

WHO IS AFRAID TO FOUND? THE INFLUENCE OF INDIVIDUAL ATTRIBUTES ON THE PERCEIVED FEAR OF ENTREPRENEURIAL ACTIVITY

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Abstract

Research shows that many potential entrepreneurs refrain from founding a company due to fear (Welppe et al. 2012; Kelley et al. 2011; Brixy et al. 2011). This study investigates the amount of fear of potential entrepreneurs and its connection to the personal attributes of the individual. The study bases on a quantitative survey with 572 participants selected from entrepreneurial environments in Germany in 2013. The data showed that the survey participants could be divided with two approximated normal distributions of fear into two groups of rather fearful and rather fearless entrepreneurs. The central assumption that potential entrepreneurs can be clustered according to certain attributes into each of these two groups with different amounts of fear could be tentatively confirmed. The influence of various individual attributes on the fear of founding a company was analyzed using correlation and regression analyses. The two major attributes to determine the amount of fear of an individual proved to be previous leadership experience and the intrinsic motivation to become an entrepreneur. A subsequent discriminant analysis showed that the amount of fear of an individual survey participant could solely be predicted by those two attributes with an accuracy of 71%. The study concludes with highlighting implications of these findings and potential reactions for academia and policy-makers to influence the fear of potential entrepreneurs.

Key words: entrepreneurship, aspiring entrepreneurs; nascent entrepreneurs; start-ups; entrepreneurial process; characteristics/attributes of the entrepreneur; fear; anxiety; emotions.

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1. Introduction

Even though there is only limited research on the decision to found (e.g., Stam et al. 2010; Rotefoss, Kolvereid 2005; Shane et al. 2003), fear seems to play an important role in the decision whether to exploit an entrepreneurial opportunity or not (Welpel et al. 2012; Cardon et al. 2009; Berger 2014). Many potential entrepreneurs refrain from founding a company, because of the fear of failure – especially in Germany (Brixly et al. 2011; Berger 2014).

However, the role of emotions in business (e.g., Cardon et al. 2005; Foo 2011; Mitchell et al. 2007; Welpel et al. 2011) and especially fear in entrepreneurship (e.g., Welpel et al. 2012; Krause 2004; Gray 1987: 27; Clore, Palmer 2009; Baron 2008; Lerner, Keltner 2000; Foo et al. 2009; Berger 2014) is insufficiently researched (Goss 2008; Foo 2011). There are hardly any empirical studies in this area (Berger 2014). Understanding the role of emotions in the entrepreneurial context is highly relevant and 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, reminding that anxiety has been a dominant subject in mainstream psychology but an incidental or even insignificant one in behavior analysis. 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). Welpel et al. (2012) call for further research to understand and differentiate emotions in more detail and reveal their components and structure. This paper follows these calls and contributes to closing these gaps, focusing on the emotion of fear.

While there is a vast research field tackling 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., Bates 1990; Brüderl et al. 1992; Jo, Lee 1996; Markman, Baron 2003; Freiling, Wessels 2012), little is said about the influence of those characteristics and personal attributes on the amount of fear a potential entrepreneur faces. It is open whether all entrepreneurs generally face the same amount of fear or whether there are certain groups of entrepreneurs with different amounts of fear which can be distinguished from each other based on the attributes and characteristics of the individual entrepreneur. This study illuminates the amount of fear of founding a venture different entrepreneurs face and which individual attributes lead to higher or lower fear.

2. Developing hypotheses about the influence of individual attributes on fear

The following section will generate hypotheses based on the already introduced assumption that there are differences in the amount of fear between different groups of entrepreneurs and that these differences can be explained based on personal attributes.

Hypotheses 1

There are different groups of potential entrepreneurs with different levels of fear.

Hypothesis 2

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

Following Human Capital Theory (Werner 2011) these attributes could be related to skills, knowledge and related constructs (e.g. Brüderl et al. 1992; Freiling 2008). It is open whether a high skill profile of an individual potential entrepreneur leads to more or less fear. Thus, this should be evaluated in this research. A higher skill profile could lead to more fear of engaging in entrepreneurship due to high opportunity costs of alternative well-paid jobs or the risk of flaws in their careers in case of failure (Ullrich 2013; Landier 2006; McGrath 1999). On the other hand, highly skilled entrepreneurs could be aware of their own outstanding skills and therefore evaluate the probability of success higher.

Hypothesis 3a

The competence (skill) profile of a potential entrepreneur influences the amount of fear of founding a company.

Following the Affect as Information Theory (Gohm, Clore 2002; Clore et al. 2001) the motivation could also have an influence on behavior. Previous research shows that motivation is generally an important driver for entrepreneurial performance (Shane et al. 2003; Locke, Baum 2007; Baum 1994; Baum, Locke 2004) and could therefore also have an impact on fear.

Hypothesis 3b

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

Furthermore, sociodemographic attributes commonly used in related entrepreneurial surveys (Brixey et al. 2011; Kelley et al. 2011; Welpel et al. 2011) may have an influence on fear. Previous research shows that women have a stronger hesitance to found companies (Brixey et al. 2011) and general show a higher risk aversion (Sapienza et al. 2009; Jianakoplos, Bernasek 1998; Schubert 1999).

Hypothesis 3c

Female potential entrepreneurs tend to experience a higher amount of fear of founding a company.

3. Data and method

This study conducted empirical observations measuring the influence of different attributes on the amount of fear the individual entrepreneurs face. The backbone of the empirical part of this study is a quantitative survey conducted in Germany in 2013 of potential entrepreneurs in different stages of the entrepreneurial process. It rests on an online questionnaire with 572 participants selected from certain hubs of entrepreneurial activity such as venture capitalists or startup incubators, entrepreneurship centers of universities, startup networks, scholarship foundations or social networks.

As dependent variable, the survey aimed to measure fear with a question how high the participant estimates his/her fear to found a company. A question on fear of failure asked how high the participants estimate their fear to potentially fail with their company. The answer options on an identical 7-step Likert scale range 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).

To determine the participants' stages in the entrepreneurial process, the survey asked which phase of founding a company they are in. Five answer choices were given, representing the steps in the entrepreneurial funnel (Berger 2014): “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)”.

The attributes of the potential entrepreneurs were surveyed in three different item batteries. The first one focused on qualifications and previous experience. In this study, a question asked for the highest educational degree of the participant, following the operationalization based on GEM data (Brixy et al. 2011). A pre-selected list of choices was given to choose from. Next, a question asked how well the participant performed in the highest degree compared to colleagues or fellow students. As a further proxy for the level of education, the amount of languages spoken, including the first language, was asked (Dahlkamp et al. 2010). The second battery asked for the amount of previous work experience (based on Brüderl et al. 1992; Cooper et al. 1988; Cooper et al. 1994; Jo, Lee 1996), previous leadership experience (Chandler, Jansen 1992; Brüderl et al. 1992; Cooper et al. 1988), the total annual gross salary (Brixy et al. 2011) including bonuses in the current occupation or, in case of a found-

er, the previous employment. A third item battery asked for competencies in specific business areas. Questions asked for the knowledge and experiences in the industry of the planned venture (Brüderl et al. 1992; Cooper et al. 1988; Cooper et al. 1994; Jo, Lee 1996), general management experience (Stuart, Abetti 1990; Brüderl et al. 1992; Cooper et al. 1988), social competencies (Markman, Baron 2003; Freiling, Wessels 2012) and competencies in various business areas, which are, according to literature (Brüderl et al. 1992), linked to venture success and failure. A further question asked how the participant would estimate his/her own qualification as a business founder compared to other founders.

Further questions targeted the intrinsic (wish to become a founder) and extrinsic (estimated reputation of founders) motivation of a potential entrepreneur and socio-demographic attributes like the age, sex, geographical region and existence of self-employed relatives.

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 process.

4. Results

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 conceptual argumentation above with empirical evidence.

4.1. Clusters of fear

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. It indicates that the distribution is not random but there seem to be huge differences between individuals.

When taking a look at a histogram of the amount of fear, two peaks appear. One is close to the value of 2 which represents a very low amount of fear, the second at a value of 5 (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.

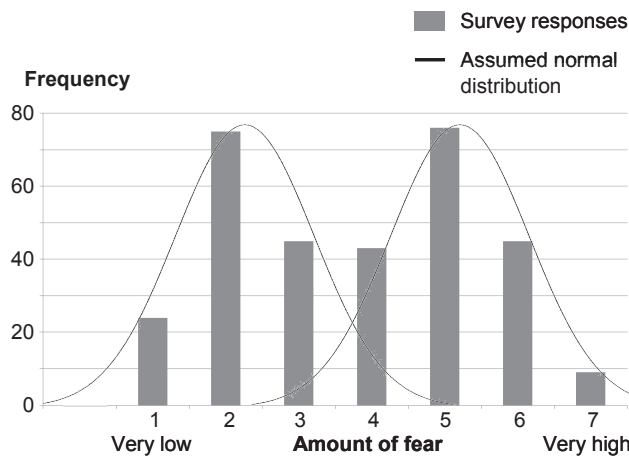


Fig. 1. Distribution of fear (Own illustration)

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.

Hypotheses 1: confirmed (There are different groups of potential entrepreneurs with different levels of fear).

4.2. Influence of personal attributes

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.

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, the performance in the education compared to fellow students, the previous work experience or previously achieved salary.

The amount of leadership experience of a potential entrepreneur has a highly significant negative correlation with fear of foundation. These results of the regression analysis suggest indeed a causal relationship, instead of only a correlation (regression coefficient -0.086 with a significance level 0.029). 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.

	Fear of foundation (Anxiety estimate)			
	Correlation		Regression	
	Coefficient	Sig.	Coefficient	Sig.
Economical view (Skill)				
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
Score_competencies	-,253**	,000	-,109	,428
Psychological view (Will)				
Will_wannabe	-,478**	,000	-0,407**	,000
Will_admire	-,313**	,000	,055	,421
Will_reputation	-,021	,704	0,152*	,033
sociological view				
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

Significant coefficient...

□ increasing fear

■ decreasing fear

} Self-estimation of qualification

} Motivation

*: Significance level ≤ 0.05; **: Significance level ≤ 0.01

Fig. 2. Influence of entrepreneurs' individual attributes on the fear of founding a company (Own illustration)

	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_competencies
Anxiety_estimate		,000	,000	,000	,000	,704	,775	,004	,148	,126	,553	,362	,135	,001	,466	,000	,145	,000
Anxiety_fearfailure	,704		,000	,000	,000	,752	,240	,000	,312	,709	,759	,827	,030	,002	,508	,004	,521	,001
Funnelstep	-,449	-,370		,000	,000	,070	,000	,000	,157	,532	,033	,896	,000	,000	,152	,000	,797	,000
Will_wannabe	-,478	-,380	,617		,000	,000	,947	,000	,323	,000	,460	,150	,158	,001	,007	,000	,214	,000
Will_admire	-,313	-,299	,393	,718		,000	,815	,014	,118	,057	,449	,121	,526	,016	,061	,000	,603	,000
Will_reputation	-,021	-,018	,095	,360	,382		,581	,985	,702	,021	,455	,492	,304	,057	,288	,044	,000	,032
Age	-,016	-,068	,353	-,004	-,013	-,032		,825	,633	,000	,008	,003	,000	,000	,000	,213	,017	,101
Sex	,167	,206	-,202	-,199	-,141	,001	,013		,405	,289	,942	,103	,510	,367	,179	,023	,806	,228
State_east_west	-,083	-,058	,081	,057	,090	-,022	,027	,048		,122	,790	,362	,645	,856	,061	,461	,535	,686
Education	,088	,021	-,036	-,229	-,109	-,132	,235	-,061	-,089		,001	,765	,594	,946	,000	,246	,272	,334
Education_ranking	-,034	-,018	-,122	-,042	-,044	-,043	-,151	,004	,015	,184		,006	,020	,036	,013	,029	,536	,171
Languages	-,052	,013	-,008	,083	,089	,040	-,171	,094	,052	,017	,156		,033	,081	,182	,045	,880	,735
Work_experience	-,086	-,124	,367	,081	,036	,059	,866	,038	,027	,031	-,134	-,122		,000	,000	,027	,123	,000
Leadership_Experience	-,186	-,178	,378	,192	,138	,109	,697	-,052	-,010	-,004	-,120	-,100	,835		,000	,001	,128	,000
Salary	,042	-,038	,082	-,156	-,108	,061	,472	-,077	-,107	,532	-,143	-,077	,453	,345		,002	,947	,003
Qualification_ranking	-,234	-,163	,237	,269	,207	,116	,072	-,130	-,042	,067	,125	,115	,127	,193	,177		,417	,000
Relatives_selfemployed	-,084	-,037	-,015	,071	,030	,270	-,136	-,014	-,036	-,063	-,036	-,009	-,089	-,088	,004	-,047		,779
Score_competencies	-,253	-,194	,209	,328	,268	,123	,094	-,069	,023	-,056	,079	,019	,212	,233	,173	,483	,016	

Correlations between entrepreneurial attributes and fear. Bottom left: correlations (*: significance level ≤ 0.05, **: significance level ≤ 0.01); top right: significance levels

Fig. 3. Correlation table between different attributes of entrepreneurs and fear (Own illustration)

Other attributes of potential entrepreneurs significantly correlated with fear are related to 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 entrepreneurial competencies are strongly correlated with decreased fear. As 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 here 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 own abilities and fortune can lead to lower fear of taking the risk to found.

Regression analysis did not show significant evidence to prove a causal relationship. 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, there may common underlying drivers behind the variables, which prevent the measurement of the influence of single variables in the regression model.

In summary, the amount of *leadership experience* is an 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.

Hypothesis 3a (The competence (skill) profile of a potential entrepreneur influences the amount of fear of founding a company.) can be accepted as particular aspects of the skill profile of the potential entrepreneur have an influence on fear. However, the hypothesis can be refined, since the empirical investigation revealed the direction of the influence.

Hypothesis 3a refined: A higher competence (skill) profile of a potential entrepreneur decreases the amount of fear of founding a company.

There is a strong correlation between fear of founding a component 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 (s)he faces. The according regression analysis confirmed the assumed causal relationship (regression coefficient -0.407 with a significance level of 0.000). This dream to found a company seems to be able to counteract the fear and actually do it. The more individuals want to become entrepreneurs, the less fear is perceived and, hence, the more likely foundation gets. 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.

Overall, 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 plays a role. This finding confirms Hypothesis 3b (A low motivation (will) profile of the potential entrepreneur will lead to a higher amount of fear of founding a company).

The set of socio-demographic items was analyzed according to the correlation with fear. No significant correlation to fear could be observed for the age, the geographical region or the existence of self-employed relatives of potential entrepreneurs. 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 where 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: 106) or when founding a company (Brixy et al. 2011). Since correlation analyses shows that women face higher fear of founding a company, the Hypothesis 3c (Female potential entrepreneurs tend to experience a higher amount of fear of founding a company) can be confirmed. However, regression analyses could not prove a causal relationship according to this correlation.

4.3. Forecast of fear based on attributes

Having identified the attributes of the individual entrepreneur influencing the amount of fear, we analyze whether the individuals can be clustered by different amounts of fear based on those attributes. A method for clustering different items is cluster analysis (Brosius 2004; Bühl 2006). However, in this case this analysis would only be based on the dependent variables (entrepreneurs' attributes), but not on the independent variable (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 that 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 and low fear accordingly. 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 strongest 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 whether the accuracy of the prediction of fear can be further increased when taking further variables into account. Adding the self-declared competencies 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 further attributes of the individual entrepreneurs could not 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.

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

			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. 5. Results of discriminant analysis to classify entrepreneurs based on their fear (Own illustration)

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.

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 Hypothesis 2 (Potential entrepreneurs can be clustered according to certain attributes into groups with different amounts of fear).

5. Discussion

Fear plays a critical role in the process step of founding a company (Kelley et al. 2011; Welpe et al. 2011; Arenius, Minniti 2005; Berger 2014). This study identified two distinct groups according to fear of founding a company, one 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.

This study connects to the research discussion on the influence of fear on the probability to found a new venture. There are research studies which show that fear of foundation plays a critical role in the decision whether to found a company or not and hinders many potential entrepreneurs from actually founding a company (Welpé et al. 2012; Kelley et al. 2011; Brixy et al. 2011). Fear reduces exploitation (Welpé et al. 2012) of entrepreneurial opportunities and may have this hindering influence even though the individual evaluation of the specific opportunity is favorable. Fear can reduce the impact of evaluation on exploitation (Welpé et al. 2012). Arenius and Minniti (2005) show in an empirical study that individuals who founded 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.

The intensity of the relation between fear of foundation and actual foundation can vary. E.g., women refrain more often from founding a company due to fear than men. According to the GEM, 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 hesitation to found a company according to GEM (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.

This study builds on the insights of previous research and contributes by providing and understanding of underlying drivers of this fear of foundation. While there are various research attempts to identify the influence of personal attributes on the chances of success with an already founded company (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), this study fills the gap of identifying attributes that lead to fear of founding a company which can prevent the actual foundation (Welpel et al. 2012; Kelley et al. 2011; Brixy et al. 2011).

6. Implications

Educational institutions play a crucial role in improving entrepreneurial activity in two ways. First, they can contribute to imparting required knowledge to increase the success rates. Second, they can fuel the intention to actually found a venture (Welpel et al. 2011). A currently neglected but highly important area is education as for emotions, particularly fear in entrepreneurial activity. Simply knowing that fear is a normal phenomenon before founding may help coping with it (Welpel et al. 2011). 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 to encouraging certain groups in founding ventures. Especially the highly qualified should be encouraged to dare founding companies and to regard starting a business as a realistic alternative to their multiple opportunities of well-paid employment. Confrontation with fear plays an important role here (Welpel et al. 2011), 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; Markman, Baron 2003; Stuart, Abetti 1990; Herron, Robinson 1993; Chandler, Hanks 1994; Storey 1994; Brüderl, Preisendörfer 2000; Lee, Peterson 2000; Colombo, Grilli 2007). 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; Welpel et al. 2011). 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 since they face higher fear of founding a venture and are underrepresented in foundation activities (Brixy et al. 2011). Apart from encouragement through education, special academic networks of female entrepreneurs should be built up.

Governmental politics can also contribute to improvements of the surrounding conditions to encourage entrepreneurial activity. Particularly women should be 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. 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.

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. These attributes have an influence of the fear to found a company. This awareness 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). 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 1983; Welpé et al. 2011). This can 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, or by installing side bets and creating commitment in the founding team.

7. Limitations

According to the epistemological design, the survey did not aim at representativeness for the general population of Germany, as it is specifically targeted towards potential entrepreneurs and founders. Therefore, it has to be kept in mind that the survey sample is biased towards this group.

Measuring emotions like fear is generally an ambitious endeavor. Due to complexity and idiosyncrasy, they are hard to compare between different individuals. Moreover, people may 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 as it is not clear how each respondent translates individual feelings into the scale.

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. Thus, it cannot be excluded that a part of the measured fear is just caused by the general anxiety of a person.

Due to the limitation of the number of questions in a survey, certain potentially relevant attributes of the participants were not considered, e.g. 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; Wiklund, Shepherd 2005; Quince, Whittaker 2003) and *risk preference* (Iyigun, Owen 1998; 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 into account the influence of group decisions (e.g. Charness, Sutter 2012). As 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. (Saris, Gallhofer 2014; Bradburn et al. 2004; De Vaus 2001).

To allow an aggregation of multiple single data points, the responses for the item battery of self-declared competencies of the potential entrepreneurs (un-weighted score) were calculated by adding up the answers and dividing the sum by the number of items. The result of the aggregation has to be interpreted with caution as the answer scores of different questions were added, which might not be totally comparable ('apples and oranges'). 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.

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KTO OBAWIA SIĘ ZAŁOŻYĆ FIRME? WPŁYW INDYWIDUALNYCH ATRYBUTÓW JEDNOSTKI NA POSTRZEGANĄ OBAWĘ PRZED AKTYWNOŚCIĄ PRZEDSIĘBIORCZĄ

Streszczenie

Badania dowodzą, że wielu potencjalnych przedsiębiorców powstrzymuje się od założenia przedsiębiorstwa z powodu odczuwanych obaw (Welpel i in., Kelley i wsp., 2011, Brixy i in., 2011). Niniejsze badanie ma na celu sprawdzenie tego, jak duży jest poziom obawy potencjalnych przedsiębiorców i w jaki sposób wiąże się ona z indywidualnymi atrybutami jednostki. Badanie opiera się na ilościowym sondażu przeprowadzonym wśród 572 uczestników wybranych ze środowisk przedsiębiorczych w Niemczech w 2013 r. Zgodnie z uzyskanymi danymi osoby badane mogą zostać podzielone na dwie grupy według dwóch w przybliżeniu normalnych rozkładów: na przedsiębiorców, którzy raczej cechują się obawami i tych, których obawy raczej nie charakteryzują. Główne założenie mówiące o tym, że potencjalni przedsiębiorcy mogą zostać przypisani według pewnych atrybutów do jednej z tych dwóch grup o zróżnicowanym poziomie obaw, zostało wstępnie potwierdzone. Wpływ różnych indywidualnych atrybutów na obawę przed założeniem firmy został poddany analizie z użyciem korelacji oraz analizy regresji. Dwoma głównymi atrybutami determinującymi poziom obaw jednostki okazały się być uprzednie doświadczenie przywódcze oraz motywacja wewnętrzna do tego, by zostać przedsiębiorcą. Przeprowadzona dalej analiza dyskryminacyjna wykazała, że poziom obaw osoby badanej mógł zostać przewidziany przy użyciu wyłącznie tych dwóch atrybutów z dokładnością 71%. Podkreślone na końcu zostały implikacje uzyskanych rezultatów oraz możliwe działania środowiska akademickiego i decydentów, które mogą wpływać na poziom obaw potencjalnych przedsiębiorców.

Słowa kluczowe: przedsiębiorczość; aspirujący przedsiębiorcy; początkujący przedsiębiorcy; start-upy; proces przedsiębiorczy; charakterystyki/ atrybuty przedsiębiorcy; strach; obawa; emocje.