. Overall, motivation plays a major role for the amount of fear of starting a company.

### **Empirical findings according to the sociological view (socio-demographics)**

Finally, a set of socio-demographic items were analyzed according to their correlation with fear. No significant correlation to fear could be observed for the age of the entrepreneur. There is also no significant difference between Eastern and Western Germany. On first sight, this seems to be a contradiction to the findings from the survey of the Global Entrepreneurship Monitor (Brixey et al. 2011). However, the questions were not exactly the same. In their survey, they found that more people in Eastern Germany would refrain from founding a company because of fear of failure. This just measures the connection between fear of failure and fear of foundation, as discussed in section 7.2.2. Their survey did not measure, how much fear the Eastern and Western Germans had. That was the question of this study and no difference between the regions could be found. Combining the two results, it could be that Eastern and Western Germans face the same amount of fear, but the Eastern Germans refrain more often from founding a company, because of this fear. This result could indicate that potential entrepreneurs from Western Germany are more willing to take risks. A reason for that could be the better economic situation in Western Germany, where it might be easier for failed entrepreneurs to return into an employment situation than in Eastern Germany.

A further relationship which was investigated is whether the existence of self-employed relatives has an influence on the fear, an individual faces. This social context can have an effect on entrepreneurial attitudes and decisions (Brüderl et al. 1992; Stam et al. 2010). However, in this survey, no correlation to fear could be found. Individuals out of an entrepreneurial family do not show significantly lower amounts of fear of founding a company themselves. Potentially there are mitigating effects in contrary directions which level out. On the one hand, coming from an entrepreneurial context might give motivation, skills and understanding about being self-employed and might hence reduce fear. On the other hand it could also create awareness of the downsides and challenges of being a business

owner, which might increase fear. If both effects do exist and neither is clearly dominant, this could explain why there is no overall effect on fear on average.

As expected, the sex of the potential entrepreneur has an effect on the amount of fear. In the empirical survey, female participants showed a higher amount of fear of starting a business in a highly significant correlation. This is in-line with similar findings in research. Women generally experience more positive as well as negative emotions, for example fear (Zahn-Waxler et al. 1996). This results in higher fear of women when starting a job (Marx & Wollny 2010, p.106) or when founding a company (Brixy et al. 2011). Therefore, it does not seem to be a phenomenon which is specific for entrepreneurship.

	Fear of foundation (Anxiety_estimate)				
	Correlation Coefficient	Sig.	Regression Coefficient	Sig.	
<b>Economical view (Skill)</b>					
Education	.088	.126	-.016	.763	
Education_ranking	-.034	.553	-.006	.784	
Languages	-.052	.362	-.028	.724	
Work_experience	-.086	.135	.010	.755	
Leadership_Experience	-,186**	.001	-0,086*	.029	
Salary	.042	.466	.015	.651	
Qualification_ranking	-,234**	.000	-.028	.302	Self-estimation of qualification
Score_competencies	-,253**	.000	-.109	.428	
Score_count_reasons	,145**	.010	.046	.469	Anticipation of potential challenges
Score_real_reasons	,174**	.002	.961	.161	
<b>Psychological view (Will)</b>					
Will_wannabe	-,478**	.000	-0,407**	.000	Motivation
Will_admire	-,313**	.000	.055	.421	
Will_reputation	-.021	.704	0,152*	.033	
<b>sociological view</b>					
Age	-.016	.775	.017	.490	
Sex (1=m, 2=f)	,167**	.004	.252	.195	
State_east_west	-.083	.148	-.605	.203	
Relatives_selfemployed	-.084	.145	-.346	.055	

\*: Significance level  $\leq 0.05$ ; \*\*: Significance level  $\leq 0.01$

**Fig. 58:** Influence of the individual attributes of an entrepreneur on his/her fear of founding a company

	Anxiety_estimate	Anxiety_fearfailure	Funnelstep	Will_wannabe	Will_admire	Will_reputation	Age	Sex	State_east_west	Education	Education_ranking	Languages	Work_experience	Leadership_Experience	Salary	Qualification_ranking	Relatives_selfemployed	Score_competences	Score_count_reasons	Score_real_reasons
Anxiety_estimate		.000	.000	.000	.000	.704	.775	.004	.148	.126	.553	.362	.135	.001	.466	.000	.145	.000	.010	.002
Anxiety_fearfailure	.704**		.000	.000	.000	.752	.240	.000	.312	.709	.759	.827	.030	.002	.508	.004	.521	.001	.071	.023
Funnelstep	-.449**	-.370**		.000	.000	.070	.000	.000	.157	.532	.033	.896	.000	.000	.152	.000	.797	.000	.379	.245
Will_wannabe	-.478**	-.380**	.617**		.000	.000	.947	.000	.323	.000	.460	.150	.158	.001	.007	.000	.214	.000	.989	.698
Will_admire	-.313**	-.299**	.393**	.718**		.000	.815	.014	.118	.057	.449	.121	.526	.016	.061	.000	.603	.000	.575	.221
Will_reputation	-.021	-.018	.095	.360**	.382**		.581	.985	.702	.021	.455	.492	.304	.057	.288	.044	.000	.032	.101	.947
Age	-.016	-.068	.353**	-.004	-.013	-.032		.825	.633	.000	.008	.003	.000	.000	.000	.213	.017	.101	.949	.175
Sex	.167**	.206**	-.202**	-.199**	-.141**	.001	.013		.405	.289	.942	.103	.510	.367	.179	.023	.806	.228	.877	.789
State_east_west	-.083	-.058	.081	.057	.090	-.022	.027	.048		.122	.790	.362	.645	.856	.061	.461	.535	.686	.351	.388
Education	.088	.021	-.036	-.229**	-.109	-.132*	.235**	-.061	-.089		.001	.765	.594	.946	.000	.246	.272	.334	.505	.191
Education_ranking	-.034	-.018	-.122*	-.042	-.044	-.043	-.151**	.004	.015	.184**		.006	.020	.036	.013	.029	.536	.171	.001	.002
Languages	-.052	.013	-.008	.083	.089	.040	-.171**	.094	.052	.017	.156**		.033	.081	.182	.045	.880	.735	.947	.878
Work_experience	-.086	-.124*	.367**	.081	.036	.059	.866**	.038	.027	.031	-.134*	-.122*		.000	.000	.027	.123	.000	.645	.083
Leadership_Experience	-.186**	-.178**	.378**	.192**	.138*	.109	.697**	-.052	-.010	-.004	-.120*	-.100	.835**		.000	.001	.128	.000	.912	.158
Salary	.042	-.038	.082	-.156**	-.108	.061	.472**	-.077	-.107	.532**	.143*	-.077	.453**	.345**		.002	.947	.003	.418	.018
Qualification_ranking	-.234**	-.163**	.237**	.269**	.207**	.116*	.072	-.130*	-.042	.067	.125*	.115*	.127*	.193**	.177**		.417	.000	.002	.000
Relatives_selfemployed	-.084	-.037	-.015	.071	.030	.270**	-.136*	-.014	-.036	-.063	-.036	-.009	-.089	-.088	.004	-.047		.779	.687	.406
Score_competences	-.253**	-.194**	.209**	.328**	.268**	.123*	.094	-.069	.023	-.056	.079	.019	.212**	.233**	.173**	.483**	.016		.000	.000
Score_count_reasons	.145**	.101	-.049	-.001	-.032	.092	.004	-.009	-.054	-.038	-.187**	.004	-.027	.006	-.047	-.174**	.023	-.207**		.000
Score_real_reasons	.174**	.127*	-.065	-.069	-.069	-.004	-.078	.015	-.050	-.075	-.175**	-.009	-.100	-.081	-.135*	-.211**	.048	-.208**	.661**	

Correlations between entrepreneurial attributes and fear. Bottom left: correlations (\*: significance level  $\leq 0.05$ , \*\*: significance level  $\leq 0.01$ ); top right: significance levels

**Fig. 59:** Correlation table between different attributes of entrepreneurs and fear

The correlation analysis was supplemented by a regression analysis with fear of foundation as dependent and the entrepreneurial attributes as independent variables. This subsequent analysis confirmed the connections described above between fear and the skill attribute *leadership experience* (regression coefficient -0.086 with a significance level 0.029) and the will attribute *wish to become an entrepreneur* (regression coefficient -0.407 with a significance level of 0.000). These results of the regression analysis suggest indeed a causal relationship, instead of only a correlation. For the other variables there are no significant results. According to the number of potential failure causes (variable: number of total anticipated possible failure reasons with regression coefficient of 0.046 and significance level of 0.469; variable: number of anticipated actual failure reasons: regression coefficient 0.961 and significance level of 0.161), this suggests, that the number of anticipated failure causes could indeed be a result or an accompanying effect of fear but not its root cause. Regarding the variables about the self-estimation of the own qualification, which did not show a significant regression coefficient, it is assumed, that there are restrictions due to the limited sample size and the resulting insufficient power for a regression analysis with such a high amount of variables to identify causal relationships. Additionally it might be that there are common underlying drivers behind the variables, which prevent the measurement of the influence of single variables in the regression model.

#### **7.3.2.4 Summary of individual attributes influencing fear and confirmation of hypotheses**

In summary, motivation to become an entrepreneur has the strongest influence on fear to found a company. The more a person wishes to become an entrepreneur, the less fear he/she has to implement his/her plans. This finding confirms the following hypothesis.

##### Hypothesis 3c – ☒ confirmed

A low motivation (will) profile of the potential entrepreneur will lead to a higher amount of fear of founding a company.

The amount of *leadership experience* is another important factor which reduces fear. People who are used to taking decisions and facing uncertain situations have less fear to found a company. A high *self-estimation of the own qualities* – whether justified or not – might also decrease fear. However this connection was only observed in the correlation but not the regression analysis. The according hypothesis cannot be confirmed, since only a few particular aspects of the skill profile of the potential entrepreneur have an influence on fear and moreover those have an inverted influence on the amount of fear as expected.

##### Hypothesis 3b – ☒ not confirmed

A high competence (skill) profile of a potential entrepreneur will lead to a higher amount of fear of founding a company.

Since women generally experience more fear than men (Zahn-Waxler et al. 1996), this also holds true according to the fear of founding a company. Finally, the more fear of failure a potential entrepreneur has, the more potential failure reasons come to his/her mind – failure reasons which actually happen in reality and also overrated failure reasons. Causal relationships could not be proved according to this correlation.

#### **Summary of individual attributes which influence fear of founding a company**

The following list will summarize the personal attributes of individuals that can be associated with experiencing high fear according to the empirical findings of this study.

- The *wish to become a founder* and the according admiration of entrepreneurs decreases fear.
- *Leadership experience* decreases fear.

- A high *self-estimation of the own qualities* (independently of the actual qualities) might decrease fear.
- *Women* might face higher fear than men.
- The *anticipation of many potential failure sources* goes along with high fear.

### **Clustering of potential entrepreneurs according to their fear-relevant attributes and forecast of fear**

After having identified which attributes of the individual entrepreneur influence the amount of fear he/she has it will be analyzed if the individuals can be clustered by those attributes into different groups with different amounts of fear.

A method for clustering different items would be the cluster analysis (Brosius 2004; Bühl 2006). However, in this case this analysis would only cluster based on the dependent variables (the attributes of the entrepreneurs) but not based on the independent variable (the amount of fear). Only groups of individuals would be identified with similar single attributes (Brosius 2004; Bühl 2006). So the optimization of the clustering would be about a high similarity of the attributes within each group, but not a high difference of fear between the groups.

Therefore, a discriminant analysis was used. This analysis allows clustering items based on a given group variable (Brosius 2004; Bühl 2006). In this case, the binary recoding of the variable fear of foundation was used as group variable. The binary recoding represents the two peaks of fear presented above and categorizes the survey participants as those with high fear (around mean value of 5 on the Likert scale 1-7) and those with low fear (around the mean value of 2 on the Likert scale 1-7). This categorization is required as a prerequisite for the discriminant analysis to be able to cluster the entrepreneurs into two groups. The two variables with the most influence on fear of foundation have been used for the discriminant analysis: the wish to become an entrepreneur and the leadership experience. As described above, these are the two variables with the strongest influence on fear according to both the correlation and regression analysis. In a first step, the discriminant analysis was used to analyze the data and derive the influence factors of these two variables on fear. In the second step these influence factors were used to calculate a prediction of the amount of fear for each individual entrepreneur. The prediction achieved a high accuracy and could predict the amount of fear for 71% of the entrepreneurs correctly, solely based on their wish to become entrepreneurs and their leadership experience. The two attributes with the highest influence on fear are sufficient to predict the amount of fear for the majority of individuals. This finding

further supports their importance. To validate this finding, various discriminant analyses were calculated in a structured way with different input factors (e.g., with all attributes, with all attributes with a correlation to fear, etc.) to investigate, if the accuracy of the prediction of fear can be further increased, when taking further variables into account. Adding the self-declared competences as an input variable in the discriminant analyses does not improve the forecast accuracy. The corresponding correct classification of 70% of the entrepreneurs is similar to the previous result. Adding additional attributes of the individual entrepreneurs could not achieve to increase the forecast accuracy, so the wish to become an entrepreneur and the leadership experience can be confirmed as the main influencing personal attributes of fear of foundation.

The dispatched values have been analysed in detail to identify structural distortions. As a first analysis the mean values of fear of foundation of the dispatched values were analysed. While the predicted group with “low fear” showed a mean value of 2.97 and the group with “high fear” a mean value of 4.59, the dispatched group showed a mean value of 3.93. This is an indication that the group consists of many of the individuals, in the overlapping distributions of the low and high fear curve.

**Group statistics**

Anxiety_estimate_binary		Mean	Std. Deviation	N
Low fear	Will_wannabe	5.850	1.351	140
	Leadership_Experience	2.736	4.708	140
High fear	Will_wannabe	4.390	1.764	164
	Leadership_Experience	1.332	3.232	164
Total	Will_wannabe	5.063	1.744	304
	Leadership_Experience	1.979	4.035	304

**Classification results**

Anxiety_estimate_binary			Predicted Group		Total
			Low fear	High fear	
Original	Count	Low fear	105	40	145
		High fear	53	120	173
		dispatch	14	41	55
	%	Low fear	72.4	27.6	100.0
		High fear	30.6	69.4	100.0
		dispatch	25.5	74.5	100.0

→ **70.8% of original grouped cases correctly classified.**

Eigenvalue	0.212
% of Variance	100.0
Canonical correlation	0.418
Wilks' Lambda	0.825
Chi-square	57.850
Sig.	0.000

**Fig. 60:** Results of discriminant analysis, classifying entrepreneurs based on their fear

The above analyses show that there are indeed attributes that are able to cluster the potential entrepreneurs into groups with different amounts of fear. This finding confirms the following hypothesis:

Hypothesis 3a – ☒ confirmed

Potential entrepreneurs can be clustered according to certain attributes into groups with different amounts of fear.

### **7.3.3 Who founds? The influence of individual attributes on the probability to found a company**

After having evaluated what characterizes entrepreneurs with high or low fear from the perspective of a logical argumentation, literature review and the empirical survey, the following section will focus on characteristics of individuals who actually found companies. This is a logical next step, because fear of founding a company can lead to hesitance to actually do so (Brixy et al. 2011). Therefore, it is important to understand, if it is the same set of attributes of potential entrepreneurs that lead to fear as well as to dismissal of the foundation intent. The following examination will start with a review of entrepreneurship research literature on this topic, present the findings of the empirical study and conclude with a summary, integrating the insights from both. As a prerequisite, it has to be discussed whether the personal attributes of an individual actually have an influence on the foundation decision or not.

#### **7.3.3.1 Prerequisite: Are the entrepreneurs' individual attributes actually relevant for the probability of foundation?**

A requirement for this research topic is that the personal attributes of the entrepreneur are actually relevant for the success in the regarded funnel step of founding a company and that not only other reasons, like the environment, the idea or merely luck are responsible for success (Barney 1986; Ong et al. 2010).

Critics (Gartner 1988; Blanchflower & Oswald 1998; Reynolds 1997) argue against the chosen approach for two reasons. First of all, some doubt a causal connection between the entrepreneurs' individual attributes and the probability of founding a company or succeeding with it (Gartner 1988; Blanchflower & Oswald 1998). Secondly, some challenge that the connection could be reasonably measured in research, even if it actually did exist (McKenzie et al. 2007; Gartner 1988). Independently of this discussion, researchers agree that the influence of the entrepreneurs' personal attributes is not understood yet: "Little is known about the factors which lead individuals to start a new firm." (Reynolds 1997).

One research direction argues that the individual's attributes do not have a major influence on the founding activities. Gartner (1988) differentiates between two different types of research approaches. The *behavioral approaches* are focused on activities and actions of the



entrepreneurs. The others are the *trait approaches*, which examine personality traits and characteristics of individual entrepreneurs. Gartner argues that the latter are not fruitful and behavioral approaches should be used instead, as they are more productive (Gartner 1988). Blanchflower and Oswald (1998) support this view in their research. They doubt that it is possible to forecast entrepreneurial activity based on personal attributes of the individual. They state that “childhood personality measurements and psychological test scores are of almost no help in predicting who runs their own business later in life” (Blanchflower & Oswald 1998). According to these thoughts, external influences have a higher impact on entrepreneurial activity, especially funding opportunities. “It is access to start-up capital that matters” (Blanchflower & Oswald 1998).

Another research direction argues that even if the personal attributes should have an influence on the founding activities, it can hardly be reasonably determined in research and hence research should focus on other aspects. No hard evidences of the effects of personal attributes could be found in research (Gartner 1988). Therefore Gartner states, that ““Who is an entrepreneur?” is the wrong question“ (Gartner 1988). McKenzie et al. support this view, even about 20 years later and support that ““Who is an entrepreneur?” is still the wrong question“ (McKenzie et al. 2007).

However, there are also supporters of the research approach to examine entrepreneurial activity based on the attributes of the founders. „[H]uman resources are generally found to be better predictors of the outcome“ (Rotefoss & Kolvereid 2005) than environmental influences. Even though other factors may play a role, it can be argued that the person of the entrepreneur plays a key role in the success of a venture. First of all, in the case of a startup, the person of the founder is the ultimate origin of the entire endeavor and shapes its fortune. Usually the business idea, the external partner, the available funding, etc. all can be taken back to the efforts or the person of the entrepreneur. He/she creates the setting of the company and can often be seen as the root cause even of external influences. Further research supports this argument and shows, that the founder is the main driver of success (Brüderl et al. 1992). Especially the phenomenon of fear is closely connected to the person of the entrepreneur. Feelings and “mental processes“ (Baron 2004) influence people’s decisions and behaviors through “cognitive mechanisms through which we acquire store, transform, and use information“ (Baron 2004). This explains why certain kinds of individuals wish to become entrepreneurs and also the reasons for this desire (Baron 2004; Stam et al. 2010). Therefore, the personal attributes of the founders seem to be relevant for the decision to start a company

and for the success of the company, once founded (Stam et al. 2010; Rotefoss & Kolvereid 2005; Dollinger 2003; Shane et al. 2003), even though certainly external factors play a role, too.

The discussion whether investigating the individual attributes of an entrepreneur makes sense or not reaches back to the 1960s. By now the arguments could have shifted due to different types of startups founded today, e.g., technology based ventures, and the current backgrounds of entrepreneurs, e.g., due to changed entrepreneurial education. Therefore, to apply the approach with current research does make sense. The focus of this research study is the investigation of fear in the entrepreneurial process. This aspect is not included in the discussion on entrepreneurial attributes since the discussion is only about the differences between actual entrepreneurs and non-entrepreneurs. Therefore investigating fear and the according attributes represents a research gap that makes sense filling. To investigate the attributes in the following steps of the entrepreneurial process is a logical subsequent analysis and will hence be performed, independently of the critique on this approach.

#### **7.3.3.2 Findings from literature about the influence of individual attributes on the probability to found**

To make the results comparable the same categories will be used to cluster the attributes in the following discussion as were used in the previous sections. The characteristics of the potential entrepreneurs who actually do found companies will hence be grouped according to an economic view (skill perspective), a psychological view (will perspective) and a sociological view (socio-demographic perspective).

##### **Findings from literature according to the economic view (skill)**

There is broad agreement in the research community, that a higher level of education positively influences the probability to found a company (Rotefoss & Kolvereid 2005; Delmar & Davidsson 2000; Cooper et al. 1994; Bates 1995; Carr 1996; Hagen et al. 2011; Moog 2004; Giannetti & Simonov 2004; Ucbasaran et al. 2007; Ullrich 2013; Stam et al. 2010). This finding applies to individuals as well as to entire societies. Various studies show that individuals with a higher education have a higher probability to identify and pursue entrepreneurial opportunities. The survey of the Global Entrepreneurship Monitor (2011) identified, that a higher level of knowledge and skills in a country leads to higher potential of

foundations in the corresponding country (Brixy et al. 2011). These findings only refer to the overall foundations, without a differentiation between different kinds of foundations. While there is consensus that the general level of education has the potential to foster entrepreneurial activity, there is only limited knowledge about which specific area of education and skills is particularly beneficial for becoming an entrepreneur. Baron (2004) assumes that there are “specific skills and competencies” (Baron 2004, p.224) which characterize individuals who founded a company. These attributes increase the probability to found a company (Baron 2004). However, the specific attributes are neither described nor empirically tested. In an empirical study (n=988) a connection between social skills and the probability of foundation could be shown. "The study supports human capital in predicting entry into nascent entrepreneurship" (Davidsson & Honig 2003).

There is discussion in research whether a broad area of competencies or a very narrow but in depth expertise is more favorable in terms of starting a business. Lazear (2004) argued, that entrepreneurs with competencies in many skills (“jack of all trades”) have a higher probability of founding a company (Lazear 2004). Wagner (2003) tests Lazear’s (2004) hypotheses “that individuals with competence in many skills should have a higher probability of being self-employed than others” and finds, that “[t]he empirical results for Germany support this jack-of-all-trades view” (Wagner 2003). Pichler et al. (2011) interpret these findings by building a bridge between a broad skill set and cognitive biases. They found that broadly skilled entrepreneurs are often overconfident (Pichler et al. 2011). Therefore overconfidence should be the actual root cause of as well entrepreneurial activity as acquisition of a broad skill set. However, an explanation could also be that entrepreneurs with a broad skill set become overconfident because of their wide qualifications. The direction of the causality cannot be determined based on the current state of research.

The previous experience of the individual has a strong positive influence on the probability of founding a company. Four aspects of experience are discussed in literature: general work experience (Ucbasaran et al. 2007; Reynolds 1997; Cooper et al. 1994), specific work experience in the industry of the foundation (Werner 2011; Ucbasaran et al. 2007), managerial/leadership experience (Hagen et al. 2011; Ucbasaran et al. 2007) and entrepreneurial experience (Rotefoss & Kolvereid 2005; Ullrich 2013; Ucbasaran et al. 2007). Most founders have previous work experience and come out of “full-time jobs, part-time jobs, or managing another business“ (Reynolds 1997, p.449). Rotefoss and Kolvereid (2005) emphasize the importance of self-employment experience. They state that entrepreneurial or

leadership „experience is the single most important factor“ (Rotefoss & Kolvereid 2005, p.109) for the foundation of a company.

### **Findings from literature according to the psychological view (will)**

There are more findings from research studies according to the motivational characteristics of founders. Important aspects discussed in literature are cognitive biases (for an overview see, e.g., McGrath 1999). Koellinger (2007) derived from an empirical study “strong evidence that subjective, and often biased, perceptions have a crucial impact on new business creation across all countries” (Koellinger et al. 2007, p.502). Arenius and Minniti (2005) support this statement and believe that perceptual variables and biases are significantly correlated with venture creation. According to Baron (2004), Prospect Theory (Kahneman & Tversky 1979) can give explanations why some people become entrepreneurs and others do not. Individuals who are very receptive to cognitive biases like an illusion of control, planning fallacy or optimism bias, could be more likely to found a company than others (Baron 2004).

The illusion of control is similar to self-efficacy and describes the “tendency of entrepreneurs to believe that they can control their own destinies” (Cooper et al. 1988, p.97). Baron (2004), Markman et al. (2002) and Ucbasaran (2007) confirm, that the conviction of high self-efficacy increases the individual’s probability to found a company. High self-efficacy can help to overcome obstacles (Wood & Bandura 1989) and to exploit opportunities (Markman et al. 2002).

Founders might have other cognitive distortions than individuals who do not found companies. Risk perception and disposition is another important cognitive bias (Kahneman & Lovallo 1993; Stam et al. 2010) that influences entrepreneurs. According to current research, founders have a different perception of risk but not necessarily different risk disposition (Simon et al. 2000; Baron 2004). Entrepreneurs “do not have a higher overall propensity or tolerance for risk” (Baron 2004, p.224). This suggests that they do not have a different preference for risk but they simply perceive it differently. Another bias that could explain the differences between cognitive distortions of entrepreneurs and non-entrepreneurs ex-post is “post-decisional bolstering”, where decision makers “tend to bolster or exaggerate the attractiveness of an option after it has been chosen” (Cooper et al. 1988, p.97).

Overconfidence and over-optimism are two other important cognitive biases for entrepreneurs. These two concepts are often discussed together, but indeed describe different

types of biases (Cassar 2010; Forbes 2005; Cooper et al. 1988; Koellinger et al. 2007; Arenius & Minniti 2005). There is a “distinction between overconfidence, which refers to holding beliefs with excessively high precision, and over-optimism, which refers to overestimating the mean of a distribution” (Eisenbach & Schmalz 2013). The two effects are also not implied by each other (Hvide 2002; Eisenbach & Schmalz 2013). Cooper et al. (1988) showed that this optimism is indeed a cognitive bias of the entrepreneurs and not an actual favorable situation in reality. They investigated 2,994 entrepreneurs who recently founded a company and found that “[t]he ones with a background more qualified for entrepreneurship were not more optimistic than others” (Cooper et al. 1988). This result indicates that the optimism is caused by the biased evaluation of the situation and by the fact that their situation is actually better. Cooper also refers to this phenomenon as “entrepreneurial euphoria” (Cooper et al. 1988). Another explanation could be that optimism generally causes higher happiness and emotional stability (Schmalz et al. 2007) which in the second place leads to better evaluation of opportunities and subsequent decision-making, as was discovered in financial market trading (Fenton-O’Creevy et al. 2004; Lo et al. 2005). Arenius and Minniti (2005) observed that entrepreneurs are more confident in their skills than non-entrepreneurs. While only 38% of non-entrepreneurs are confident according to their competencies, 87% of individuals who plan to start a company, 85% of young founders and 82% of experienced entrepreneurs who founded more than 3.5 years ago believe they have the skills necessary to excel in their venture (Arenius & Minniti 2005). These findings not only support the importance of cognitive biases for entrepreneurial activity but also the self-estimation of necessary skills. Koellinger et al. (2007) support the view, that a high self-estimation of the own skills leads to a higher probability of founding a company. Entrepreneurial activity (among other reasons) results from “whether the person believes herself to have the sufficient skills, knowledge and ability to start a business” (Koellinger et al. 2007).

Another attribute of individuals which works as a driver to realize an entrepreneurial intention are the “motivations of people making entrepreneurial decisions” (Shane et al. 2003). Shane et al. (2003) criticize that the founder as a human being is often neglected and too much focus in entrepreneurship research lays on objective measures, like the business opportunity. Motivation increases the probability to found a company (Baron 2004). Important aspects of this motivation are positive affectivity and goal-setting (Baron 2004). Cardon and colleagues (2009) give an overview of studies describing the influence of passion on entrepreneurship. Unfortunately there is no research on motivation of entrepreneurs in more detail, that would allow inferring on specific entrepreneurial characteristics. However, the wish to become an

entrepreneur seems to have a positive impact on pursuing the opportunity and actually founding a company.

### **Findings from literature according to the socio-demographic view**

There are also research findings according to socio-demographic attributes that distinguish founders from other individuals. Not surprisingly the sex of the individual plays an important role. In most countries men found companies more often than women (Hagen et al. 2011; Ullrich 2013; Brixy et al. 2011). Women also tend to found smaller businesses than men (Brixy et al. 2011).

There are various differences in the entrepreneurial activity in different regions. Individuals in metropolitan areas (Stam et al. 2010), especially big centers like Hamburg, Cologne or Munich, found companies more often than individuals from rural areas (Hagen et al. 2011; Brixy et al. 2011). There is no significant difference between Eastern and Western Germany but mainly because Berlin increases the average of the founding activity in Eastern Germany. However, there are differences in the attitudes of the entrepreneurs in Eastern and Western Germany. Individuals from Eastern Germany doubt more often to have the necessary knowledge and skills to start a business. They are also more skeptical according to the chances entrepreneurship offers (Brixy et al. 2011). It is not clear whether these findings are a hint for the effect of extrinsic motivation through the environment or if it solely a selection bias. Either people are inspired by the entrepreneurial culture that surrounds them and subsequently decide to found a company or the people who always wanted to found a company anyways, just move to the areas they consider favorable for entrepreneurial activities. Usually companies are founded in the area where the founder has lived or worked previously (Brixy et al. 2011). This would support the thought, that the influence of the environment plays a role and not only the selection bias. Extrinsic motivation therefore seems to be an important attribute of individuals who actually found businesses.

The economic background of the potential entrepreneur plays a role, too. The household context influences the decision to found a company (Brixy et al. 2011). The Global Entrepreneurship Monitor (2011) distinguishes between two types of entrepreneurs according to their motives. *Opportunity founders* act due to their conviction. They wish to shape their environment, to increase their income or to seize an opportunity. *Necessity founders*, in contrast, tend to found due to a lack of alternative options. Often they come out of unemployment, therefore a connection between foundation activities of necessity founders

and the unemployment rate can be observed (Creutzburg et al. n.d.; Kelley et al. 2011; Brixy et al. 2011; Hagen et al. 2011). Even though the majority (74% in 2010) of the founders in Germany are opportunity founders, compared to other innovation based countries they are on a relatively low level, with more than 80% opportunity founders in most other investigated countries (Brixy et al. 2011). The two groups cannot be sharply separated, as the initial intention can change over time and necessity founders, for example, can develop entrepreneurial passion (Brixy et al. 2011). While the high number of opportunity founders confirm the importance of motivation as an attribute of founders, necessity foundation suggests that the availability of alternative job options is an important attribute as well.

According to the household context, literature also assumes, that it can have an influence on the entrepreneurial activity, if a potential founder has relatives who are also self-employed (Brüderl et al. 1992; Stam et al. 2010). Unfortunately, there is not much empirical data to be found to measure this influence. Arenius and Minniti (2005) show in an empirical study that a higher share of entrepreneurs (53-68%) knows other founders than non-entrepreneurs (32%). However, this fact is not surprising, since meeting other entrepreneurs could merely be an effect of founding a company but not the cause. Another empirical study found that 40% of married self-employed women have a partner who is self-employed as well (Devine 1994). Given the low overall population of self-employed individuals, this is a huge number. It is up to speculation what the causal relationship behind this finding is. It could be that women who admire entrepreneurs both found companies themselves and find self-employed partners attractive. In this case, both would be merely a result of the same driver – the entrepreneurial motivation. On the other hand, it could simply be a matter of exposure. Since many people meet their respective partners at the workplace, female entrepreneurs could find their partners in this community as well.

There are further findings on the age of founders (Reynolds 1997; Cooper et al. 1994; Stam et al. 2010). It is not surprising, that most of the founders start early in their careers. Reynolds (1997) found, that 70% of startups in the US are founded by entrepreneurs of 25-34 years of age.



### 7.3.3.3 Empirical findings about the influence of individual attributes on the probability to found

The following section will present the findings from the analyses of the empirical survey according to the attributes of individuals who actually founded a company. It is not in primary focus of this study to analyze the attributes that are characteristic for these other steps in the entrepreneurial funnel but since the generated data allowed these analyses, they were conducted and are presented as well.

#### Methodology

The data from the survey was analyzed using binary logistic regression, the statistical method going back to Nobel Prize winners Daniel McFadden and James Heckmann (application of method in this study based on Brosius 2004; Bühl 2006). The explanatory variables used as input factors are the personal attributes described in section 6.6, categorized into the economic view (skill), psychological view (will) and sociological view (socio-demographics). The dependent variable represents the funnel step the survey participant has reached. To include this information in the binary logistic regression model, the variable *Funnelstep* with initially five values representing the five funnel steps polled in the survey (n), had to be recoded into four binary dummy variables (n-1). Generally, each funnel step was represented by a separate binary dummy variable, for example the dummy variable *Step IV: Implemented/Founded* was assigned the value 1 for all survey participants who selected the value 4 in the variable *Funnelstep*, which indicates they reached step IV in the funnel. For all others, the value 0 was assigned. Funnel step 0 (*Foundation not an option*) was not coded in a binary dummy variable, to represent the reference category. Since the choice of the funnel step was a forced question in the survey, which could not be left blank, if all the other binary variables indicating the single funnel steps had the value 0, the funnel step of the survey participant has to be the reference category *step 0: Foundation not an option*. A separate binary logistic regression analysis was conducted for each single one of the four binary dummy variables as the dependent variable. The results were juxtaposed next to each other in the following table to illustrate similarities and differences.

An alternative statistical method which could have used instead of the binary logistic regression is the multinomial logistic regression (Bühl 2006; Brosius 2004). This method would not require the recoding into multiple binary variables, as it is applicable with variables with multiple values. The disadvantages of this method are, however, that the power of the



model is lower and that the whole model has to be interpreted at once, and not one single funnel step in focus can be analyzed separately. The binary logistic regression allows interpreting each funnel step by itself and moreover has lower requirements (e.g., according to proportional odds). Also, the use of the binary logistic regression is a common approach in related research in economic sciences. Rotefoss and Kolvereid (2005) for example used the same approach in a comparable study.

## Results

Figure 61 shows the results of the analyses. The odds ratio Exp(B) in the table represents a measure of association. A ratio >1 shows that the independent variable has a positive association with the dependent variable. A ratio <1 indicates a negative association (Brosius 2004; Bühl 2006; Rotefoss & Kolvereid 2005).

Explanatory variables	Dependent variables											
	Step 1: Potential entrepreneur			Step 2: Business idea generated			Step 3: Positive evaluation of idea			Step 4: Implemented/ Founded		
	B	Exp(B)	Sig.	B	Exp(B)	Sig.	B	Exp(B)	Sig.	B	Exp(B)	Sig.
<b>Economic view (Skill)</b>												
Education	-.011	.989	.912	.106	1.112	.241	-.123	.885	.338	.033	1.033	.742
Education_ranking	.080	1.083	.073 *	-.027	.973	.476	-.054	.948	.329	-.015	.985	.717
Languages	.007	1.007	.960	.015	1.015	.909	-.238	.788	.270	.057	1.059	.688
Work_experience	-.087	.917	.213	.062	1.064	.285	-.020	.980	.816	.018	1.018	.773
Leadership_Experience	-.153	.858	.204	-.241	.786	.014 **	-.104	.901	.401	.170	1.185	.056 *
Salary	.115	1.121	.067 *	-.105	.900	.065 *	.106	1.112	.239	-.020	.980	.746
Qualification_ranking	-.074	.928	.120	.078	1.081	.101	.041	1.042	.580	.034	1.034	.516
Score_competencies	.366	1.442	.135	-.100	.905	.666	.068	1.071	.854	-.182	.834	.481
<b>Psychological view (Will)</b>												
Will_wannabe	-.327	.721	.010 ***	-.029	.972	.816	.358	1.431	.135	.818	2.266	.000 ***
Will_admire	-.038	.963	.737	.071	1.073	.536	.383	1.467	.098 *	-.242	.785	.067 *
Will_reputation	.069	1.071	.584	.125	1.133	.292	.000	1.000	.998	-.252	.777	.054 *
<b>Sociological view</b>												
Age	-.039	.961	.348	-.020	.980	.625	-.034	.967	.483	.110	1.116	.027 **
Sex	.709	2.032	.036 **	-.209	.811	.529	.379	1.461	.436	-1.033	.356	.012 **
State_east_west	-1.798	.166	.178	-1.225	.294	.260	-.350	.704	.761	1.199	3.318	.217
Relatives_selfemployed	-.231	.794	.467	.122	1.130	.679	-.076	.926	.868	.100	1.105	.760
Constant	-1.166		.567	-1.816		.331	-4.473		.131	-4.713		.029
Overall model fit												
Number of cases included	304			304			304			304		
Initial - 2LL	346.224			339.685			186.888			391.886		
Model - 2LL	283.888			314.690			160.153			267.880		
Model chi-square (incl. Significa	12.355			8.521			17.286**			13.818*		
Nagelkerke R <sup>2</sup>	0.273			0.117			0.183			0.462		
Cox & Snell R <sup>2</sup>	0.185			0.079			0.084			0.335		
Overall hit ratio	75.0%			76.3%			91.1%			79.9%		

\*:  $p \leq 0.1$ ; \*\*:  $p \leq 0.05$ ; \*\*\*:  $p \leq 0.01$

**Fig. 61:** Empirical findings on the effect of all explanatory variables on the odds of reaching different steps in the Entrepreneurial Funnel

The analyses show significant connections between certain personal attributes of the entrepreneur and the funnel step he/she reached. In the category of the economic view (skill), longer leadership experience influences the probability to reach funnel step IV: *Founded* with moderate significance ( $p < 0.1$ ). The odds of reaching the funnel step of actually founding a company are also strongly and influenced by attributes according to the psychological view (will). The intrinsic motivation caused by the wish to be an entrepreneur seems to increase the odds to dare founding a company strongly and highly significantly ( $p < 0.01$ ). This attribute has by far the greatest influence and highest significance of all personal characteristics of the individuals. Interestingly enough, the estimation of the reputation of entrepreneurs in the social environment and the personal admiration of other entrepreneurs has a negative association with the odds of actually founding a company, however only with moderate significance ( $p < 0.1$ ). If this result can be trusted, even though the significance is rather low, it could be interpreted in a way that nascent entrepreneurs who are intrinsically motivated by the dream to found a company actually do so, while others who are only driven by external recognition and the reputation of founders are less likely to finally dare to found. The socio-demographic attributes of an entrepreneur that influence the odds of actually founding significantly ( $p < 0.05$ ) are the age and sex of the entrepreneur. Men have a higher chance of starting a company than women. In the analyses men are coded with 1, women with 2, therefore a negative association favors men. A higher age is associated with higher odds of founding a company. This result has to be interpreted keeping the composition of the sample in mind. The mean value of the age in the sample is 30.01 with the majority of the age distribution reaching from 20 to 40. Therefore a higher age in this case means a tendency rather towards 40 than towards 20. Potential entrepreneurs in their 30s might therefore be most likely to actually founding a company, which is not too surprising.

#### **7.3.3.4 Summary of individual attributes influencing actual foundations of companies**

The following list will summarize the personal attributes of individuals that can be associated with the probabilities of actually founding a company according to literature review and empirical findings from this study. The selection of arguments from literature is based on a qualitative evaluation of the extent of evidence of the literature sources.

- The *wish to become a founder* increases the probability of foundation.
- *Previous experience* (general work experience, industry expertise, leadership experience, entrepreneurial experience) increases the probability of foundation.

- A higher level of *education, skills and knowledge* increases the probability of foundation.
- *Pronounced cognitive biases* increase the probability of foundation (especially illusion of control/self-efficacy, risk perception, overconfidence and over-optimism).
- A *high self-estimation of competencies* increases the probability of foundation.
- A *broad range of competencies* increases the probability of foundation.
- *Women* found less than men.
- *Living in a metropolitan area* increases the probability of foundation.
- The *lack of alternative occupation options* increases the probability of foundation.

### **7.3.4 Who succeeds? The influence of individual attributes on the probability to succeed with a venture**

After having investigated the attributes of entrepreneurs who are afraid of founding and who actually found, the following section will take a closer look at the attributes of entrepreneurs who founded a company and succeeded with it. The examination of these attributes will be based on a literature review. As discussed previously, there are multiple definitions of success and failure currently used in literature (Watson & Everett 1993). The most common include pure survival after a certain amount of years (usually around 3.5 years after foundation), sufficient profits and high growth (see e.g., Brüderl et al. 1992; Markman & Baron 2003; De Brentani 1995; Cooper et al. 1988).

Human Capital Theory (e.g., Becker 1975) and Competence-based Theory of the Firm (CbTF) (Freiling et al. 2008) can build the theoretical fundament of this part of the study. The Competence-based Theory of the Firm (CbTF) can explain the venture survival with the competencies of the organization (Freiling et al. 2008). Human Capital Theory can build the connection between the individual capabilities and competencies of the individual and the competences of the organization they work for (Becker 1975; Davidsson & Honig 2003; Bates 1990; Werner 2011; Hatch & Dyer 2004; Pennings et al. 1998; Cooper et al. 1994). Therefore an argument can be made that the individual attributes of the entrepreneur can have an influence on the survival of his/her venture.

#### **7.3.4.1 Prerequisite: Do the attributes of the individual founder actually influence venture success?**

Prior research mostly supports the theoretical connection mentioned above, even though there are some studies raising the question whether the influence of the entrepreneur as a person is really significant or only environmental influences or simply chance determine success (Ong et al. 2010; Barney 1986; Gompers et al. 2006). Most research studies agree that founder is indeed the main driver of success (Brüderl et al. 1992; Bates 1990; Jo & Lee 1996; Markman & Baron 2003; Stuart & Abetti 1990; Herron & Robinson 1993; Chandler & Hanks 1994; Storey 1994; Brüderl & Preisendörfer 2000; Lee & Peterson 2000; Colombo & Grilli 2007; Freiling & Wessels 2010). Human Capital Theory (e.g., Becker 1975) builds the theoretical

basis for this view and “identifies individual characteristics of the founder as important prerequisites for survival” (Brüderl et al. 1992). These individual characteristics of the entrepreneur are not only relevant for business success but also for business failure. While there can be numerous causes of failure, the individual properties of the entrepreneur play a key role (Brüderl et al. 1992; Brüderl et al. 1991; Aldrich & Zimmer 1986).

While there is broad support, that the individual attributes in general do matter, it is not clear, which attributes are relevant and which are not. Freiling et al. (2010) take the perspective of managerial shortfalls, which can cause failure. Important shortfalls in this context are lacking management skills, industry expertise, marketing skills and insufficient business planning. Markman and Baron (2003) “suggest that the closer the match between entrepreneurs’ personal characteristics and the requirements of being an entrepreneur (e.g., creating new companies by transforming discoveries into marketable items) [are], the more successful they will be” (Markman & Baron 2003). What these requirements are, is the research focus of many recent studies. An overview will be given in the following section.

Despite the broad agreement, there is also critique about the approach that entrepreneurial success can be predicted by the individual characteristics of the founder. The critics argue that entrepreneurial success is caused by the characteristics of the organization and the environment, rather than the characteristics of the entrepreneur as an individual. Reasons for this argument are, amongst others, that no strong empirical evidence could be found to support the approach in identifying entrepreneurial traits and that there is no substantial progress either in comparable approaches in the field of leadership research (Brüderl et al. 1992). Additionally to the skepticism about empirical results, there are also arguments which are based on various theories. These theories are not in focus of this study, but the arguments will briefly be mentioned as reference for further reading. Modern organizational sociology views organizations as political entities, where the activities and outcomes result from dynamics of coalitions within it (Brüderl et al. 1992). “Modern organizational sociology is skeptical of endeavors that associate organizational outcomes like success or survival with attributes of individual” (Brüderl et al. 1992). The focus of contingency theory among others lays on the organizational structures and their adaptation to environmental conditions and technologies (Brüderl et al. 1992). Furthermore, the resource dependence theory (Aldrich & Pfeffer 1976) and ecological approaches (Aldrich & Pfeffer 1976; Hannan & Freeman 1977) focus on external forces like disturbances from the environment and uncertainty (Brüderl et

al. 1992) and account success or failure of a venture primarily to these factors, rather than to the personal attributes of the entrepreneur.

Building on the above discussion, it seems obvious that the characteristics of the individual are important for success or failure of his/her venture but of course there are other influences, too. An important example for these influences is the initial setup of the company. The capital endowment a company starts with is an indicator for the later success or failure (Cooper et al. 1988). The same applies to the initial size of the startup, for example in terms of the number of employees (Brüderl et al. 1992) or the number of partners (Cooper et al. 1988). The design of the organizational characteristics plays a role as well. “[O]rganizational strategies, especially businesses aiming at a national market, are the most important determinants of business survival“ (Brüderl et al. 1992).

Both, the attributes of the individual (Brüderl et al. 1992; Brüderl et al. 1991; Aldrich & Zimmer 1986) and the internal and external influences (Brüderl et al. 1992; Cooper et al. 1988) have an impact on success or failure. Internal influences, like the setup of the organization (Brüderl et al. 1992) or the initial capital endowment (Cooper et al. 1988) can be influenced by the founder as well. So, on many of these influencing factors, there is at least an indirect effect of the founder as an individual. The external influences should apply for all new ventures equally, so they cannot generally be alone used to explain the success of one company and the failure of another. Independently of the discussion which factors have the highest influence, it makes sense to investigate the connection of the entrepreneurial attributes on firm survival.

#### **7.3.4.2 Findings from literature about the influence of individual attributes of entrepreneurs on venture success**

To structure the attributes that influence venture success or failure, the same framework will be applied as in the previous sections. Hence, the individual characteristics of the entrepreneur will be categorized according to an economic view (skill), a psychological view (will) and a sociological view (socio-demographics). Please note that since some research studies see success and failure reasons only as mirrored (Freiling et al. 2010; Hansen 2009), some of the success reasons mentioned in this section will be a repetition of arguments already mentioned on the previous section on causes for entrepreneurial failure.

## **Findings from literature according to the economic view (Skill)**

Various research studies show that startup success is driven by the education of the founder. There is broad consensus in research that the amount education has a positive influence on the success of the venture (Chandler & Jansen 1992; Brüderl et al. 1992; Cooper et al. 1988; Cooper et al. 1994; Jo & Lee 1996; Hagen et al. 2011; Stuart & Abetti 1990; Gompers et al. 2006). While most of the research studies agree on the overall importance of education, they vary in some details, for example whether the years of schooling (see e.g., Brüderl et al. 1992) or the level of education (see e.g., Cooper et al. 1988) is more important, or if education beyond an undergraduate degree matters (Stuart & Abetti 1990).

Previous experience seems to matter as well. Four aspects of experience are often highlighted as important for success in a startup: (1) general work experience, (2) experience in the industry, (3) management or leadership experience and (4) self-employment or startup experience. (1) Various studies support the positive influence of years of previous work experience on startup success (Brüderl et al. 1992; Cooper et al. 1988; Cooper et al. 1994; Jo & Lee 1996). Apart from the pure duration of the work experience, Cooper et al. (1988) identify the size of the company of the prior employer as important. Jo and Lee (1996) limit the meaning of general work experience, by identifying only work experience in a relevant field as supportive for startup success. According to their findings, work experience in another field is not sufficient (Jo & Lee 1996). (2) Industry experience seems to positively influence startup success (Brüderl et al. 1992; Cooper et al. 1988; Cooper et al. 1994; Freiling et al. 2010; Jo & Lee 1996). Cooper (1988) defines relevant industry experience as products or customers similar to prior employer (Cooper et al. 1988). This definition is very marketing driven but can certainly be expanded to other functional or technical experience, if these areas play a central role in the new business. A study by the KfW (Hagen et al. 2011) found out that only work experience in a responsible position is connected to startup success. Work experience as a basic laboring worker does not affect startup success positively. (3) Leadership experience is important for startup success (Chandler & Jansen 1992; Brüderl et al. 1992; Cooper et al. 1988). This area of expertise refers to management and decision-making or supervisory experience. (4) Previous startup experience also influences the success of a future venture (Stuart & Abetti 1990; Freiling et al. 2010; Brüderl et al. 1992; Cooper et al. 1988). “The best way to learn about making a company successful is to work in, or better to run a new firm. Time spent in new ventures is dramatically more valuable than time spent in school or large firms” (Stuart & Abetti 1990). Nevertheless there might be special

situations, where work experience might also be harmful for entrepreneurial success, for example if it caused certain mental lock-in effects of the entrepreneur. Under certain conditions, particularly the crisis of the whole industry, work experience might be negative for success, since experienced founders might exit the venture and take on another more promising opportunities (Grilli 2010). However this case certainly represents an exception.

Certain specific skills and competencies can increase a startup's success chances as well (Freiling et al. 2010; Cooper et al. 1994; Markman & Baron 2003; Chandler & Jansen 1992). Management skills are of special importance here in terms of ability to network (Freiling & Wessels 2010) and superior social competencies (Markman & Baron 2003; Freiling & Wessels 2010). The higher the level of these skills, "the greater the likelihood or magnitude of their success" (Markman & Baron 2003). Additionally to these soft skills, Freiling and Wessels (2010) hold specialized knowledge in various business functions accountable for success or failure, for example competencies in the areas of marketing, finance, accounting, taxation, legal, planning, organization or procurement. This sounds reasonable: since new ventures usually start with a very limited amount of employees, there are no experts or specialized departments for each of these business functions. Therefore the founder or his/her team members have to deal with all these issues. This supports the jack-of-all-trades notion, that a broad set of skills leads to entrepreneurial success (Lazear 2004; Wagner 2003; Pichler et al. 2011).

### **Findings from literature according to the psychological view (Will)**

According to the psychological attributes of the founder, the motivation to be an entrepreneur does not only seem to be important for the founding activities but also for making the founded company successful (Cardon et al. 2009; Brixy et al. 2011). Cardon (2009) shows in a conceptual model, how entrepreneurial passion leads to performance. Passion leads to the goal-related cognitions goal challenge, goal commitment and goal striving, which for their part lead to the entrepreneurial behaviors of creative problem solving, persistence and absorption. These lead to entrepreneurial effectiveness by outstanding opportunity recognition, venture creation and venture growth (Cardon et al. 2009). Generally the overall level of motivation decreases in the years after foundation due to a typical disillusionment within the five years after foundation (Schulte 2011) but still those founders who keep up more of their motivation are more successful. Entrepreneurial motivation can also have indirect effects on the venture performance. Brixy et al. (2011) show that the motivation of the



founders has implications on the degree of innovativeness of the venture. More motivated entrepreneurs found more innovative companies. In contrast, founders who start a business due to the lack of alternative options tend more to imitation. Even though, Brixy et al. (2011) draw no conclusion about the effect on economic success, it could be argued that innovative ideas and hence more motivated entrepreneurs have higher success chances. Independently of this, the motivation why an entrepreneur starts a company does not seem to have an effect on its survival chances. Foundations out of unemployment which are supported by the employment office are not more likely to shut down again, than others (Caliendo & Kritikos 2010; Caliendo et al. 2009; Brixy et al. 2011).

Cognitive effects have an influence on venture performance as well. Markman and Baron (2003) highlight the importance of self-efficacy. The more founders think they can shape the environment and their destinies, the higher their chances of success are. While overconfidence is a supporting factor for business foundation (Cassar 2010; Forbes 2005; Cooper et al. 1988; Koellinger et al. 2007; Arenius & Minniti 2005), as described in the previous section, it has a negative influence on the success of ventures, once founded. Koellinger et al. (2007) show „a significant negative correlation between this reported level of entrepreneurial confidence and the approximate survival chances of nascent entrepreneurs“ (Koellinger et al. 2007). This example shows that one and the same attribute of an individual can be supportive and harmful in different funnel steps at once. A high self-estimation of one's skills could have an influence on entrepreneurial success as well. Chandler and Jansen (1992) found a connection between the self-estimation of competencies and success. Founders of successful ventures evaluated their own qualifications higher. However, only the correlation could be observed but not a causal relationship. If the self-confident entrepreneurs get successful, or if success makes them self-confident or if there is a recursive relationship is yet an open question.

### **Findings from literature according to the sociological view (socio-demographics)**

There are not many specific socio-demographic attributes of entrepreneurs to be found in research literature which would influence the prospect success of a startup. While more men found companies than women, there is no difference in the success rate between the two groups, once they founded (Hagen et al. 2011). Also according to the regions, there are no tremendous differences. A study by the KfW (Hagen et al. 2011) found out that the success chances are higher for founders living in Eastern Germany, however the Global Entrepreneurship Monitor assumes this could be driven only by the current lively

entrepreneurial activity in Berlin (Brixy et al. 2011). Some studies see a connection between entrepreneurial predisposition through self-employed relatives as success factors (Brüderl et al. 1992; Cooper et al. 1994; Stam et al. 2010). There are only few research studies available investigating the role of friends and peers. Peers and friends from school seem to have an influence on entrepreneurial activity (Kacperczyk 2013; Falck et al. 2012; Lerner & Malmendier 2013), assumingly through a type of socialization (Falck et al. 2012). Lerner and Malmendier (2013) found that the existence of entrepreneurial peers does have an influence on the foundation activities in a certain way. While less of their friends found companies, the overall success rate of the corresponding companies increases. Lerner and Malmendier (2013) therefore assume that the peer influence mainly reduces the foundation of unpromising ventures. Since ventures with higher capital requirement (>10,000 EUR) tend to be more successful (Hagen et al. 2011), wealthier founders could have advantages in making their business successful (Cooper et al. 1988; Cooper et al. 1994).

#### **7.3.4.3 Summary of individual attributes which influence the success of ventures**

The following list will summarize the personal attributes of entrepreneurs that can be associated with success of their companies according to literature review. The selection is based on a qualitative evaluation of the extent of evidence of the literature sources.

- The *level of education* increases the probability of success.
- The amount of *experience* (work, industry, management, self-employment experience) increases the probability of success.
- *Management skills* increase the probability of success.
- A *broad skill set* in various functions (jack-of-all-trades) increases the probability of success.
- Entrepreneurial *motivation* increases the probability of success.
- *Overconfidence* decreases the probability of success.
- A high level of *self-efficacy* might increase the probability of success.
- A high *self-estimation of one's competencies* might increase the probability of success.

### **7.3.5 Interpretation of results and implications**

This section will summarize the findings from the previous sections according to the personal attributes of potential entrepreneurs associated to fear, probability to found a company and probability to make a founded company successful. Bringing these insights from the previous sections together allows a comparison of the different effects of common attributes. Questions like the following can be answered:

- Are those who face high fear, those who refrain from founding companies?
- Do characteristics which increase the probability of founding a company also increase the probability to make it successful?
- Do those who refrain from founding companies due to high fear have the characteristics that would have enabled them to make the rejected foundation successful?
- Are there attributes which are helpful in one funnel step but not relevant in the following ones?
- Are there even attributes which are helpful in one funnel step but have a negative effect in the following ones?

#### **7.3.5.1 Summary of findings**

The previous parts of this section have shown, that the individual attributes of the potential entrepreneur have an influence on the fear of foundation he/she experiences (c.f. empirical findings in section 7.3.2.3), on the probability to actually found a company (e.g., Stam et al. 2010; Rotefoss & Kolvereid 2005; Dollinger 2003; Shane et al. 2003) and the probability to make it successful (Brüderl et al. 1992; Bates 1990; Jo & Lee 1996; Markman & Baron 2003; Stuart & Abetti 1990; Herron & Robinson 1993; Chandler & Hanks 1994; Storey 1994; Brüderl & Preisendörfer 2000; Lee & Peterson 2000; Colombo & Grilli 2007; Freiling & Wessels 2010). Fear of failure seems to have a direct influence on the probability to found a company and obviously founding a company is a prerequisite for making it successful.

Figure 62 illustrates, which attributes of an individual are associated with the probabilities of experiencing fear, founding a company and making a founded company successful. According to the skill-related attributes following an economic view, experience takes an important role, increasing the procession to the next step all across the entrepreneurial process. However, only leadership experience has an effect on the fear to found a company, while besides

leadership experience also general work experience, industry experience and entrepreneurial experience have an effect both on the probability of founding a company and of making it successful. A high level (Chandler & Jansen 1992; Brüderl et al. 1992; Cooper et al. 1988; Cooper et al. 1994; Jo & Lee 1996; Hagen et al. 2011; Stuart & Abetti 1990; Gompers et al. 2006) and broad set (Lazear 2004; Wagner 2003; Pichler et al. 2011) of education leads to higher chances of founding a company and making it successful but does not have influence on the fear of founding a company. Profound management skills only have an influence on the odds of making a startup successful but not on the chances of founding one, or the fear to do so (Brüderl et al. 1992; Cooper et al. 1988; Cooper et al. 1994; Jo & Lee 1996). According to the will-related attributes following a psychological view, high intrinsic motivation to become an entrepreneur is helpful to decrease fear and increase the chances of founding a company and making it successful (Shane et al. 2003; Cardon et al. 2005; Baum 1994; Baron 2004). The same applies to the self-estimation of the own competencies and qualification to be an entrepreneur (Cooper et al. 1988). Here it is notable that the self-estimation has nothing to do with the objectively measurable actual qualification, for example the highest educative degree or the achieved amount of salary at a job (for details see section on empirical findings on fear). Unfortunately, it was not possible to include tests for cognitive biases in the questionnaire of this survey due to length restrictions and scope of the study (c.f. limitations section 8.4), so no statement can be made about the influence of these biases on fear. But there are studies available according to the influence of cognitive biases on the probabilities of founding a company (e.g., Koellinger et al. 2007; McGrath 1999; Arenius & Minniti 2005; Baron 2004) and making it successful (e.g., Koellinger et al. 2007; Chandler & Jansen 1992). While all of the investigated cognitive biases are able to increase the chances of actually daring to found, only self-efficacy or illusion of control still have an increasing effect, when it comes to the probability of making a company successful. Overconfidence and over-optimism take an opposite effect in this step. While they increase the chances of founding, they actually decrease the chances of making the company successful (Cassar 2010; Forbes 2005; Cooper et al. 1988; Koellinger et al. 2007; Arenius & Minniti 2005). Therefore, they seem to be potentially dangerous cognitive biases, as they have the potential to lure people on to destruction. The anticipation of a high number of failure reasons causes fear of founding. If it really holds back people from doing so, is unfortunately not researched yet. It could be that this attribute has a certain overlap with the cognitive bias of over-optimism. Imagining many failure reasons does not seem to be a very optimistic attitude. There are very few socio-demographic attributes, which have an influence here. Women generally experience higher

fear and also lower probabilities of founding companies (Brixy et al. 2011; Zahn-Waxler et al. 1996). However they are equally likely to make a startup successful (Hagen et al. 2011). There also seems to be a 'right' age to found a company founders (Reynolds 1997; Cooper et al. 1994; Stam et al. 2010), even though age does neither influence the amount of fear nor the capabilities of achieving success with the founded business. Living in a metropolitan area and having a lack of alternative employment options increase the chances of founding a company but have no influence of being successful with it (Caliendo & Kritikos 2010; Caliendo et al. 2009; Brixy et al. 2011). Since these attributes were not included in the research on fear, no statement can be made about their influence on an entrepreneur's fear.

				Influence of attribute on probability	
				strong evidence	moderate evidence
Increasing					
Decreasing					
Not researched, or unclear results					
Researched, but no connection found					
				<b>Probability of proceeding to the next funnel step</b>	
<b>Attributes of potential Entrepreneur</b>	<b>Probability of feeling lower fear</b>	<b>Probability of actually founding a company</b>	<b>Probability of achieving a successful company</b>		
Economic view (skill)	Experience	Experience	Experience		
	- leadership experience <sup>1</sup>	- leadership experience <sup>1,2</sup>	- leadership experience <sup>2</sup>		
	x	- industry experience <sup>2</sup>	- industry experience <sup>2</sup>		
	x	- work experience <sup>2</sup>	- work experience <sup>2</sup>		
	x	- entrepreneurial experience <sup>2</sup>	- entrepreneurial experience <sup>2</sup>		
	x	Education <sup>2</sup>	Education <sup>2</sup>		
Psychological view (will)	x	Broad range of competencies <sup>2</sup>	Broad range of competencies <sup>2</sup>		
	x	x	Management skills <sup>2</sup>		
	x				
Sociological view (socio-demographics)	Intrinsic motivation (wish to be founder) <sup>1</sup>	Intrinsic motivation (wish to be founder) <sup>1,(2)</sup>	Intrinsic motivation (wish to be founder) <sup>2</sup>		
	Self-estimation of own qualities <sup>1</sup>	Self-estimation of own qualities <sup>2</sup>	Self-estimation of own qualities <sup>2</sup>		
	?	Cognitive biases	Cognitive biases		
		- self-efficacy/ illusion of control <sup>2</sup>	- self-efficacy/ illusion of control <sup>2</sup>		
		- risk perception <sup>2</sup>	- overconfidence, over-optimism <sup>2</sup>		
	Anticipation of many failure reasons <sup>1</sup>	?	?		
	female <sup>1,2</sup>	female <sup>1,2</sup>	x		
	x	Right age <sup>1,2</sup>	x		
	?	Metropolitan area <sup>2</sup>	x		
	?	Lack of alternative options <sup>2</sup>	x		

1: Findings from primary research of this study

2: Findings from secondary research (literature review)

**Fig. 62:** Overview of personal attributes influencing the probabilities of facing fear, founding a company and making it successful

### 7.3.5.2 Interpretation

Taking a top level view on the attributes and their influence along the entrepreneurial process, allows assuming some general patterns: (I) Attributes associated with skills seem to take an increasing importance along the process. Only one skill attribute has an influence on fear,

however to actually found a company an entrepreneur needs more, and to make a company successful even more. (II) Psychological characteristics, like cognitive biases, seem to play a particular role, when it comes to taking the decision whether to found the company or not. (III) Socio-demographic attributes also seem to be mainly relevant for the foundation decision. (IV) Generally, most of the attributes have a constant effect of either driving an entrepreneur through the process or eliminating him/her from it, across the process. The only exceptions are overconfidence and over-optimism, which have an increasing effect on the probability to reach the next step when it comes to founding but a decreasing effect when it comes to making a company successful (Cassar 2010; Forbes 2005; Cooper et al. 1988; Koellinger et al. 2007; Arenius & Minniti 2005). (V) There are characteristics which are helpful to succeed (i.e., reach the next milestone) in one funnel step but which are not helpful in other steps. The tendency, however, is that characteristics which were helpful to reach this funnel step are also helpful in the subsequent steps, but on top of that, additional characteristics are required. It seems, (apart from socio-demographics) more and more attributes are required when moving through the process. However, it is open if these observations are subject to a selection bias, since individuals in a particular funnel step who possess the characteristics favorable to reach this step are overrepresented in the base population this step. Generally the interpretations of the findings are in line with the applied theories. Human Capital theory (e.g., Becker 1975) together with Competence-based Theory of the Firm (CbTF) (Freiling et al. 2008) can support the causal relationship between competencies of the individual and firm survival. When it comes to the decision whether to found a company or not, the similarities between attributes individuals (esp. leadership experience and intrinsic motivation – c.f. also section 7.3.2.4) of with low fear and individuals who actually found support the connection between fear and foundation. This is generally in line with Affect as Information theory (Gohm & Clore 2002; Clore et al. 2001), arguing that emotions can influence the entrepreneurial decision-making.

### **7.3.5.3 Implications**

The findings suggest a number of direct implications and recommendations. (A) There is no difference in fear of founding a company between highly and lowly skilled individuals, even though, the highly skilled have less reason to be afraid, as their chances to make a founded company successful are much higher. Academic education could take a contribution here, encouraging the highly educated and reducing their fear. Studies show that entrepreneurial education programs have a positive influence on entrepreneurial intention of students

(Souitaris et al. 2007). Vice versa, it has to be considered, if individuals with a low skill profile who do not face a lot of fear should be discouraged from founding a company, since their success chances will be rather low (Chandler & Jansen 1992; Brüderl et al. 1992; Cooper et al. 1988; Cooper et al. 1994; Jo & Lee 1996; Hagen et al. 2011; Stuart & Abetti 1990; Gompers et al. 2006). However, this is a bold thought. Less controversial would be the attempt to help them to get a realistic estimation of the risks and their chances, to give them the possibility to close qualification gaps before founding. (B) Over-optimism and overconfidence are double-edged swords. On the one hand, they encourage foundations, on the other hand they are a source of entrepreneurial failure (Cassar 2010; Forbes 2005; Cooper et al. 1988; Koellinger et al. 2007; Arenius & Minniti 2005). An optimum, yet not easy implementable intervention in the favor of entrepreneurial success would be to intervene only after the startup has been founded, since these cognitive biases are helpful before. After the foundation, however, the young entrepreneurs should be made aware of their biases and supported in their decision-making to avoid the threat of wrong decisions. This role is predestinated for mentors of startups, entrepreneurship consultants or supervisory boards. Academic institutions, investors and startup foundation programs like business plan competitions, could play an important role here. (C) According to socio-demographic attributes, especially women and potential founders from rural areas are an untapped potential of entrepreneurial activity (Brixy et al. 2011). Both groups found fewer companies but would not have any lower chances of being successful, if they tried (Brixy et al. 2011). To encourage women is a challenge that has to be tackled from different sides. Academic education can take a contribution in addressing the issue and encouraging and coaching female students to consider becoming entrepreneurs. Policymakers could issue special supporting programs targeting women, for example through public subsidies or credit lines for female entrepreneurs, special business plan competitions or programs that help to make being self-employed an attractive option, for example while taking time off to start a family. Media and female role models could also play an important part in encouraging more women to enter entrepreneurship. To support foundations in rural areas, the universities and other educational institutions in these areas could play a major role, not only by educating and encouraging their students but also by building up entrepreneurial networks. One reason for the lower foundation activities in rural areas could be the lower concentration of the entrepreneurial network and hence lower chances to find a business partner, exchange ideas, etc. Public programs could, besides women, particularly support foundations in rural areas. (D) Further suggestions base on the findings about the necessity founders. Since individuals coming out



of unemployment or unattractive alternative occupation options have a higher probability of founding a company and the same chances as others of making it successful (Caliendo & Kritikos 2010; Schanne & Weyh 2009; Brixy et al. 2011), the current instruments in place fostering self-employment seem to be fruitful and should hence be continued or even strengthened. (E) The findings suggest new ways of forecasting entrepreneurial exploitation and success based on the attributes of the founder. This could be for example helpful for investors, banks or business plan competitions. While higher education, broad competencies and management skills are quite obvious and commonly consulted attributes to evaluate a founder's chances of success (e.g., Wagner 2003; Chandler & Jansen 1992; Brüderl et al. 1992; Cooper et al. 1988; Cooper et al. 1994; Jo & Lee 1996; Hagen et al. 2011; Stuart & Abetti 1990; Gompers et al. 2006), particularly the definite will to become an entrepreneur could currently be neglected. Even though it is a soft attribute that is hard to measure, it is highly important, as it is a major driver for success. Investors – and indeed also founders themselves – should focus more on finding out, if the entrepreneur really wants to do this. Objective measures or instruments of commitment could be created to find out.

## **8. Final summary and outlook**

This dissertation investigated the role of fear in entrepreneurship, in particular according to the decision whether to found a company or not. This last section will summarize the key findings and their practical application and give an outlook for future research.

### **8.1 Final summary**

Entrepreneurial failure generally is an understudied area in research (Thornhill & Amit 2003; Freiling & Wessels 2010). The few existing studies focus on failure after foundation (e.g., Freiling & Estevão 2005; Fallgatter 2005; Hansen 2009; Freiling 2009a; Brüderl et al. 1992). There is only limited research about the decision to found (e.g., Stam et al. 2010; Rotefoss & Kolvereid 2005; Dollinger 2003; Shane et al. 2003) and thus failure before founding a company. Also emotions in economics (e.g., Cardon et al. 2005; Foo 2011; Mitchell et al. 2007; Welpe et al. 2011b) and especially fear in entrepreneurship (e.g., Welpe et al. 2012; Krause 2004; Gray 1987, p.27; Clore & Palmer 2009; Baron 2008; Lerner & Keltner 2000; Foo et al. 2009) is insufficiently researched (Goss 2008; Foo 2011). Focusing on the role of fear for entrepreneurial failure before foundation, this study helps to fill the gaps in both research areas.

The Entrepreneurial Funnel proved to be a helpful framework in this type of research. It provides structure and helps to track characteristics of the potential founder and potential failure causes of the company through the various steps in the entrepreneurial process. Unlike other concepts of the entrepreneurial process (Bull & Willard 1993; Kelley et al. 2011; Sánchez López 2012; Bhawe 1994), the Entrepreneurial Funnel introduces concrete approaches to quantify the process, especially a novel approach to calculate the odds of proceeding to the next steps without the need of an extensive longitudinal study. The framework of the Entrepreneurial Funnel also facilitates to start a discussion that moving through the entrepreneurial process might not be a natural sequence, but instead principles of path dependence (David 1985; David 2001; Arthur 1989; Arthur 1990; Stack & Gartland 2003; Sydow et al. 2009) lead out of the Funnel at each step. Staying in the process and achieving to found a company and to make it successful hence might require multiple breaches of the determined path.

The critical role of fear in the process step of founding a company was highlighted (Kelley et al. 2011; Welpé et al. 2011b; Arenius & Minniti 2005). It was shown, that a higher fear to found actually leads to a lower probability of foundation. The study identified two distinct groups according to fear of founding a company, one which is rather fearful, the other rather fearless. There are two characteristics with major influence on the fear of foundation, differentiating these two groups: more leadership experience and intrinsic motivation to become an entrepreneur reduce the fear of starting a company. Also, the overall amount of fear of founding a company decreases along the entrepreneurial process. The fear of founding a company is predominantly caused by the fear of a potential failure. This fear of failure consists mainly of the components perceived probability (belief) and perceived valuation (preference) of failure (based on Kahneman & Tversky 1979) and is therefore a rather rational, however not objective evaluation of the expected utility of the potential downside of foundation. Most nascent founders rate a failure with severe negative impact on their lives (Meissner & Welpé 2013; Landier 2006; Ullrich 2013; McGrath 1999). This valuation of the potential failure also is the more important driver for the fear of failure across all funnel steps, except the step immediately before foundation, where the probability to fail predominates. This phenomenon can be explained the “cold feet” effect (Epstein & Kopylov 2007), a dynamic change of risk preference towards the moment of decision.

The study presented the actual failure causes of startups and their importance from a literature review (e.g., Freiling & Estevão 2005; Fallgatter 2005; Hansen 2009; Freiling 2009a; Brüderl et al. 1992) as well as the failure causes potential entrepreneurs anticipate from the empirical survey. Most of these actual and expected failure causes do not match, showing that potential entrepreneurs do not have a realistic view about the actual pitfalls of a startup. Apart from the matching (reasonable) failure causes, there are overrated reasons which are anticipated but do not often occur in reality and blind spots, which are not anticipated but observed to happen frequently in reality. The more pitfalls a nascent founder can imagine, the more fear he/she experiences. Also, the more causes are expected, which actually happen in reality, the more fear of foundation and fear of failure is experienced, whereas expected causes which are not often observed in reality have no influence on fear. A more realistic view of the pitfalls therefore leads to higher fear. The realistic evaluation of the importance of failure causes is also influenced by the characteristics of the individual entrepreneur. There seems to be a group of “ignorant narcissists” with unjustifiable high self-confidence and low accuracy in anticipating realistic failure causes, that is resistant to fear and hence with a high chance of actually founding. This group is particularly at risk of failing with the once started company,

due to its misjudgment of the own competencies (Cooper et al. 1988) and the pitfalls of a startup.

The personal characteristics of an entrepreneur do not only have an influence on the accuracy of estimating the realistic pitfalls but also on the amount of experienced fear, the probability to actually found a company (Stam et al. 2010; Rotefoss & Kolvereid 2005; Dollinger 2003; Shane et al. 2003) and the probability to lead it to success (Brüderl et al. 1992; Bates 1990; Jo & Lee 1996; Markman & Baron 2003; Stuart & Abetti 1990; Herron & Robinson 1993; Chandler & Hanks 1994; Storey 1994; Brüderl & Preisendörfer 2000; Lee & Peterson 2000; Colombo & Grilli 2007; Freiling & Wessels 2010). The attributes with an influence on one or more of the probabilities of experiencing fear, founding a company and making it successful were presented in detail. Generally, it can be said that the importance of the competency profile, like education and experience, of the individual increases along the entrepreneurial process. Psychological aspects, like high intrinsic motivation to become an entrepreneur or cognitive distortions, and socio-demographic aspects, like being male and from a metropolitan area, are of particular importance at the step of the foundation decision. Most attributes of the individual entrepreneur have constant supporting or hindering effects throughout the funnel. Only the two attributes overconfidence and over-optimism have a positive effect in the earlier stages, e.g., according to experiencing low fear and founding the company, but a negative in the later ones, i.e. not achieving to make it successful (Cassar 2010; Forbes 2005; Cooper et al. 1988; Koellinger et al. 2007; Arenius & Minniti 2005). There are some attributes which are only helpful in certain funnel steps but not in others. However, there is the tendency that the attributes which are helpful in one step, will also be needed in the next one - but on top, additional attributes are required. Generally, there are more attributes associated with the later funnel steps, even though it is not sure whether this is not just a selection bias in the observation. Nevertheless, the findings indicate that there is a broad set of characteristics necessary to move all the way through the entrepreneurial process towards a successful company (Lazear 2004; Wagner 2003; Pichler et al. 2011). In the stage of deciding whether to found a company or not, the two most important characteristics required to experience low fear and hence to have a high chance of actually founding the company are the amount of leadership experience and the intrinsic motivation of becoming an entrepreneur.

## 8.2 Application of insights

The findings of this study can be translated into concrete recommendations to achieve the macro-economic aim to increase the foundation rate of promising startups and the survival rate of existing companies in a country. It also has micro-economic implications for founders of startups to increase their chances of success and for investors and institutions to forecast the success probability of new ventures.

### Macro-economic perspective

*Educational institutions* play an important role in improving entrepreneurial activity in an economy in two ways. First, they can contribute in imparting required knowledge to increase the success rates and second they can encourage the intention to actually found a venture (Welpé et al. 2011b). According to knowledge, a more realistic view of the common pitfalls of startups and conferring countermeasures should be imparted. It is also necessary to equip the students with the skills necessary for a successful foundation or to at least make them aware of which competencies are favorable, so that they can consider it in the composition of their team. Also, a currently neglected but highly important area is education about emotions, particularly fear in entrepreneurial activity. Solely the knowledge that fear is a normal phenomenon before founding, could improve to cope with it (Welpé et al. 2011b). Research showed that academic education can also increase the entrepreneurial intention among students (Souitaris et al. 2007). Apart from raising the entrepreneurial motivation of students in general, educational institutions could contribute in particularly encouraging certain groups in founding ventures. Especially the highly qualified should be encouraged to dare to found companies and to see starting a business as a realistic alternative to their multiple opportunities of well-paid employment. Confrontation with fear plays an important role here (Welpé et al. 2011b), as highly qualified founders currently face the same fear as lowly qualified ones, even though they have much higher chances of being successful (Brüderl et al. 1992; Bates 1990; Jo & Lee 1996; Markman & Baron 2003; Stuart & Abetti 1990; Herron & Robinson 1993; Chandler & Hanks 1994; Storey 1994; Brüderl & Preisendörfer 2000; Lee & Peterson 2000; Colombo & Grilli 2007; Freiling & Wessels 2010). Additionally to the effort of convincing highly qualified entrepreneurs that they have less reason to be fearful, education can contribute by teaching them methods on how to deal with fear (Schwarz & Clore, Gerald L. 1983; Welpé et al. 2011b). Educational institutions could also vice versa consider discouraging lowly skilled potential entrepreneurs or at least give them realistic view

on their lower chances of success and help them to close their competency gaps (Freiling 2009a) before founding. Education can also play an important role in encouraging women and founders in rural areas, both untapped potentials of entrepreneurial activity (Brixy et al. 2011). Apart from encouragement through education, special academic networks of female entrepreneurs or in rural areas should be built up.

*Governmental politics* can also contribute to improvements of the surrounding conditions to encourage entrepreneurial activity. The most important aspect here is to decrease the fear of failure of potential entrepreneurs through making the impact of a failure on the individual entrepreneur less severe. To do so, the elements of the negative impact have to be explored and mitigated. For example the risk of a private insolvency could be diluted by decreasing the personal insolvency recovery time for entrepreneurs from six (§ 286 InsO) to three years. Another example is to decrease the personal legal liabilities of entrepreneurs (§ 43 GmbHG, Meissner & Welp 2013) by taking into account that especially novice founders neither possess all the required knowledge nor the organizational infrastructure (Politis 2008; Baron & Ensley 2006; Westhead et al. 2005; Westhead et al. 2003; Ucbasaran et al. 2003) to be aware of and to deal with all their current responsibilities. Currently there is a huge inadequacy between the legal liabilities of an employee (very limited) (Weigelt 2011; BAG 1994) and of an entrepreneur (quite extensive) (§ 43 GmbHG). A similar protection of employees from legal liabilities should be installed for founders. Of course, this is a challenging endeavor, because a limitation of liabilities also bears the potential for abuse. Policymaker should also target certain entrepreneurial groups in particular. Women and founders in rural areas should be particularly supported in their entrepreneurial intentions (Brixy et al. 2011). An increase in the entrepreneurial activity in Germany in the last years can be explained by the increased engagement of women (Brixy et al. 2011). This shows the direct effect of tapping the potential of female entrepreneurs on the overall entrepreneurial activity in Germany. This could be achieved by special supporting programs, for example subsidies, special credit lines, special business plan competitions, better conditions when having a family, etc. Currently there are already programs in place to target particular groups with support (Lowski 2006). The support of necessity founders coming out of unemployment has proved to be very successful, as it achieves higher foundation rates of this group without any no lower chances of success (Caliendo & Kritikos 2010; Schanne & Weyh 2009; Brixy et al. 2011). These programs should be continued or further strengthened.

The findings also call for a mindset shift in *society*. Failure should be accepted as a normal part of entrepreneurship and failed entrepreneurs should be appreciated for their courage and achievements and seen as valuable resources of further entrepreneurial activity. Currently, failure is rather seen as a stigma in Germany (Ullrich 2013; Landier 2006; McGrath 1999). Failed entrepreneurs are often considered losers, even though often they were not able to help it and have lower chances to finance a new venture. In the US the perception is completely opposite. There, failure is considered a normal part of the learning process and hence failed founders can easily re-start (Landier 2006). Not only does this attitude in Germany waste valuable potential of experienced founders, it also decreases the quality of the ventures. Landier (2006) argues that since failure is a stigma, good entrepreneurs are reluctant to terminate bad projects and start more promising ones. They rather try to keep them alive to avoid obvious failure and not getting a second chance. This creates self-reinforcing dynamics: Since whoever manages to keep a bad company alive does so, the companies who still fail and their corresponding founders are perceived as even worse. This further increases the pressure to keep a “zombie”-company alive (Landier 2006). Also women should be encouraged to consider founding a company a relevant option (Brixy et al. 2011). Of course, it is hard to induce a different attitude in society. Multipliers and opinion makers can play an important role here, like media, investors, banks (private banks and semi-public banks like KfW or LfA) and institutions (business plan competitions, scholarships, sponsors, etc.).

Also further *research* in this area is required. An outlook for further research questions will be given in the next section.

### **Micro-economics**

There are also micro-economic consequences of the research findings of this study. *Entrepreneurs* should be aware of their own capabilities and of the capabilities necessary to be successful. This can help them to improve their success chances and to mitigate their risk of failure by acquiring lacking competencies internally through education or externally through team members or external partners (e.g., tax advisors, consultants, etc.) (Freiling 2009a). They should also make an effort to get a realistic picture of the common pitfalls of newly founded ventures to prepare for the challenges. This can also help them not to be afraid of too many failure causes. Reducing their fear in that way increases the chances of actually daring to found the company (Kelley et al. 2011; Welpé et al. 2011b; Arenius & Minniti 2005). Generally it is important for the individual entrepreneur to be aware of the role of



emotions and how they influence rational decision-making (Schwarz & Clore, Gerald L. 1983; Welppe et al. 2011b). This can for example help to counteract the phenomenon of “cold feet” (Epstein & Kopylov 2007) before foundation by dividing the foundation decision into smaller parts, like keeping the previous job while formally founding the company, taking a sabbatical only, starting a small pilot project, etc., or by installing side bets and creating commitment in the founding team.

For *investors* or any other external parties involved directly in the new venture, like business angels, venture capitalists, incubators, foundations, scholarships, etc., the study suggests implications as well. First of all, the findings of this study can help them to identify promising entrepreneurs and ventures. The findings can help to forecast the success chances of individuals by analyzing their personal attributes. While it is already a common practice to do so according to objective attributes which are connected to venture success, like the highest level education or the years of work experience (Chandler & Jansen 1992; Brüderl et al. 1992; Cooper et al. 1988; Cooper et al. 1994; Jo & Lee 1996; Hagen et al. 2011; Stuart & Abetti 1990; Gompers et al. 2006), “softer” attributes like the self-estimation of the own skills or the intrinsic motivation to become an entrepreneur are currently neglected, even though they have a strong influence on the success chances of the venture. Also, the findings can help to discover untapped sources of entrepreneurial opportunities, for example by investing in female entrepreneurs or entrepreneurs from rural areas (Brixy et al. 2011). Also aiming for failed entrepreneurs is a promising source (Ullrich 2013; Landier 2006; McGrath 1999). Once the decision is taken to get involved in a venture, the investor can use the findings of this study to direct his/her support. For example, it is important to teach the founders a more realistic view of the likely pitfalls and to help avoiding them or coping with them, for example through filling managerial shortfalls (Freiling 2009a), providing knowledge or active support. Investors should also be aware of the common cognitive biases of over-optimism and overconfidence among entrepreneurs (Cassar 2010; Forbes 2005; Cooper et al. 1988; Koellinger et al. 2007; Arenius & Minniti 2005) – and of course should not be overconfident themselves (Zacharakis & Shepherd 2001). While these are helpful in the earlier stages of the entrepreneurial process as they increase the probability to actually found a company, they develop to be harmful in the later stages and decrease the success probability (Cassar 2010; Forbes 2005; Cooper et al. 1988; Koellinger et al. 2007; Arenius & Minniti 2005). Investors should therefore aim to balance these biases by taking roles as mentors, coaches, consultants or supervisory board members.



### 8.3 Discussion and accordance with current state of research

This section will highlight how this study advances research in the according field and where it connects to the ‘loose ends’ of prior research. The next section will then suggest topics for further research, to build on the findings of this study.

An important advancement of this study is to add a time perspective to the research on entrepreneurial failure and the according causes. Existing research taking the time perspective into account mainly focuses on illustration the entrepreneurial formation process (Bull & Willard 1993; Kelley et al. 2011; Sánchez López 2012; Bhavé 1994). There are also approaches to quantify the amount of entrepreneurs in the different stages (Kelley et al. 2011). This study extends the process view of entrepreneurial venture creation, building on the prior process models. An important advancement here is, to carve out the success and failure possibilities in each step of the process. Existing research on this topic mainly focused on the step of venture gestation (Rotefoss & Kolvereid 2005; Delmar & Davidsson 2000; Cooper et al. 1994; Bates 1995; Carr 1996; Hagen et al. 2011; Moog 2004; Giannetti & Simonov 2004; Ucbasaran et al. 2007; Ullrich 2013; Stam et al. 2010) or venture success (Chandler & Jansen 1992; Brüderl et al. 1992; Cooper et al. 1988; Cooper et al. 1994; Jo & Lee 1996; Hagen et al. 2011; Stuart & Abetti 1990). The framework of the Entrepreneurial Funnel also provided an approach to quantify the success or failure chances of individual entrepreneurs in the process from the basis of snap-shot studies (e.g., Kelley et al. 2011).

The concepts of path dependence have a long history in research (David 1985; David 2001; Arthur 1989; Arthur 1990; Stack & Gartland 2003; Sydow et al. 2009). In the entrepreneurial context, so far it was mainly applied to understand success and failure in existing ventures. Sydow et al. (2009) presented an appealing line of reasoning in this context. This study builds on their arguments, but applies the concept of path dependence on the process of venture creation, to explain why some potentially promising ventures are not founded in the first place.

The question why ventures are not founded is a major focus of this study. Existing literature on this topic mainly focused on the question *who* does or does not found ventures (Rotefoss & Kolvereid 2005; Delmar & Davidsson 2000; Cooper et al. 1994; Bates 1995; Carr 1996; Hagen et al. 2011; Moog 2004; Giannetti & Simonov 2004; Ucbasaran et al. 2007; Ullrich 2013; Stam et al. 2010), rather than the question *why* they do or do not found ventures. The

few studies dealing with this issue, assume that fear of failure is an important barrier to foundation (Kelley et al. 2011; Welpel et al. 2011b). Even though research studies on emotions in economics are rare (Foo 2011), especially in the field of entrepreneurship research (Goss 2008), there are some studies in the broader context of entrepreneurship on emotions (e.g., Cardon et al. 2005; Foo 2011; Mitchell et al. 2007; Welpel et al. 2011b) and on fear in particular (e.g., Welpel et al. 2012; Krause 2004; Gray 1987, p.27; Clore & Palmer 2009; Baron 2008; Lerner & Keltner 2000; Foo et al. 2009). This research endeavor built on the according findings with the aim of understanding and detailing the topic further. It contributed to the state of the art research by providing empirical evidence that fear of failure is the major cause for fear of foundation. Furthermore, the study aimed to further disintegrate and thereby understand this phenomenon of fear. It identified fear of failure as a quite rational (however not objective) phenomenon by building a connection to the expected value of the perceived probability of a failure and the according perceived valuation of a failure. This helps to make the rather abstract concept of fear more tangible and allows further research on the different components of fear.

Apart from investigating *why* potential entrepreneurs fear (probability vs. valuation of a potential failure) this study also contributes to the research branch on fear of entrepreneurial failure by providing empirical findings for the questions (1) *who* fears (attributes of the entrepreneurs), (2) *what* do they fear (feared causes of failure) and (3) *when* do they fear (connection to steps in the venture creation process). (1) Since the field of fear in entrepreneurship is quite understudied (Goss 2008), there are hardly any prior research findings investigating who fears, so a connection between personal attributes and the amount of fear (Brixey et al. 2011). This study advances the research in this area significantly by providing both conceptual thoughts and empirical evidence in this area (c.f. section 7.3). These findings were then connected to the ‘loose ends’ of existing research on attributes of entrepreneurs who actually found companies (e.g., Rotefoss & Kolvereid 2005; Delmar & Davidsson 2000; Cooper et al. 1994; Bates 1995; Carr 1996; Hagen et al. 2011; Moog 2004; Giannetti & Simonov 2004; Ucbasaran et al. 2007; Ullrich 2013; Stam et al. 2010) and who eventually succeed with them (e.g., Chandler & Jansen 1992; Brüderl et al. 1992; Cooper et al. 1988; Cooper et al. 1994; Jo & Lee 1996; Hagen et al. 2011; Stuart & Abetti 1990; Cooper et al. 1988; Stuart & Abetti 1990). (2) While there are multiple research studies investigating the causes for entrepreneurial failure (for an overview of references see figure 47, page 191), there are no prior studies on the failure reasons which potential entrepreneurs expect and hence fear before foundation. This study closed this gap by providing empirical findings on

these anticipated failure reasons. Furthermore it built a connection to the existing research findings by comparing the actual failure causes from empirical research of company failures to the anticipated failure causes. Finally this match was evaluated for different groups of entrepreneurs according to their attributes and fear (c.f. section 7.3). (3) This study also generated empirical findings on the amount of fear and the composition of fear along the venture creation process (c.f. section 7.1.2.5) and interpreted these findings by connecting them to prior research, for example to the concepts of *anxiety in the face of risk* (Eisenbach & Schmalz 2013) and *cold feet* (Epstein & Kopylov 2007).

## **8.4 Limitations**

The following section will give an overview of the limitations which have to be kept in mind when interpreting the findings of this study.

The section on comparison of the Entrepreneurial Funnel with existing process models of nascent entrepreneurship (section 5.2.3) pointed out advantages of this framework. However, there are certain limitations as well. As described, the Entrepreneurial Funnel interprets items within the funnel according to the furthest step they achieved in the funnel, regardless of the step they are currently in. A serial entrepreneur, who just started a new company would therefore be categorized in a late funnel step (based on his/her previous experience), rather than into an early one. In the case of this research study, this is useful, because for understanding fear the history and experience of the individual seems to be important (Gompers et al. 2006). However, there might also be situations where it would be more useful to investigate the current step the individual is in. To address this issue, questions for both circumstances could be beneficial. Certain other limitations, for example the restriction of backward movements in the funnel or the type of items passing through it, are not generally limitations of the funnel framework, but rather design choice of its specific application. Possible adaptations of the framework are illustrated in section 5.4.

According to the empirical part of this study, the survey was not designed with the aim to be representative for the general population of Germany, as it is specifically targeted towards potential entrepreneurs and founders and to highly skilled individuals. Therefore the survey sample is biased towards those two groups. This has to be kept in mind, especially when comparing the groups to each other.

Measuring emotions, like fear, is generally a challenging endeavor. Since they are always subjective, they might be hard to compare between different individuals. Also, people might have different spreads of emotions – some rather divergent, others not. In the survey, this spread of individual emotions has to be translated into the given scale. This step could bear another source of distortion, since it is not clear how each respondent translates his/her individual feelings into the scale. Furthermore, in this study and similar studies (e.g., Welp et al. 2011b) the questions about failure are targeted towards a hypothetical situation, in this case for example the reasons why their companies should fail. This could potentially distort the answer behavior. Holt and Laury (2002) showed that the risk aversion in decision situation decreases, when the outcome of the lottery is only hypothetical but not really paid. Also, it was not possible to extract the effects of general anxiety (Kallmen 2000; Stöber 1997; Spielberger et al. 1970) on fear of foundation and fear of failure. Therefore, it cannot be excluded that a part of the measured fear is just caused by the general anxiety of a person. Furthermore, approaches to cope with fear and escalation and de-escalation mechanisms of fear are not accounted for in the study. This area could be a starting point for further research.

Due to the limitation of the number of questions in a survey, certain potentially relevant attributes of the participants were not surveyed (c.f. also section 6.3.8). These include among others the *cognitive orientation* (Gatewood et al. 1995; Baron 2004; Baron 1998; Hmieleski & Baron 2009), *personal efficacy* (Markman et al. 2002), *entrepreneurial orientation* (Lee & Peterson 2000; Lumpkin & Dess 1996; Rauch et al. 2009; Schillo 2011; Wiklund & Shepherd 2005; Quince & Whittaker 2003) and *risk preference* (Iyigun & Owen 1998; Huang 1973; Simon et al. 2000; Kahneman & Lovallo 1993) of the individual. However, these attributes could potentially influence the fear of the survey participants.

This study also targets individual entrepreneurs and does not take the influence of group decisions into account (c.f. e.g., Krings 2013; Charness & Sutter 2012). Since startups are often founded in a team, certain group dynamics could influence the effects of fear and the decision-making behavior.

There are general limitations according to the chosen form of empirical surveying. While approaches to cope with social desirability (Crowne & Marlowe 1960; Fischer & Fick 1993) were specifically applied, there is overall limited control of the situation where participants fill out the survey and how they understand the survey questions. Therefore the survey responses are potentially affected by forms of misunderstandings, biases, self-serving

awareness, etc. To allow an aggregation of multiple single data points, the responses for the item batteries of the anticipated failure reasons and the self-declared competencies of the potential entrepreneurs, un-weighted scores were calculated by adding up the answers and dividing the sum by the number of items. The results of the aggregation have to be interpreted with caution, since the answer scores of different questions were added, which might not be totally comparable (“comparing apples and oranges”). Moreover, the general limitations of empirical social research apply, for example concerning the selection choices according the usage of scales, etc. (cf. section 6.3).

There are certain limitations to be kept in mind when interpreting the identified failure causes from literature (c.f. section 7.2.2.1). As discussed in the corresponding section, research of failure reasons is very challenging due to systematic as well as practical problems. The studies that try to isolate root causes for entrepreneurial failure have to be reviewed with these problems in mind. Additionally, there are challenges in the effort to aggregate the findings from all these studies and to distill essential failure reasons. As already discussed above, one problem is that the studies have different focusses and are not directly comparable. This is according to their reviewed sample, e.g., the investigated industry, time, etc., as well as according to their approach, e.g., if they have a focus on a particular area of failure causes, like managerial shortfalls. Due to this fact, aggregating the findings of these different studies can never aim to be completely accurate, but rather only present a tendency.

The match of the failure reasons observed in reality based on literature review and the anticipated failure reasons based on the survey with potential entrepreneurs has to be interpreted with certain limitations in mind as well. First of all, the thresholds which categorize certain causes as important or unimportant both in the data from the research studies and from the survey cannot be completely accurately defined. The approach to define the thresholds is based on logical argumentation and described in the corresponding sections 7.2.2.1 and 7.2.2.2. However, there are borderline reasons like accounting and organization, as described above. Depending on the context they could also reasonably be categorized as important, rather than unimportant. Therefore, the thresholds given in this study are to be seen as a tendency or a fluent transition rather than a sharp border. It also has to be considered that the categorization of the failure causes is based on interpretation and can never be entirely exact. For each category, e.g., marketing, there might be different definitions of the literature studies, which reasons fall into it. The survey participants also have to interpret the category and match it with their perception of the category. Some survey participants might have

interpreted categories like management skills different than others. Also the categories have been surveyed in a preselected choice. Even though, the question was accompanied with an open answer field for other responses, preselected choices always have the potential to influence a survey (Moosbrugger & Kelava 2012; Aschemann-Pilshofer & Premberger 2001; Porst 2011). To avoid an additional step while analyzing the data and to keep the answers comparable between the respondents, the open question answers were not included in the quantitative analyses of the survey. Another general problem that applies in this case for both the survey results and the literature review is the trade-off between generalization of answers and accuracy of each singular case. Especially the research studies are very diverse according to their initial research focus, the examined industry, the year of the study, etc. Aggregating outcomes of these heterogeneous studies contains the downside of losing detailed information. The same applies to the surveys. Since the outcomes are aggregated across all survey participants, the individuality of every single case cannot be taken into account. For example, for some particular survey participants, it could well be that some important failure causes, they do not expect, are not blind spots for them, but for whatever reason they do not apply in their individual cases, due to their special knowledge, resources, etc.

The results of the survey and the literature review according to entrepreneurial profiles also are subject to certain limitations. As discussed in sections 7.3.2.1, 7.3.3.1 and 7.3.4.1, there are critics who challenge that the individual attributes of an entrepreneur are actually relevant in reality. Also, while it is broadly agreed that fear of foundation can hinder potential entrepreneurs from actually founding (Welp et al. 2012; Arenius & Minniti 2005), this connection has not been measured quantitatively yet. The extent of the influence has therefore to be considered unknown. Furthermore, the arguments drawn from literature review are a collection from various different studies, which are not entirely comparable, as they use different approaches and definitions (e.g., of success and failure), were conducted in different regions, at different times, etc. Also, there is usually no quantification of the extent of the influence given and if so, the quantifications would not be comparable between the different studies. Therefore, the listed personal attributes with an influence on fear, probability to found and probability to succeed have to be seen as indications only. Another limitation is that there is usually no differentiation between success and failure factors in literature, as one is often seen as the mirror effect of the other (Freiling et al. 2010; Hansen 2009). Therefore missing success factors have to be interpreted as failure factors, when using studies with this assumption. Furthermore, it was not possible to include tests for cognitive biases in the

questionnaire of this survey due to length restrictions and scope of the study, so no statement can be made about the influence of these biases on fear.

## **8.5 Outlook and suggestions for future research**

Future research should further detail the Entrepreneurial Funnel. A representative quantification would allow calculating the chances for a single entrepreneur to proceed from each one to the next funnel step. Also, every single step of the process should be investigated further to gain a holistic view of the corresponding success and failure reasons to lay the basis to influence achievement. Also the initiated discussion that moving through the entrepreneurial process might require breaking a determined path repeatedly should be followed up conceptually, as it brings a new perspective to both the concepts of entrepreneurial process and path dependence.

Also the research of emotions in economics in general and fear in entrepreneurship in particular should be increased. There might be other emotions, for example passion (Cardon et al. 2009), which have an important influence on entrepreneurship and should hence be illuminated by research in a similar way as fear in this study. Also mechanisms to control emotions are important to be understood, as emotions like fear can lead to entrepreneurial failure in certain steps of the entrepreneurial process. There are already some research attempts on this topic (Shepherd 2004), but further research is required.

Finally the research about the attributes and behaviors of entrepreneurs and their association to success or failure should be intensified. Starting points could be the influence of group dynamics in team foundations or the influence of the motivation why someone decides to become self-employed. Also the roles of cognitive biases, especially overconfidence and over-optimism should be further investigated. Failed entrepreneurs and entrepreneurial re-starters should be researched in detail as well to further understand failure in general, to find solutions about how to make failure less scary for potential entrepreneurs and finally to understand how failed founders can be encouraged to entrepreneurial re-start. A country comparison, for example between the US and Germany could reveal differences and starting points to improve the entrepreneurial culture in both countries, by transferring the “best-of” approaches to the other country.



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# Appendix

## Summary of hypotheses and validation

### Hypothesis 1a – ☒ confirmed

Fear of failure is the dominant driver of fear of foundation for potential entrepreneurs.

### Hypothesis 1b – ☒ confirmed

Fear of failure is mainly driven by the components *perceived probability of failure (belief)* and *perceived valuation of failure (preference)*, whereas probability stands for the odds of failure and valuation for the perceived impact of the failure on the future of the entrepreneur.

### Hypothesis 1c – ☒ confirmed

Out of the main two components of fear of failure, the *perceived valuation of failure (preference)* has a higher impact on the overall fear of failure than the *perceived probability of failure (belief)*.

### Hypothesis 1d – ☒ confirmed

The dominant component of fear of failure (i.e. the component *perceived probability of failure (belief)* or *perceived valuation of failure (preference)* which has the higher impact on overall fear of failure) of fear of failure differs between entrepreneurs in the different steps in the Entrepreneurial Funnel

### Exploration

Which causes that could lead to their companies' failures do potential entrepreneurs anticipate and as how important do they estimate each one.

### Hypothesis 2a – ☒ confirmed

The reasons why their corresponding ventures might most likely fail, which potential entrepreneurs anticipate before founding, do not entirely match actual empirical observations of the most common reasons for failure of startup companies.

### Hypothesis 2b – ☒ confirmed

Potential entrepreneurs anticipate certain reasons to be responsible if their venture should fail, which match actual empirical observations of the most common reasons for failure of startup companies (existence of “reasonable reasons”).

Hypothesis 2c – ☒ confirmed

Potential entrepreneurs anticipate certain reasons to be responsible if their venture should fail, which cannot be observed in actual empirical observations of the most common reasons for failure of startup companies (existence of “overrated reasons”).

Hypothesis 2d – ☒ confirmed

Potential entrepreneurs do not anticipate certain reasons as a likely cause if their venture should fail, which however can be observed in actual empirical observations of the most common reasons for failure of startup companies (existence of “blind spots”).

Hypothesis 3a – ☒ confirmed

Potential entrepreneurs can be clustered according to certain attributes into groups with different amounts of fear.

Hypothesis 3b – ☒ not confirmed

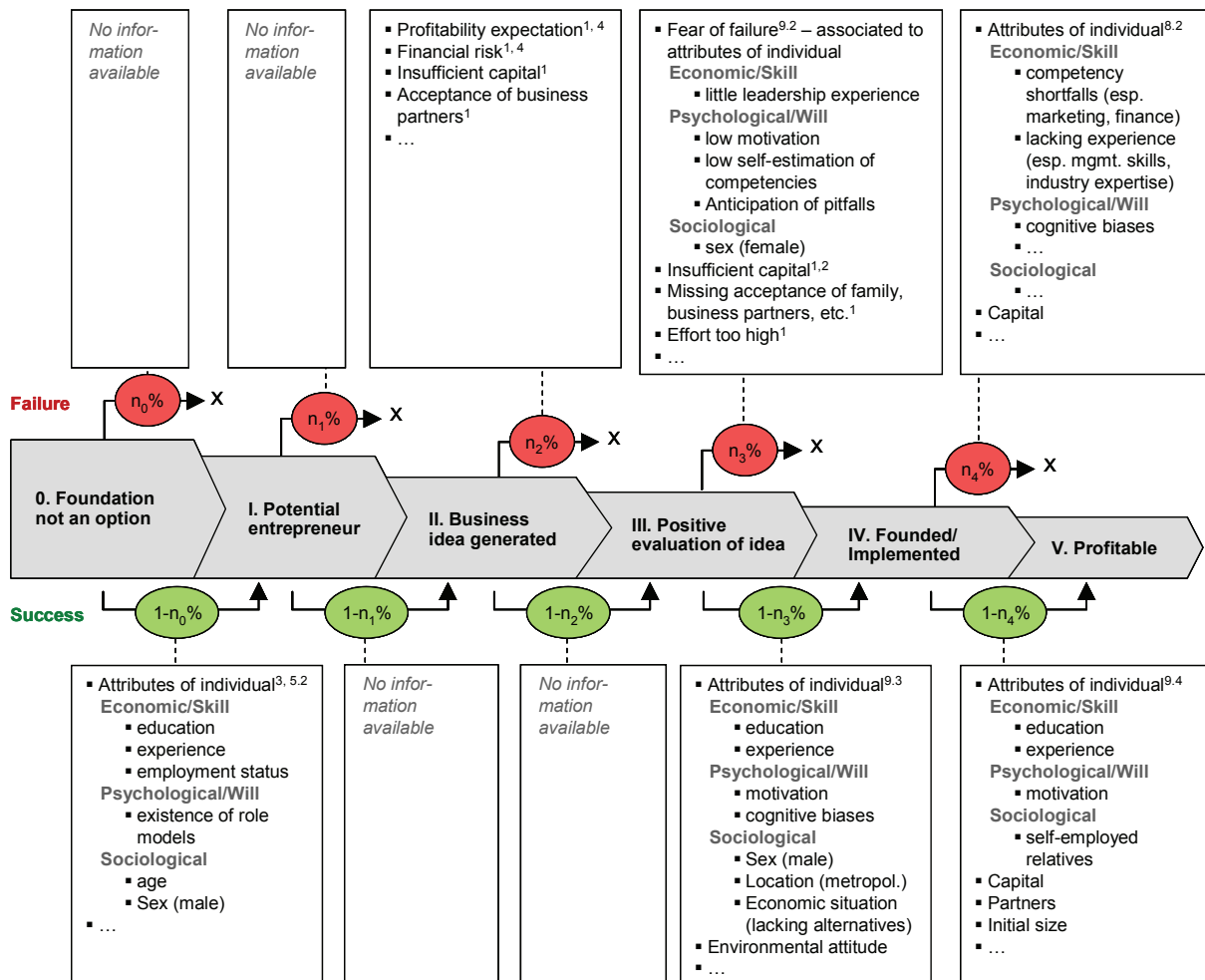
A high competence (skill) profile of a potential entrepreneur will lead to a higher amount of fear of founding a company.

Hypothesis 3c – ☒ confirmed

A low motivation (will) profile of the potential entrepreneur will lead to a higher amount of fear of founding a company.

## Selected success and failure causes in each step of the Entrepreneurial Funnel

The following figure presents an overview the success and failure causes in each step of the Entrepreneurial Funnel. However, this illustration is simplified due to its condensed form. The single causes are more accurately described in the corresponding sections in this thesis.



Exemplary sources: 1: Werner 2011, 2: GfK et al. 2012, 3: Delmar & Davidsson 2000, 4: Welpe et al. 2011, X.X: See chapter X.X

**Fig. 63:** Selected success and failure causes in each step of the Entrepreneurial Funnel

# Overview of Literature Focusing on Affect and Passion in Entrepreneurship

Authors	Construct	Construct Conceptualization	Object of Affect	Type of Research	Findings and Implications
Baron (2008)	Affect	Feelings, moods, and emotions	Situational events or stable tendencies of person	Conceptual	Affect influences many aspects of entrepreneurial cognition and behavior and is important for opportunity recognition and resource acquisition. The effects of affect on the entrepreneurial process could be direct, indirect, or moderated.
Baron & Hannan (2002)	Love/passion	A sense of personal belonging and identification with the company	Venture	Empirical	Founders who emphasize "love" as a basis for attachment of employees to the organization bring in HR expertise earlier and have the lowest likelihood of organizational failure.
Baron & Ward (2004)	Emotional valence and arousal	The extent to which emotions are pleasant/unpleasant and intense	Opportunities	Conceptual	Affect may help entrepreneurs find complex patterns to pursue opportunities. Entrepreneurs may experience more positive emotions than do other people when exposed to excellent opportunities.
Baum & Locke (2004)	Passion	A genuine love of work: emotions of love, attachment, and longing	One's work	Empirical	Passion has an indirect effect on venture growth, mediated by communicated vision, goals, and self-efficacy.
Baum, Locke, & Smith (2001)	Passion	A trait of entrepreneurs	One's work	Empirical	Passion has an indirect effect on venture growth, mediated by competency, motivation, and competitive strategy.
Bierly, Kessler, & Christensen (2000)	Passion	The drive to overcome personal, social, and institutional barriers to implement the "right" strategy	One's work	Conceptual	Passion increases the belief that one's work is meaningful and is associated with pride, commitment, empowerment, and energy. Passion is linked to motivation and can facilitate innovation.
Bird (1989)	Passion	Emotional energy, drive, and spirit	Venture	Empirical—interview data	Passion drives entrepreneurs' persistence and tenacity. Passion leads entrepreneurs to experience their ventures' successes and difficulties as personal events. Vision and passion together sustain optimism in the face of setbacks and mobilize others' beliefs and energy.
Brännback, Carsrud, Elfvig, & Krueger (2006)	Passion	An emotional and energizing component	Favorite hobby or activity	Empirical	Passion may be important to develop start-up intentions and for the process of exploring an opportunity. There were problems finding direct effects from a scale used to capture passion for hobbies. The influence of passion is complicated and needs further elaboration.
Branzei & Zietsma (2003)	Passion and love	No clear definition provided	Opportunities	Conceptual	Passion and love involve positive illusions, which may lead to cognitive biases and greater opportunity exploitation.
Cardon (2008)	Passion	An enduring feeling that is likely to be highly intense and positively valent	Venture or venture-related objects	Conceptual	Passion promotes transformational leadership and emotional display, which influence employee passion and engagement.
Cardon, Zietsma, Saparito, Matherne, & Davis (2005)	Passion	Attachment and identification of entrepreneurs with their ventures	Venture	Conceptual	Passion leads to harder work with greater effort, persistence, and enthusiasm. Passion leads to intense identification with the venture, but this may not necessarily be functional.
Chen, Yao, & Kotha (2009)	Passion	Attitude held by the entrepreneur indicating devotion and enthusiasm for a proposed business venture	Venture	Empirical	An entrepreneur's cognitive passion has a significant positive effect on venture capitalists' funding decisions, while the effect of affective passion is nonsignificant.

(Continued)

Authors	Construct	Construct Conceptualization	Object of Affect	Type of Research	Findings and Implications
Cross & Travaglione (2003)	Emotional intelligence	Appraisal and expression of emotion; regulation and utilization of emotion	No specific focus identified	Empirical—interview data	Entrepreneurs were found to show "extremely high levels" of appraisal, expression, regulation, and utilization of emotions, including for problem solving and persistence on tasks.
Filion (1991)	Energy	The time and intensity allocated to entrepreneurial activities	Work	Empirical	Energy has reciprocal effects on an entrepreneur's <i>Weltanschauung</i> the prism for observation and sensemaking. Working long hours is not enough; intensity is also required.
Huy & Zott (2007)	Emotion regulation	Entrepreneurs' actions to elicit, modify, or maintain desired emotional states (usually pleasant, high-activation emotion)	Stakeholders	Empirical	Successful entrepreneurs are adept at displaying passion and enthusiasm to others, as well as low-activation positive emotion to convey self-control. This increases investors' confidence in the business and helps mobilize employees' efforts.
Ma & Tan (2006)	Passion	Desire to create something insanely great, exert undeniable impact on society, and make history	No specific focus identified	Conceptual	Entrepreneurship is the embodiment of passion. It makes entrepreneurs believe in what they are doing, which is important for realizing their entrepreneurial dreams and achieving success against all odds.
Murnieks & Mosakowski (2006)	Passion	An intense longing related to salient role identity	Activities	Conceptual	Passion emerges when the entrepreneurial identity is salient. Passion helps entrepreneurs cope with negative experiences.
Shane, Locke, & Collins (2003)	Passion	Selfish love of work	Work	Conceptual	Passion can facilitate opportunity recognition, idea development, and opportunity execution (resource assembly, organizational design, market making, and product development).
Smlor (1997)	Passion	Enthusiasm, joy, and zeal; persistent desire to succeed	Venture	Conceptual	Passion comes from that energetic and unflagging pursuit of a worthy, challenging, and uplifting purpose. It emerges when one has freedom and opportunity to pursue one's dream.
Souitaris, Zerbiniati, & Al-Laham (2007)	Inspiration	The infusion of some idea or purpose into the mind, and the awakening or creation of some feeling of impulse	Activity from a start-up program	Empirical	Inspiration comes from the emotional chemistry between individuals and particular opportunities, which affects their decision to exploit matters beyond the rational models presented in previous entrepreneurship research.
Sundararajan & Peters (2007)	Positive emotion	Positive (and negative) emotions are defined by combinations of emotion prototypes sorted by various degrees of pleasure and activation	Opportunities	Conceptual	Positive emotion is triggered by a match between entrepreneurial motives and ideas. Self-efficacy and prior knowledge moderate emotional experience.
Winnen (2005)	Passion and emotional intelligence	Passion is an emotion; passion is the motivating force in entrepreneurship	Venture start-up, success, work tasks, product	Empirical	Passion is an emotion that influences opportunity recognition, mission, vision, decision, persistence, and the planning process when engaged in new venturing. The focus of passion differs among entrepreneurs.

Source: A Review of Literature Focusing on Affect and Passion in Entrepreneurship (Cardon et al. 2009)

**Sie stehen mit einer vielversprechenden Idee kurz vor der Unternehmensgründung.**

Wenn Sie bereits ein Unternehmen gegründet haben, versetzen Sie sich bitte in diese Phase zurück.

Wenn Sie bereits ein Unternehmen gegründet haben, versetzen Sie sich bitte in diese Phase zurück.

**Unternehmensgründung zu wagen und Ihre derzeitige Karriere dafür aufzugeben?**

gar nicht wohl    ●    ●    ●    ●    ●    sehr wohl

dafür verantwortlich sein? Bitte geben Sie die Gründe an, die Sie für wahrscheinlich halten:

wird – aus welchen Gründen auch immer?

**sehr gering** ○ ○ ○ ○ ○ **sehr hoch**

Wenn das von Ihnen gestartete Unternehmen scheitern würde, wie schlimm wäre das für Sie?

gar nicht schlimm ○ ○ ○ ○ ○ sehr schlimm

Wie stark erleben Sie Furcht, mit Ihrer Unternehmensgründung zu scheitern?

gar keine Furcht    ☐   ☐   ☐   ☐   ☒   ☐   sehr große Furcht

(potenziell) gegründetes Unternehmen am ehesten scheitern lassen?

- Probleme beim Finanzmanagement (Kostenrechnung, Investitionsplanung, Liquiditätsplanung, ...)

Sonstige

Angst zu Scheitern dabei spielt. Bitte beantworten Sie folgende Fragen:

Liebe Teilnehmerin, lieber Teilnehmer,

unterstützen Sie das Forschungsvorhaben, in dem Sie die folgenden Fragen beantworten.

Geschenkgutscheins im Wert von 50 EUR teilzunehmen.

Der Fragebogen ist natürlich vollkommen anonym und Ihre Eingaben werden streng vertraulich behandelt.

hier nicht um Konsistenz Ihrer Antworten, viel mehr interessiert uns Ihre spontane Beantwortung der Fragen.

In welcher Phase stehen Sie bzgl. einer Unternehmensgründung?

- Phase 4: Ich habe bereits ein Unternehmen gegründet (oder bin/war selbstständig)

Seit wie vielen Jahren befinden Sie sich bereits in dieser Phase?

**z.B.:**

**Phase 2: Seit wie vielen Jahren schon haben Sie schon Ideen für eine potenzielle Gründung?**

**Phase 4: Vor wie vielen Jahren haben Sie ein Unternehmen gegründet?**

durchgeführt, als zunächst geplant?

☐ noch nie verschoben

**Wie sehr wünschen Sie sich, Unternehmer zu sein?**

gar nicht ○ ○ ○ ○ ○ sehr

ein, als von angestellter Tätigkeit."

☐ stimmt nicht ☐ ☐ ☐ ☐ ☒ stimmt völlig

**Wie sehr ist es in Ihrem Umfeld (Freunde, Familie, Kollegen) angesehen**

☐ gar nicht angesehen    ☐ ☐ ☐ ☒ ☐ sehr angesehen

Weiter

Wie hoch schätzen Sie Ihre Angst ein, den Schritt in die Unternehmensgründung zu gehen?

Wenn Sie mit Ihrem gegründeten Unternehmen scheitern würden, wie schätzen Sie die Auswirkungen für Ihre Zukunft und Ihre künftige Karriere ein?

Wie sehr stimmen Sie der folgenden Aussage zu? „Auch mit einer guten Idee stehen Chancen sehr schlecht, ein erfolgreiches Unternehmen zu gründen“

Weiter

Universität Bremen - Fragebogen zur Gründungsforschung

[ 20% ]

Nehmen Sie bitte zu den folgenden menschlichen Verhaltensweisen Stellung. Was würden Sie sagen: Inwiefern tritt der jeweilige Satz auf Sie persönlich zu?

	stimmt nicht				stimmt vollig
Mein erster Eindruck von Menschen stellt sich gewöhnlich als richtig heraus	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Ich bin mir oft unsicher in meinem Urteil	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Ich weiß immer genau, wieso ich etwas mag	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Ich habe schon mal zuviel Wechselgeld zurückbekommen und nichts gesagt	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Ich bin immer ehrlich zu anderen	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Ich habe gelegentlich mal jemanden ausgenutzt	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Im Folgenden finden Sie eine Reihe von Feststellungen, mit denen man sich selbst beschreiben kann. Bitte lesen Sie jede Feststellung durch und wählen Sie aus den vier Antworten diejenige aus, die am besten auf Sie zutrifft, d.h. in diesem Moment. Es gibt keine richtigen und falschen Antworten. Überlegen Sie bitte nicht lange und denken Sie daran, diejenige Antwort auszuwählen, die Ihren augenblicklichen Gefühlszustand am besten beschreibt.

	überhaupt nicht	ein wenig	ziemlich	sehr
Ich bin ruhig	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Ich fühle mich angespannt	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Ich bin aufgeregt	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Ich bin entspannt	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Ich bin zufrieden	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Ich bin besorgt	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Weiter



Diese Informationen sind sehr wichtig, um die bisher gegebenen Antworten auswerten zu können. Bitte beantworten Sie daher alle Fragen.

**Ihr Alter (Jahre):**

- männlich
- weiblich

- Baden-Württemberg

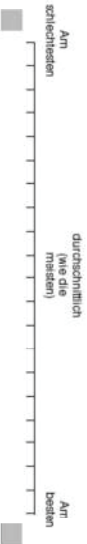
**Wo leben Sie?**

- Brandenburg
- Bremen
- Hamburg
- Hessen
- Mecklenburg-Vorpommern
- Niedersachsen
- Nordrhein-Westfalen
- Rheinland-Pfalz
- Saarland
- Sachsen
- Sachsen-Anhalt
- Schleswig-Holstein
- Thüringen
- Anderes Land:

**Was ist Ihr höchster Bildungsgrad?**

- Dr. / PhD
- Master
- Diplom, Magister/ Staatsexamen
- Diplom (FH)
- Bachelor
- Student (mit Abitur/ Fachabitur)
- Meister/ Techniker
- Ausbildung
- Abitur/ Fachabitur
- Sonstiger Schulabschluss
- keiner

Wie gut waren Sie im Abschluss Ihres höchsten Bildungsgrades im Vergleich zu Ihren Kommilitonen/Kollegen?



Wie viele Sprachen sprechen Sie einschließlich Ihrer Muttersprache(n)?

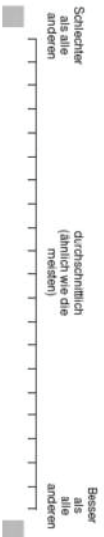
Wie viele Jahre (Vollzeit-) Berufserfahrung haben Sie (inkl. relevanter Vollzeit-P

Wie viele Jahre (Vollzeit-) Berufserfahrung haben Sie in einer Führungsposition?

Wie hoch war Ihr letztes Bruttojahresgehalt (inkl. Boni, Pensionszulagen, etc.) im Angestelltenverhältnis (also vor Ihrer eventuellen Gründung)?

- über 100.000 €
- 90.000-100.000 €
- 80.000-90.000 €
- 70.000-80.000 €
- 60.000-70.000 €
- 50.000-60.000 €
- 40.000-50.000 €
- 30.000-40.000 €
- 20.000-30.000 €
- 10.000-20.000 €
- unter 10.000 € (oder kein Gehalt bezogen)

Wie würden Sie Ihre Qualifikation als Unternehmensgründer im Vergleich zu anderen Gründern selbst einschätzen?



Wie gut schätzen Sie Ihre Kompetenz (Wissen, Erfahrung, Fähigkeiten) in der Industrie ein, in der Sie sich am ehesten selbstständig machen würden/selbstständig gemacht haben?

**Sehr schlecht** ○ ○ ○ ○ ○ **Sehr gut**

Wie gut schätzen Sie Ihre Kompetenz (Wissen, Erfahrung, Fähigkeiten) in den folgenden Bereichen ein?

sehr  
schlecht

sehr gut

- |                                    |   |   |   |   |   |   |
|------------------------------------|---|---|---|---|---|---|
| Management, Führung                | ● | ● | ● | ● | ● | ● |
| Finanzierung, Investitionsplanung, | ● | ● | ● | ● | ● | ● |
| Kostenrechnung                     | ● | ● | ● | ● | ● | ● |
| Einkauf, Logistik                  | ● | ● | ● | ● | ● | ● |
| Soziale Kompetenzen, Networking    | ● | ● | ● | ● | ● | ● |
| Buchführung, Steuern, rechtliche   | ● | ● | ● | ● | ● | ● |
| Angelsachenheiten                  | ● | ● | ● | ● | ● | ● |
| Planung, Organisation              | ● | ● | ● | ● | ● | ● |
| Marketing                          | ● | ● | ● | ● | ● | ● |

**Sind Ihre Eltern oder Verwandte selbstständig als Unternehmer tätig?**

- ☐ Ja
- ☐ Nein


**Vielen Dank!** Bitte klicken Sie auf "Weiter" um die Umfrage zu beenden.

Wir verlosen unter allen Teilnehmern einen Amazon-Geschenkgutschein im Wert von 50 EUR! Wenn Sie an der Verlosung teilnehmen möchten, hinterlassen Sie bitte eine Email-Adresse, unter der wir Sie im Falle eines Gewinnes benachrichtigen können.

Email (optional):

(Hinweis: Um die Anonymität zu wahren, wird keine Verbindung zwischen der eingegebenen Email-Adresse und dem ausgefüllten Fragebogen hergestellt.)

Questionnaire of pre-test survey



Universität Bremen - Fragebogen zur Gründungsforschung

20%

Diese Befragung wird von der Universität Bremen zur Erforschung von Unternehmensgründungen durchgeführt. Bitte unterstützen Sie das Forschungsvorhaben, in dem Sie die folgenden Fragen beantworten. Bitte beantworten Sie eine Frage nach der anderen und ändern Sie nichts an einer einmal gegebenen Antwort. Es geht hier nicht um Konsistenz Ihrer Antworten, viel mehr interessiert uns Ihre spontane Beantwortung der Fragen.

**Wie stehen Sie bzgl. einer Unternehmensgründung?**

☐ Ich kann mir nicht vorstellen, ein Unternehmen zu gründen

☐ Stufe 1: Ich kann mir grundsätzlich vorstellen, ein Unternehmen zu gründen

☐ Stufe 2: Ich habe/hatte schon eine oder mehrere Ideen für eine potenzielle Gründung

☐ Stufe 3: Ich habe/hatte eine oder mehrere der Ideen bereits evaluiert (Business Plan, etc.) und für gut befunden

☐ Stufe 4: Ich habe bereits ein Unternehmen gegründet

**Haben Sie Ihr Gründungsvorhaben schon einmal verschoben, d.h. wollten/haben Sie es später durchgeführt, als zunächst geplant?**

noch nie verschoben ☐ ☐ ☐ ☐ ☐ ☐ schon oft verschoben

**Wie sehr wünschen Sie sich, Unternehmer zu sein?**

gar nicht ☐ ☐ ☐ ☐ ☐ ☐ sehr


**Wie sehr stimmen Sie folgender Aussage zu? „Ich schätze den Stellenwert von Selbstständigkeit höher ein, als von angestellter Tätigkeit.“**

stimmte nicht ☐ ☐ ☐ ☐ ☐ ☐ stimmte völlig

**Wie sehr ist es in Ihrem Umfeld angesehen, Unternehmer zu sein?**

gar nicht angesehen ☐ ☐ ☐ ☐ ☐ ☐ sehr angesehen

Weiter



Universität Bremen - Fragebogen zur Gründungsforschung

20%

In dieser Befragung steht der Gründer im Vordergrund, also Sie als Person, nicht die Gründungsidee. Bitte versetzen Sie sich deshalb – unabhängig von den eben gegebenen Antworten – für die folgenden Fragen in folgende Lage:  
**Sie stehen mit einer vielversprechenden Idee kurz vor der Unternehmensgründung.**  
Wenn Sie bereits ein Unternehmen gegründet haben, versetzen Sie sich bitte in diese Phase zurück.

**Wie wohl/komfortabel fühlen Sie sich mit der Vorstellung, mit einer guten Idee den Schritt in die Unternehmensgründung zu wagen?**

gar nicht wohl ☐ ☐ ☐ ☐ ☐ ☐ sehr wohl

**Viele neu gegründete Unternehmen scheitern. Sollte Ihr Unternehmen scheitern, welche Gründe könnten dafür verantwortlich sein? Bitte geben Sie die Gründe an, die Sie für wahrscheinlich halten:**

**Wie groß schätzen Sie die Wahrscheinlichkeit ein, dass das von Ihnen gestartete Unternehmen scheitern wird – aus welchen Gründen auch immer?**

sehr gering ☐ ☐ ☐ ☐ ☐ ☐ sehr hoch

**Wenn das von Ihnen gestartete Unternehmen scheitern würde, wie schlimm wäre das für Sie?**

gar nicht schlimm ☐ ☐ ☐ ☐ ☐ ☐ sehr schlimm

**Folgend finden Sie eine Liste von Gründen, die besonders oft als Gründe genannt werden, ein Unternehmen möglicherweise zum Scheitern zu bringen. Welche der unten genannten Gründe könnten Ihr (potenziell) gegründetes Unternehmen am ehesten scheitern lassen?**

☐ Probleme bzgl. Sozial- und Management-Qualifikation der Gründer

☐ Probleme bzgl. Personal/ Arbeitsmarkt

☐ Probleme bzgl. Markt- / Nachfrageentwicklung

☐ Probleme bei Planung und/oder Organisation

☐ Probleme mit rechtlichen Angelegenheiten und/oder Regulierung

☐ Probleme im Gründungs-/Management-Team (Streit, ...)

☐ Probleme durch unterkritische Betriebsgröße oder -wachstum

☐ Probleme bzgl. Kapitalausstattung/ Finanzierung

☐ Probleme bei Buchführung und/oder Steuer

☐ Probleme bzgl. Wettbewerb (Nachahmung, ...)

☐ Probleme bzgl. unerfährten gesellschaftlichen/politischen Entwicklungen

☐ Probleme beim Finanzmanagement (Kostenrechnung, Investitionsplanung, Liquiditätsplanung, ...)

☐ Probleme mit Einstellung der Gründer (Risikobewusstsein, Durchhaltevermögen, Wille,...)

☐ Probleme bzgl. fachlicher Qualifikation der Gründer

☐ Probleme bzgl. Gründungs-/Businessplanung

☐ Probleme beim Marketing

☐ Probleme bei Einkauf und/oder mit Geschäftspartnern

Sonstige:

Dieser Fragebogen untersucht potentielle Hindernisse bei Unternehmensgründungen, insbesondere welche Rolle Angst zu Scheitern dabei spielt. Bitte beantworten Sie folgende Fragen:

**Wie hoch schätzen Sie Ihre Angst ein, den Schritt in die Unternehmensgründung zu wagen?**

gar keine Angst ☐ ☐ ☐ ☐ ☐ ☐ sehr große Angst



Im folgenden finden Sie eine Reihe von Feststellungen, mit denen man sich selbst beschreiben kann. Bitte lesen Sie jede Feststellung durch und wählen Sie aus den vier Antworten diejenige aus, die am besten auf Sie zutrifft. Überlegen Sie bitte nicht lange und denken Sie daran, diejenige Antwort auszuwählen, die am besten beschreibt, wie Sie sich **im Allgemeinen** fühlen.

	überhaupt nicht	ein wenig	ziemlich	sehr
Ich bin veranlagt	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Ich werde schnell müde	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Mir ist zum Weinen zumute	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Ich glaube, mir geht es schlechter als anderen Leuten	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Ich vermisse öfter Gelegenheiten, weil ich mich nicht schnell genug entscheiden kann	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Ich fühle mich ausgezehrt	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Ich bin ruhig und gelassen	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Ich glaube, daß mir meine Schwächen über den Kopf wachsen	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Ich mache mir zuviel Gedanken über unwichtige Dinge	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Ich bin glücklich	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Ich neige dazu, alles schwer zu nehmen	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Mir fehlt es an Selbstvertrauen	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Ich fühle mich geborgen	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Ich mache mir Sorgen über mögliches Missgeschick	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Ich fühle mich niedergeschlagen	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Ich bin zufrieden	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Unwichtige Gedanken gehen mir durch den Kopf und bedrücken mich	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Enttäuschungen nehme ich so schwer, daß ich sie nicht vergessen kann	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Ich bin ausgeglichen	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Ich werde nervös und unruhig, wenn ich an meine derzeitigen Angelegenheiten denke	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

[Weiter](#)

Bitte füllen Sie zum Abschluss noch einige Fragen zu Ihrer Person aus.  
Diese Informationen sind sehr wichtig, um die bisher gegebenen Antworten auswerten zu können. Bitte beantworten Sie daher alle Fragen.  
Ihre Antworten bleiben selbstverständlich anonym.

Ihr Alter (Jahre):

Ihre Geschlecht:

- ☐ männlich
- ☐ weiblich

Wo leben Sie?

- ☐ Baden-Württemberg
- ☐ Bayern
- ☐ Berlin
- ☐ Brandenburg
- ☐ Bremen
- ☐ Hamburg
- ☐ Hessen
- ☐ Mecklenburg-Vorpommern
- ☐ Niedersachsen
- ☐ Nordrhein-Westfalen
- ☐ Rheinland-Pfalz
- ☐ Saarland
- ☐ Sachsen
- ☐ Sachsen-Anhalt
- ☐ Schleswig-Holstein
- ☐ Thüringen
- ☐ Anderes Land:

Was ist Ihr höchster Bildungsgrad?

- ☐ Dr./PhD
- ☐ Master
- ☐ Diplom/Magister/Staatsexamen
- ☐ Diplom (FH)
- ☐ Bachelor
- ☐ Noch im Studium
- ☐ Meister/Techniker
- ☐ Ausbildung
- ☐ Abitur
- ☐ Sonstiger Schulabschluss
- ☐ keiner

Wie gut sind/waren Sie im Abschluss Ihres höchsten Bildungsgrades im Vergleich zu Ihren Kommilitonen/Kollegen?

- ☐ Beste 10%
- ☐ Beste 25%
- ☐ Durchschnittlich (mittlere 50%)
- ☐ unterdurchschnittlich (untere 25%)

Wie viele Sprachen sprechen Sie einschließlich Ihrer Muttersprache(n)?

eventuellen Gründung)?

- ☐
- kein Gehalt bezogen/Sonstiges

... einschätzen?

- ☐ Ich schätze mich als unterdurchschnittlich ein (untere 25%)

Wie gut schätzen Sie Ihre Qualifikation in den folgenden Bereichen ein?

[illegible]

Vielen Dank für Ihre Unterstützung! Bitte klicken Sie auf "Weiter", um die Umfrage zu beenden.

Welter

# **Declaration**

## **Erklärung**

Hiermit versichere ich, die vorliegende Arbeit ohne unerlaubte Hilfe angefertigt und keine anderen, als die angegebenen Quellen und Hilfsmittel benutzt zu haben. Den benutzten Werken wörtlich oder inhaltlich entnommenen Stellen sind als solche kenntlich gemacht.

München, 30.6.2014

A handwritten signature in black ink, appearing to be 'Be...' followed by a long horizontal stroke.