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# Personal factors, entrepreneurial intention, and entrepreneurial status: A multinational study in three institutional environments

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## Abstract

Based on the person-entrepreneurship fit perspective, this study examines the role of personal factors, including broad personality traits (openness, extraversion, emotional stability, and conscientiousness), narrow traits (risk-taking propensity, innovativeness, and proactiveness), and personal ability (emotional intelligence) for entrepreneurial intention and status. In this study, two samples are used with entrepreneurial intentions being analyzed among university business students and entrepreneurial status being analyzed by surveying entrepreneurs versus employees. We analyze findings in three different institutional environments (Germany, Russia, and the USA) to also identify potential effects stemming from country context. Therefore, this study offers findings for a (i) comprehensive set of personal factors on (ii) different outcomes in the entrepreneurial process in (iii) different countries. The results suggest that the role of broad personality traits for entrepreneurial outcomes is highly contextual. Also, the role of narrow traits shows some contextuality for which further theorizing is promoted—for instance, while risk-taking propensity seems to be a trait of relevance in all contexts, innovativeness and proactiveness are of different relevance in the different institutional environments. Moreover, the narrow traits that impact entrepreneurial intention and status differ considerably—for instance, innovation is of special relevance for entrepreneurial status, but less important for entrepreneurial intentions. Hence, this study contributes to our understanding not only of individual personal factors contributing to entrepreneurial intention and status but also to understanding which factors overlap for individuals who intend to start a new business and those that do so.

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## Zusammenfassung

In dieser Studie untersuchen wir, welche Rolle individuelle Faktoren dabei spielen ein Unternehmen gründen zu wollen (unternehmerische Intention) und tatsächlich ein Unternehmen zu gründen. Konzeptionell bauen wir die Studie auf einer Person-Entrepreneurship Fit Perspektive auf und analysieren verschiedene Arten von individuellen Faktoren, nämlich die fünf großen Persönlichkeitsmerkmale (Offenheit, Extraversion, emotionale Stabilität und Gewissenhaftigkeit), für Entrepreneurship-Studien spezifische Persönlichkeitsmerkmale (Risikobereitschaft, Innovationskraft und Proaktivität) und individuelle Fähigkeiten (emotionale Intelligenz). Diese Zusammenhänge untersuchen wir in drei verschiedenen Ländern. Zu diesem Zweck haben wir zwei Arten von Daten gesammelt: Für die Analyse der unternehmerischen Intention haben wir Wirtschaftsstudenten an Universitäten befragt. Für die Analyse der Unternehmensgründungen haben wir Unternehmer und Angestellte befragt. Die Untersuchungen wurden in Deutschland, Russland und den USA durchgeführt. Da diese drei Länder sehr unterschiedliche institutionelle Rahmenbedingungen aufweisen, konnten wir zusätzliche Erkenntnisse zu den institutionellen Kontextfaktoren gewinnen. Insofern liefern wir Erkenntnisse für ein (i) umfassendes Set an individuellen Faktoren auf (ii) verschiedene unternehmerische Ergebnisse in (iii) verschiedenen Ländern. Unsere Analysen zeigen, dass die Relevanz der fünf großen Persönlichkeitsmerkmale für unternehmerische Ergebnisse sehr stark vom institutionellen Kontext abhängt. Ähnliches zeigt sich für die spezifischen Merkmale: hier offenbart sich Potenzial theoretische Erklärungsmuster zu verfeinern. So ist Risikobereitschaft zum Beispiel in allen Ländern relevant; Innovationsbereitschaft und Proaktivität sind hingegen sehr stark kontextspezifisch und von deutlich unterschiedlicher Wichtigkeit für unternehmerische Ergebnisse in den verschiedenen Ländern. Auch unterscheiden sich die Wirkungen der individuellen Faktoren auf unternehmerische Absichten und auf die tatsächliche Gründung eines Unternehmens. Es zeigt sich beispielsweise, dass Innovationskraft von besonderer Bedeutung für die tatsächliche Unternehmensgründung, aber nicht so relevant für die Bildung unternehmerischen Absichten ist. Damit liefert die Studie auch einen wichtigen Beitrag zur Erklärung der Faktoren, die zwar die unternehmerische Absicht erläutern, nicht aber die tatsächliche unternehmerische Tätigkeit und vice versa.

**Keywords** Broad personality traits · Narrow personality traits · Emotional intelligence · Entrepreneurial intention · Entrepreneurial status · Comparative study · Person-entrepreneurship fit

## Summary highlights

*Contributions:* First, this study offers insights into a comprehensive set of personal factors that impact on entrepreneurial outcomes. We test the person-entrepreneurship fit theory and respond to calls for research to better understand the role of different personal factors, including broad personality traits (openness, extraversion, emotional stability, and conscientiousness), narrow traits (risk-taking propensity, innovativeness, and proactiveness), and personal ability (emotional intelligence). Second, it contributes to understanding the relevance of personal factors for both,

entrepreneurial intention and status. Third, it contributes to understanding the context specificity of personal factors.

*Research Questions/Purpose:* Our key research objective is to better understand the role of personal factors for entrepreneurial outcomes in different institutional contexts.

*Information or Data Used:* We refer to a sample of university business students to test the determinants of entrepreneurial intention that comprises  $n = 255$  students in Germany,  $n = 224$  students in Russia, and  $n = 286$  students in the USA. Moreover, we refer to a sample of entrepreneurs and non-entrepreneurs to test the determinants of entrepreneurial status that comprises  $n = 100$  entrepreneurs and  $n = 118$  employees in Germany,  $n = 67$  entrepreneurs and  $n = 91$  employees in Russia, and  $n = 71$  entrepreneurs and  $n = 88$  employees in the USA.

*Methodology:* We use confirmatory factor analysis to create factor scores for our research constructs and analyze cause-effect relationships with ordinary least squares regression and an analysis of variance (ANOVA).

*Results/Findings:* Among the broad personality traits, emotional stability, extraversion, and openness are relevant determinants of entrepreneurial intention and status in at least one country. Among the narrow personality traits, risk-taking propensity plays the greatest role for both intention and final entrepreneurial action. Innovativeness shows significant impact on entrepreneurial status, but not on entrepreneurial intentions. Proactiveness is of relevance for intentions in two countries and of relevance for entrepreneurial status in one country.

*Limitations:* Our study's limitations relate to imperfections in the sampling process in the three different countries, as well as to imperfections in the measurement of our constructs. Finally, a multi-group analysis of institutional contexts has limitations.

*Theoretical Implications and Recommendations:* We offer empirical support for the conceptual idea within the person-entrepreneurship fit model; the hypothesis being that personal factors are of high relevance due to the peculiarities of the "weak situation" of entrepreneurial ventures.

*Practical Implications:* Our study does not focus on managerial practices, yet our results may be of interest for entrepreneurs and for individuals with an intention to become entrepreneurs.

*Public Policy Implication and Recommendations:* The person-entrepreneurship fit theory has the potential to offer valuable insights to policy-making. Following the model, the relevance of personal factors for entrepreneurial activity depends on the entrepreneurial situation and the favorability of entrepreneurship in the formal institutional environment. We demonstrate that the relevance of personal factors increases in environments that are least favorable for entrepreneurs. Policy-makers in these environments may be advised to foster political activities towards individuals that demonstrate specific personal attributes.

## Introduction

The role of entrepreneurship has changed dramatically in the last five decades from an emphasis on the giant American corporations as the key to economic growth to today's perception that entrepreneurship is the basis of a country's economic and social development (Ahlstrom 2010; Acs and Audretsch 2003b). Ultimately, it is the individual person, the entrepreneur, that enables this engine of growth by intending and, more importantly, by the acts of starting and maintaining a new business venture. The role of entrepreneurial intentions has received considerable research attention in the past, leading to several meta-analyses and reviews on the topic (e.g., Bird 2015; Liñan and Fayolle 2015; Schlaegel et al. 2015; Schlaegel and Koenig 2014; Zhao et al. 2010). As has been recognized by researchers, either in current research studies (e.g., Paul et al. 2017; Dehghanpour Farashah 2015) or in the course of meta-analyses (e.g., Zhao et al. 2010), personal factors of an individual can contribute greatly to entrepreneurial intention, which potentially may lead to entrepreneurial action (e.g., Liñan and Fayolle 2015).

These personal factors can be classified into different categories of interest. Rauch and Frese (2007) differentiate between broad and narrow personality traits (see also Liñan and Fayolle 2015). Broad personality traits are often represented by the five-factor model of personality (agreeableness, conscientiousness, extraversion, neuroticism, openness) and refer to relatively stable characteristics and tendencies to behave in a consistent way across various situations (McCrae and Costa 1987). Narrow personality traits, such as risk-taking propensity, innovativeness, and proactiveness (e.g., Zampetakis 2008; Rauch and Frese 2007; Mueller and Thomas 2001) refer to more specific levels of personality structure that potentially affect entrepreneurial processes, or more specifically, entrepreneurial orientations. The literature refers to risk-taking propensity, innovativeness, and proactiveness as the core components of entrepreneurial orientation, i.e., the interest in entrepreneurship at a very early stage of the individual entrepreneurial process (Covin and Lumpkin 2011; Covin and Slevin 1991). Moreover, more recent research is interested in the role that personal abilities play in entrepreneurial processes, such as cultural and emotional intelligences (e.g., Dheer and Lenartowicz 2018; Zampetakis et al. 2009).

The role of personal factors is heavily researched, especially with regard to both the broad and the narrow traits (e.g., Frese and Gielnik 2014; Brandstätter 2011). However, we are still missing several parts of the puzzle required to fully understand the importance of personal factors for entrepreneurial intention, and especially for entrepreneurial action at the individual level of analysis. Their role in the entrepreneurial process is to some extent controversially discussed. Some researchers argue that personal factors are important determinants within the entrepreneurial process (e.g., Rauch 2014; Rauch and Frese 2007), while others argue that personal factors do not significantly contribute to our understanding of this process (e.g., Gartner 1988).

Part of this controversy may be partially rooted in past research. First, personal factors have often been used as predictors explaining the earlier stage of the entrepreneurial process, namely the formation of entrepreneurial intention. Hence, researchers call for more longitudinal research, or research that enables further

insights into the role of personal factors on real entrepreneurial action (e.g., Brandstätter 2011). Second, most of the research and conceptualization with regards to narrow traits are examined at the firm-level and look at entrepreneurial behaviors related to these facets (e.g., Boso et al. 2017; Fayolle et al. 2010). For instance, Voss et al. (2005) refer to entrepreneurial orientation as a firm-level dispositional factor, which ultimately leads to different behaviors. Less research examines the implications of risk-taking propensity, innovativeness, and proactiveness on the individual or trait level (e.g., Richter et al. 2016b). Third, researchers recognize that the roles of abilities and competencies are less understood and should receive more attention (as called for by Brandstätter 2011; Mitchelmore and Rowley 2010). Finally, researchers suggest that the institutional environments of countries impact entrepreneurial orientation, intention, and status (e.g., Fayolle et al. 2010) with researchers in the entrepreneurial orientation domain specifically investigating the impact that environment has on the relevance of certain traits. For instance, Boso et al. (2017) suggest that risk-taking propensity is especially beneficial if there is a high uncertainty in the market. Yet, research on personal factors has often tended to focus on individual or closely aligned countries (Kruzic and Pavic 2010; Kirkwood and Walton 2010; Levenburg and Schwarz 2008; Fayolle et al. 2005; Cramer et al. 2002; Green et al. 1996). Such work has led to the perception of a need for research to reach across a broader range of countries (Minniti and Naude 2010), with some notable progress (e.g., Paul et al. 2017; Schlaegel et al. 2013).

To this end, based on the person-entrepreneurship fit model by Markman and Baron (2002), the current study aims to make four contributions to the existing literature on the role of personal factors within entrepreneurial processes. First, we offer results for different stages of the entrepreneurial process. We analyze entrepreneurial intention using a student sample and contrast the findings to entrepreneurial action using a sample comprising entrepreneurs and employees. In this way, we begin to answer recent calls for research (e.g., Hisrich et al. 2007; Krueger 2003) as to whether the importance of broad and narrow personality traits might change during the entrepreneurial process. Second, we look at the key narrow personality traits defined in the entrepreneurial orientation literature that are often examined at the firm-level, and analyze their importance for the development of individual entrepreneurial intentions, including for making the final decision to become an entrepreneur. Third, we add personal abilities to a model involving broad and narrow personality traits. In addition to referring to the five-factor model of personality, and to the narrow traits of risk-taking propensity, innovativeness, and proactiveness, we take a closer look at emotional intelligence and analyze its role in forming entrepreneurial intention and performing entrepreneurial action. The fourth contribution of the present study is a better understanding with regards to the role of personal factors in the formation of entrepreneurial intention, and the decision to turn this intention into action (i.e., to become an entrepreneur) in distinct national institutional environments.

Despite the significant number of studies examining the associations between various personal factors and entrepreneurial intention and status, we still have a limited understanding of the similarities and differences of the direction and strength of these associations in different countries. Following recent calls to move beyond

single-country studies (e.g., Liñan and Fayolle 2015; Fayolle and Liñán 2014), we explore whether the structure and strength of effects of personal factors on entrepreneurial intention vary across samples from Germany, Russia, and the USA—three countries that substantially differ in their entrepreneurship-related institutional backgrounds. Our results show that while key personal factors tend to be the same across the three samples, specific personal factors and the relative importance of all these factors vary substantially across the three-country samples. These findings provide researchers a basis to develop a more nuanced and context-sensitive perspective towards person-entrepreneurship fit.

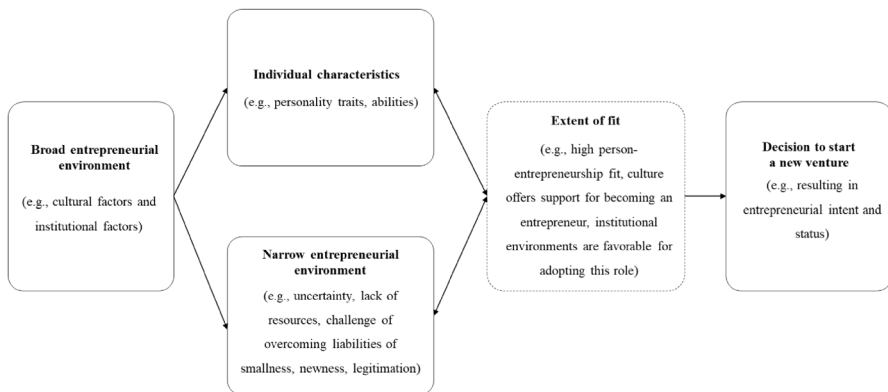
In the following, we will introduce a conceptual model based on the person-entrepreneurship fit perspective and briefly review the literature on personal factors and their theoretical relations to the entrepreneur. Moreover, we will discuss research on the impact of environment on entrepreneurial intention and action. Building on this review, we will outline research hypotheses, describe the research method, and discuss results. In the last section, we will derive implications for theory and practice, as well as discuss limitations and directions for future research.

## Theoretical foundations and hypothesis development

### The person-entrepreneurship fit framework in different institutional settings

Drawing on person-environment fit theory (Pervin 1968), that has been used in the context of analyzing the fit of persons to organizations (e.g., Kristof 1996), authors in the field of entrepreneurship started to outline a person-entrepreneurship fit framework, as visualized in Fig. 1.

The basic idea of this framework is that entrepreneurial intentions are shaped by the evaluation of the compatibility between persons (their personalities, skills, and abilities) and the external entrepreneurial environment. Environment, in a more narrow sense, is seen as the tasks that individuals need to fulfill when launching and operating a new venture. (Markman and Baron 2002; Hsu et al. 2019).



**Fig. 1** Person-entrepreneurship fit framework. Source: Adapted from Markman and Baron 2002

Markman and Baron (2002) further specify that the main tasks of entrepreneurs "... range from transforming discoveries into marketable items, working intensely despite uncertainty and limited capital to establish market foothold, and fending off retaliatory actions from rivals in the marketplace." (p. 28). Furthermore, they stress the specific tasks of dealing with external stakeholders, especially investors, and the challenge of having to overcome the liabilities of smallness, newness, and legitimacy. Markman and Baron (2003) assert that individuals and personal factors are at the core of the entrepreneurship phenomenon (see also, Shane and Venkataraman 2000). Building on Chatman (1989), they outline that personal factors are even more relevant in so-called weak situations, as opposed to strong situations. Strong situations are contexts in which personal factors, including personality and skills, cannot strongly influence human behavior or the environment in which the business is performed. Weak situations, in contrast, are contexts in which these personal factors have a strong impact on behavior and the business environment. Taking the above characteristics of entrepreneurial tasks and ventures into account, they classify entrepreneurial ventures as generally weak situations in which these personal factors should have a profound impact (see also, Riedo et al. 2019).

Riedo et al. (2019) point to the relevance of looking at the entrepreneurial environment from a broader perspective. Likewise, Boudreaux et al. (2019) stress that entrepreneurial ventures do not occur in an institutional vacuum, but the feasibility of starting a new business is embedded in formal rules. Following this logic, we assume that formal institutional environments impact the entrepreneurial situation and the interpretation of the individual situation. The institutional environment concerns the design of executive, legislative, judicial, and bureaucratic functions of government (Williamson 2000). In further specifying the institutional environment, North (1990) differentiates between regulatory, political, and economic structures. The regulatory environment comprises rule-setting, monitoring, and sanctions by regulatory institutions that reduce the uncertainty for the collective. Political democracy comprises the level of voting rights, freedom of speech, and the assembly of media. While the regulatory institutions relate to the application of laws and rules, the political institutional environment relates to the way these laws and rules are created and how the individuals of a nation participate in this process. Finally, economic institutions influence the availability of financial resources and reduce uncertainty and information asymmetries between borrowers and lenders of capital (see also Arregle et al. 2013 and Holmes et al. 2011). We argue that stronger and more favorable institutional environments may lead to a less challenging entrepreneurial environment and to a more favorable assessment of the fit of personal traits and abilities to entrepreneurial challenges.

Markman and Baron (2002) recognize that the personal factors may include more diverse and different aspects than those they have outlined in their framework (i.e., self-efficacy, perseverance, human capital, social skills, and opportunity recognition) and, therefore, call for future research on the multidimensional individual differences in the context of entrepreneurship. In the following, we will further elaborate on different personality traits and abilities that may play a role in the decision to become an entrepreneur.



## Broad personality traits and entrepreneurial intention and status

Within the area of industrial and organizational psychology, personality descriptions tend to focus on the “Big Five” broad personality traits (Heggestad 2007). Research distinguishes between the five basic traits of personality which can be further described by related adjectives: (1) extraversion: active, assertive, energetic, enthusiastic, outgoing, talkative; (2) agreeableness: appreciative, forgiving, generous, kind, sympathetic, trusting; (3) conscientiousness: efficient, organized, planful, reliable, responsible, thorough; (4) neuroticism (the opposite to emotional stability): anxious, self-pitying, tense, touchy, unstable, worrying; and (5) openness (to experience): artistic, curious, imaginative, insightful, original, wide interests (McCrae and Costa 1999; McCrae and John 1992).

In the 1980s, a number of literature reviews concluded that there was no consistent relationship between personality and entrepreneurship and that trait research in this area be abandoned (Gartner 1988), only to have researchers in more recent times suggest that the previous findings were due to sampling error and research artifacts (Rauch and Frese 2007). For example, Zhao and Seibert (2006) found in a meta-analysis that entrepreneurs were higher on conscientiousness, emotional stability, and openness to experience and were lower on agreeableness than managers. Zhao et al. (2010) argue that the first step in the entrepreneurial process is the intention to start a new business followed by the actual starting of the business, which in turn is followed by the performance of that new business venture. They hypothesize that personality traits can be used to differentiate those who have the intention to become an entrepreneur (versus those who do not), as well as classify those who are successful entrepreneurs (versus those who are not). They also find support in the literature for emotional stability, extraversion, openness, and conscientiousness to contribute to higher levels of both entrepreneurial intention and performance, while agreeableness has a negative impact on both intention and successful entrepreneurship.

Building on these findings and the person-entrepreneurship fit model, we argue that emotional instability is an obstacle in pursuing challenging entrepreneurial ventures that require a high tolerance of stressful day-to-day situations. Emotional stability, moreover, may be helpful when it comes to the creation of good relationships with, for example, external stakeholders (Ciavarella et al. 2004). Hence, persons with high emotional stability show a higher fit to the challenges of the entrepreneurial environment. Likewise, extraversion has long demonstrated a positive association with leadership and the performance of managers and salespeople (e.g., Judge et al. 1999; Barrick and Mount 1991). Furthermore, extraversion helps in developing partnerships and networks that tend to be important for entrepreneurial ventures (Ciavarella et al. 2004). Since leadership, selling business ideas to others, and creating networks are key tasks of entrepreneurs, we assume highly extroverted persons will show a higher fit to the challenges of the entrepreneurial environment. Openness relates to broad-mindedness, creativity, and originality, and may be seen as related to the entrepreneurial challenges of finding innovative new solutions, responding to market changes and acquiring new knowledge (Ciavarella et al. 2004). Conscientiousness involves aspects such as being willing to work hard for specific achievements, and has been consistently found to predict job performance (Barrick

and Mount 1991; Schlaegel et al. 2017). Thus, conscientiousness is hypothesized to play a pivotal role as an entrepreneurial trait (Ciavarella et al. 2004) leading us to assume that individuals with high levels of conscientiousness will show a higher fit to the challenges of the entrepreneurial environment. The above arguments on the positive associations between emotional stability, extraversion, openness, and conscientiousness have strong empirical support; as seen in their meta-analysis of 60 studies in which Zhao et al. (2010) find that these four personality traits are positively and significantly related to both entrepreneurial intention and entrepreneurial success, while agreeableness has a small but significant negative relationship with both dependent constructs. Therefore, we outline the following hypotheses with a focus on these personality traits:

*Hypothesis 1a: Higher levels of emotional stability will result in higher levels of entrepreneurial intention.*

*Hypothesis 1b: Entrepreneurs will have higher levels of emotional stability than non-entrepreneurs.*

*Hypothesis 2a: Higher levels of extraversion will result in higher levels of entrepreneurial intention.*

*Hypothesis 2b: Entrepreneurs will have higher levels of extraversion than non-entrepreneurs.*

*Hypothesis 3a: Higher levels of openness will result in higher levels of entrepreneurial intention.*

*Hypothesis 3b: Entrepreneurs will have higher levels of openness than non-entrepreneurs.*

*Hypothesis 4a: Higher levels of conscientiousness will result in higher levels of entrepreneurial intention.*

*Hypothesis 4b: Entrepreneurs will have higher levels of conscientiousness than non-entrepreneurs.*

### **Narrow personality traits and entrepreneurial intention and status**

Among the narrow personality traits, risk-taking propensity can be defined as the willingness to pursue decisions or courses of action involving uncertainty about success or failure outcomes (Jackson 1994). From a person-entrepreneurship fit perspective, it can be considered a relevant facet that should positively contribute to a higher fit evaluation. Nonetheless, the role that risk plays in the entrepreneurial process is a matter of strong debate: McClelland (1965) sees the entrepreneur as someone taking “moderate” risks, while Miner (1993) believes that entrepreneurs are those able to anticipate and reduce risks. Chen et al. (1998) suggest that entrepreneurs are both, “risk takers” and “risk reducers.” Cramer et al. (2002) conclude that individuals with low levels of risk aversion are more likely to become entrepreneurs than to opt for wage employment. Stewart and Roth (2001, 2004) also find that entrepreneurs possess a risk-taking propensity, while a meta-analysis by Miner and Raju (2004) concludes that entrepreneurs are risk-averse. Segal et al. (2005) suggest that the tolerance for risk is a key antecedent in an individual’s intention for self-employment.

Baron (2007) suggests that the conflicting findings for risk-taking propensity might be explained by the stage of entrepreneurial activity in which it was tested. Zhao et al. (2010) tend to agree with Baron's position and conclude from their meta-analysis that risk-taking propensity plays a significant role in the intention to become an entrepreneur, but that it is not seen as significant for entrepreneurial success. Despite identified potential methodological reasons for nonsignificant findings, they conclude that the impact of risk propensity is less on entrepreneurial success than on entrepreneurial intention (Zhao et al. 2010). We believe that, while the impact of risk-taking propensity varies with the stage of the entrepreneurial process, it will also be significant when it comes to differentiating between entrepreneurs and non-entrepreneurs. Hence, we formulate the following hypotheses:

*Hypothesis 5a: Higher levels of risk-taking propensity will result in higher levels of entrepreneurial intention.*

*Hypothesis 5b: Entrepreneurs will have higher levels of risk-taking propensity than non-entrepreneurs.*

It is believed that *innovation* is the central characteristic of the entrepreneurial endeavor (Schumpeter 1934). Ahlstrom (2010) summarizes in his review that "The exceptional economic growth of the past 200 years shows that the market mechanism requires the input of entrepreneurs and firms creating innovative new growth businesses." (p. 17). Innovation may be seen as the process of creating a solution to a new situation (Littunen 2000); the innovative process begins with creativity or the conception of a new idea, and is followed by the successful implementation of that idea (Heunks 1998). Following this view, we assert that innovativeness is the combination of the conception of an idea and its implementation (Mueller and Thomas 2001). This close connection between entrepreneurship and innovation is confirmed by research showing that there is a significant contribution by entrepreneurial small firms to a nation's innovative activity and technological change (Acs and Audretsch 2003a). In addition, Winslow and Solomon (1993) suggest that the role of entrepreneurs is both that of an architect of innovation and an introducer of change. They see entrepreneurs offering "five new combinations" that lead to development: introduction of new goods, introduction of new methods of production, opening new markets, conquest of new sources of supply, and carrying out a novel organization of any industry.

Man et al. (2008); Pretorius et al. (2005); Stewart et al. (2003); and Jung et al. (2001), among others, find that entrepreneurs have a strong preference for creativity and innovation. There is also strong evidence that entrepreneurs are more innovative than non-entrepreneurs. Therefore, our next hypotheses are as follows:

*Hypothesis 6a: Higher levels of innovativeness will result in higher levels of entrepreneurial intention.*

*Hypothesis 6b: Entrepreneurs will have higher levels of innovativeness than non-entrepreneurs.*

Finally, we define proactiveness as the ability to identify opportunities, take initiative, generalize from observations and experience, to develop and work with

abstract ideas, and to improve a current situation (see also Paul et al. 2017). There is no shortage of problems and hurdles an entrepreneur needs to overcome in the process of setting up their own business. The ability to generalize from their experiences and observations, as well as the ability to develop and work with abstract ideas (conceptual ability), can assist the individual in the entrepreneurial process and give the individual sufficient confidence in their own skills (Segal et al. 2005) that it can lead to support of proactive behavior. This personality trait of proactiveness has also become more and more important in dynamic organizational contexts (Frese et al. 1997).

Crant (1996) reports that there is a strong positive and significant relationship between proactiveness and entrepreneurial intentions. He argues that the more proactive individuals envision creating situations, such as forming or buying a new venture, the more they will be able to capitalize on their ability to be proactive. Individuals with a proactive personality identify opportunities, take initiatives, and are action-oriented (e.g., Paul et al. 2017). While the argument that this is related to entrepreneurial intention seems convincing, an individual might likewise use their proactiveness in an organizational context, for instance, to obtain a higher management position. Therefore, proactiveness is not only a person-entrepreneurship indicator but also a person-organization fit indicator. In fact, there are several studies researching proactiveness from an organizational viewpoint that find that it is related to job performance, success, and commitment; however, these findings are not specifically related to entrepreneurs (e.g., Thomas et al. 2010; Fuller and Marler 2009). Despite this lack of specificity, it has been assumed that proactiveness will positively affect entrepreneurial intention and behavior (e.g., Paul et al. 2017). Therefore, the next hypotheses are as follows:

*Hypothesis 7a: Higher levels of proactiveness will result in higher levels of entrepreneurial intention.*

*Hypothesis 7b: Entrepreneurs will have higher levels of proactiveness than non-entrepreneurs.*

## **Emotional intelligence and entrepreneurial intention and status**

The first widely recognized definition and formal model of emotional intelligence was introduced by Salovey and Mayer (1990), and the term “emotional intelligence” became common with the publication of Goleman’s 1995 best seller titled the same. Emotional intelligence is “the ability to regulate emotions to promote emotional and intellectual growth” (Mayer and Salovey 1997: p. 10). Mayer and Salovey (1997) conceptualize emotional intelligence as composed of four dimensions: (1) appraisal and expression of emotion in the self; (2) appraisal and recognition of emotion in others; (3) regulation of emotion in the self; and (4) use of emotion to facilitate performance. There are two primary types of instruments used in testing emotional intelligence: trait and mixed instruments (Perez et al. 2005). Both have their supporters and detractors, and research continues using both constructs. This study uses a trait construct as developed by Wong and Law (2002), who built their instrument

using the Mayer and Salovey (1997) model, making our research comparable to other studies in the field (Zampetakis et al. 2009).

Over the past two decades, emotional intelligence has been found to be an important personal ability that relates to entrepreneurship and self-leadership. Individuals with a high emotional intelligence most likely are more effective in leading themselves (Goleman 1995). At the same time, self-leadership skills, such as self-observation and self-goal setting, may improve the individual's emotional intelligence (D'Intino et al. 2007). Cross and Travaglione (2003) find that entrepreneurs exhibit high levels of emotional intelligence and its sub-dimensions. These studies may be seen to suggest that entrepreneurs tend to understand their weaknesses and strengths, and their verbal and non-verbal expression of emotions. Self-control is evidenced through their handling of workplace stress. Control of others' emotions is exhibited in their success of creating commitment and motivating skills among others. Cross and Travaglione (2003) also find that entrepreneurs have high levels of empathy, strong social skills, and passion to achieve. Their study suggests that emotional intelligence may be a significant factor behind entrepreneurial success. In addition, Zampetakis et al. (2009) find that emotional intelligence impacts entrepreneurial intention, yet this impact is mediated by creativity, proactiveness, and attitudes towards entrepreneurship. However, there appears to be rather little evidence to suggest that the level of emotional intelligence required by entrepreneurs is greater than the emotional intelligence seen among employees. For instance, Schmidt and Engle (2010) find no significant difference using the trait construct to compare levels of emotional intelligence between entrepreneurs and sales representatives. In this vein, we formulate the following hypotheses:

*Hypothesis 8a: Emotional intelligence will have no significant impact on entrepreneurial intention.*

*Hypothesis 8b: There will be no significant difference in the levels of emotional intelligence between entrepreneurs and non-entrepreneurs.*

### **Entrepreneurial intention and status in different entrepreneurial environments**

Based on the seminal work by Fishbein and Ajzen (1975), as well as Ajzen (1991), a vast amount of studies in different research fields has empirically shown that the intention to behave in a certain way is the best predictor of actual behavior (Armitage and Conner 2001). Derived from this line of research, entrepreneurial intention is the intention of an individual to start a new business and can be considered to be an important phase in the entrepreneurial process (Tkachev and Kolvereid 1999; Krueger 1993; Krueger and Carsrud 1993; Bird 1988; Shapero and Sokol 1982; Shapero 1975). Recent research shows that entrepreneurial intention explains about 30% of the variance in actual entrepreneurial behavior (e.g., Rauch and Hulsink 2014; Kautonen et al. 2013). Hence, it seems to be an important determinant of entrepreneurial behavior. However, not all individuals who have the intention to become an entrepreneur maintain their intention or reach their goal and finally earn the status of an "entrepreneur." Thus, a potentially important question is whether

individuals who have become entrepreneurs have the same personal characteristics, i.e., the same personality traits and abilities, as those individuals who have the intention to become an entrepreneur in the future. We still lack a foundational understanding regarding whether and to what degree the relationships between personal factors and entrepreneurship-related intentions *and* behaviors differ across countries. The paucity of related cross-country studies may be resulting in a critical gap in our understanding, as cross-country similarities and differences in the importance and structure of relations between personal factors, entrepreneurial intentions, and entrepreneurial status remain uncovered. Furthermore, and from a more fundamental perspective, we do not know whether theoretical models, such as the model of person-entrepreneurship fit developed in one specific national context (such as the USA) still hold in a different institutional and cultural context. From a more practical point of view, we do not know whether findings generated in one country apply equally in another country and to what degree their implications and conclusions can be generalized to other institutional environments. These limitations hinder advancement of research in this specific area, including the development of more precise theoretical models that explain the formation of entrepreneurial intention and, subsequently, entrepreneurial behavior. Therefore, we examine the role of a comprehensive set of personal factors in the formation of entrepreneurial intention and behavior in three distinct countries to explore the extent to which these theoretical models have explanatory power in different institutional environments, thus allowing a more contextualized understanding.

A potential reason for a variation in the importance of personal factors for either entrepreneurial intention or status can be found within the institutional environments themselves. As highlighted by previous researchers, variations in institutional environments that characterize countries may contribute to explaining inconsistencies in previous findings on entrepreneurial intention and/or entrepreneurial status (e.g., Dehghanpour Farashah 2015; Terjesen et al. 2013; Carsrud and Brännback 2011; Shook et al. 2003; Abdesselam et al. 2018; Baughn and Neupert 2003). According to the institutional perspective on entrepreneurship (e.g., North 1991), the explanation of entrepreneurial activity (i.e., entrepreneurs versus non-entrepreneurs) requires the consideration of the situational context in the different nations, as in order for entrepreneurial intentions to translate into actual activity, they must be matched with the prevailing entrepreneurial opportunities (Shane and Venkataraman 2000), which are conditional on the quality of national institutions. Examples of institutions that aim at supporting entrepreneurship include government policies and regulations, quality of research and development activity, capital access, and other formal support for new firms (e.g., Levie and Autio 2008). Building on the person-entrepreneurship fit concept, we argue that stronger regulatory, political, and economic institutions lead to an entrepreneurial environment that is perceived as less challenging and more encouraging for entrepreneurs. Some research already focuses on cross-country comparisons and begins to give us insights regarding the effects of environments on entrepreneurial intention and status (e.g., Paul et al. 2017; Richter et al. 2016b; Siu and Lo 2013; Moriano et al. 2012; Engle et al. 2010). Building on this research, we assume that different personal factors assert different effects on intention and status in different institutional environments. Agreeing with other researchers that the field

is in need of further theorizing in this regard (Paul et al. 2017), we refrain from formulating more concrete hypotheses and rather outline a more broad hypothesis below (e.g., Fayolle et al. 2010):

*Hypothesis 9: The impact that personal factors assert on (a) entrepreneurial intention, and (b) entrepreneurial status differs for different institutional environments.*

Hence, we aim to answer the following questions: (a) Do the same or different personal factors impact entrepreneurial intention in different institutional environments? (b) Do the same or different personal factors impact entrepreneurial status in different institutional environments? Additionally, this will answer whether there is a difference in the translation of determinants of entrepreneurial intention to entrepreneurial status in different institutional environments. Figure 2 depicts our conceptual model.

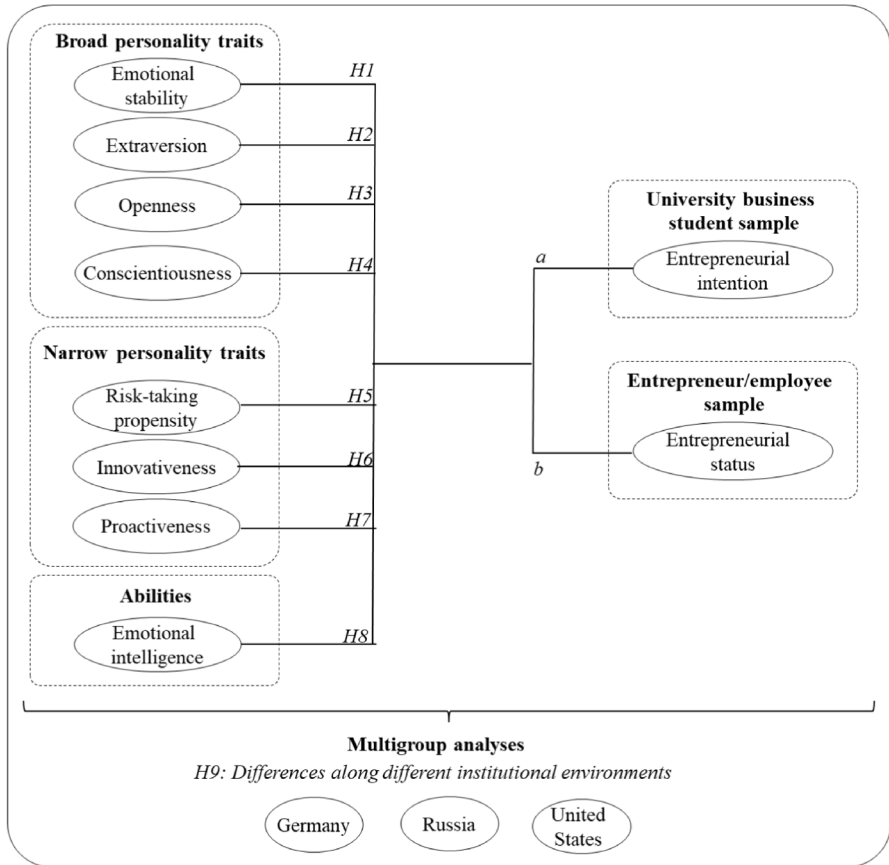


Fig. 2 Conceptual research model



## Method

### Samples and data collection

To test the hypotheses, we refer to two samples of which one is divided into two subgroups. The first sample is a university business student sample, which is used to test the individual characteristics that determine entrepreneurial intention (the business student sample). The second sample comprises two groups, namely entrepreneurs and non-entrepreneurs, and is used to test the individual characteristics that distinguish between entrepreneurs and non-entrepreneurs. In the following, we will refer to this second sample as the entrepreneur/employee sample. We collected data in three different countries representing very different formal and informal institutional environments: Germany, Russia, and the USA. These three countries appear in distinctly different regional cultural clusters as identified by Ronen and Shenkar (2013).

To analyze the factors that influence entrepreneurial intention, we carried out a survey among a matched sample of last year university students in Germany ( $n=255$ ), Russia ( $n=224$ ), and the USA ( $n=286$ ). The respondents were from one university in each country, and all were citizens of their respective countries. The average age of respondents was 21 years (with high variances between the countries due to the differing education systems in the three countries). Approximately half of the respondents (52%) were females. To ensure the equivalence and consistency across the country samples in terms of survey formats and data collection procedure, surveys were administered in a classroom setting in all countries. Usable responses were above 95% in all three countries. All subjects were nearing completion of their current studies and, therefore, had a need to make career decisions in the near future. As such, these individuals are considered to be an ideal sample for the purpose of conducting a study on intentions (Krueger et al. 2000).

For the second sample, entrepreneurs from Germany ( $n=100$ ), Russia ( $n=67$ ), and the USA ( $n=71$ ) were included from various industries in each of the three countries. Traditional professional businesses such as dentist, general medical practitioner, and lawyer were eliminated from the sample. In the USA, Chambers of Commerce in three cities were contacted. Agreement was reached to send out mailings to their local members listed as small business owners. In addition, small business owners were identified from a university alumni directory and mailings were sent to them as well. A total of 202 mailings were sent resulting in 50 qualified (started their own business) and usable questionnaires (25% response rate, which may be seen as acceptable (see Fawcett et al. 2014; Manfreda et al. 2008)). In addition, personal local network contacts of the US author were used resulting in 21 usable surveys (85% response rate). In total, this yielded  $n=71$  usable surveys from the USA. In Germany, we also contacted Chambers of Commerce in three cities and sent out mailings to their local members listed as small business owners. In addition, small business owners were identified from a university alumni directory and mailings were sent to them as well. In total 245 entrepreneurs were contacted resulting in  $n=100$  qualified and usable questionnaires (43% response rate). In Russia, a local



Chamber of Commerce mailing was sent to a total of 50 people resulting in 14 qualified (started their own business) and usable surveys (28% response rate). Additionally, 50 surveys were distributed to entrepreneurs who came to a university development program resulting in further 27 qualified and usable surveys (54% response rate). Finally, 26 qualified and usable surveys came from personal network contacts (76% response rate). This resulted in a total of  $n=67$  usable entrepreneur surveys.

Furthermore, for the second subsample, we conducted a survey of employees in Germany ( $n=118$ ), Russia ( $n=91$ ), and the USA ( $n=88$ ) in the same geographical areas as for the entrepreneurs. Surveys were also gathered from local Chambers of Commerce mailings in all three countries with similar response rates to that of the entrepreneur samples. Based on their response to a specific survey question, only surveys from currently employed non-entrepreneurs who had never owned and operated their own business were used. All subjects were citizens of their designated countries. In all three countries, we sought a non-entrepreneur sample that approximates the age, gender, and educational attainment of entrepreneurs from the respective entrepreneur surveys.

## Questionnaire and measures

We developed the survey instrument based on measures from various published sources. The questionnaire was pretested using a judgment sample of entrepreneurs and non-entrepreneurs, and it was subsequently revised to improve its readability and respondents' understanding. The questionnaire was developed in English, and administrated in its original language in the USA. The English questionnaire was translated into German and Russian and back-translated into English to ensure linguistic as well as conceptual equivalence (Brislin, 1980).

**Entrepreneurial intention** To measure the dependent variable (entrepreneurial intention), we used three items operationalized for entrepreneurs based on the work of Ajzen (1991) and used in prior research (e.g., Krueger et al. 2000). A sample item is "To what extent have you considered starting your own business?" The items were measured using a 5-point scale; the anchor points were 1="no consideration"/"no preparation"/"extremely unlikely" to 5="a great deal of consideration"/"a great deal of preparation"/"extremely likely." To come to a final entrepreneurial intention score, we have summed up the three items with the final scales ranging from 3 to 15.

**Broad personality traits** As regards the independent variables, we measured the broad personality traits by the adjective items from Saucier's 1994 Mini Markers instrument: extraversion (e.g., "extraverted"), conscientiousness (e.g., "organized"), openness to experience (e.g., "complex"), and emotional stability (e.g., "relaxed"). Each personality trait was measured by 8 items and the response scales ranged from 1="inaccurate" to 7="accurate". For the entrepreneur/employee sample, the personality traits were assessed by the ten-item personality inventory (TIPI) from Gosling et al. (2003): Extraversion ("extraverted, enthusiastic"), conscientiousness ("dependable, self-disciplined"), openness to experience ("open to new experiences,

complex”), and emotional stability (“calm, emotionally stable”). Each personality trait was measured by two items and the response scales ranged from 1 = “disagree strongly” to 7 = “agree strongly.” A shorter instrument was used, here, because the questionnaire included a significant number of additional questions not used in this study. The TIPI was developed, validated, and recommended by the instrument authors for such a situation.

**Narrow personality traits** Furthermore, we operationalized the narrow personality traits as follows: We assessed risk-taking propensity with one item (“I am willing to take a moderate risk to get ahead”) from Segal et al. (2005). The response scale ranged from 1 = “strongly disagree” to 5 = “strongly agree”. Eight items were used for measuring innovativeness and taken from Mueller and Thomas (2001) (e.g., “People often ask me for help in creative activities”). Responses were obtained on the same disagree/agree scale described above. Finally, the construct proactiveness was measured based on items from the inventory developed by Northouse (2007): It was measured by six items (e.g., “I enjoy working with abstract ideas”); the response scales ranged from 1 = “not true” to 5 = “very true.”

**Emotional intelligence** To measure the four dimensions of emotional intelligence, we used the 16 items instrument developed by Wong and Law (2002). Self-emotional appraisal was measured by four questions (e.g., “I have a good understanding of my own emotions”). Other’s emotional appraisal was measured by four items (e.g., “I am sensitive to the feelings and emotions of others”). The use of emotion was measured by four items (e.g., “I am a self-motivated person”). Regulation of emotion was measured by four items (e.g., “I have a good control of my own emotions”). The response scale for all four dimensions ranged from 1 = “strongly disagree” to 5 = “strongly agree.” The total emotional intelligence score used in this study was the mean of these four dimensions.

Furthermore, to differentiate between the entrepreneurs (small business owners) and the employee (individuals who are not, and have never been owner of a business, but currently employed), we added a dummy variable with the value of 1 for entrepreneurs and the value of 0 for non-entrepreneurs (employees). Finally, we included age and gender as control variables in the analyses, as we expect that the diversity of individuals might have implications for entrepreneurial intention.

## Analysis technique

To test our hypotheses, we make use of the following analysis techniques: First, we use confirmatory factor analysis to create factor scores for our research constructs comprising more than one item (we report and discuss criteria for evaluating the quality of these factors in the discussion). These scores are used in subsequent cause-effect analyses. More specifically, we perform ordinary least squares regression on our entrepreneurial intention sample to estimate the impact of personal factors on entrepreneurial intention. We also perform an analysis of variance (ANOVA) on our

entrepreneur/employee sample to assess the role of personal factors in the process of becoming an entrepreneur or employee (as this is a dichotomous variable).

## Results

### Measurement model, measurement invariance, and common method bias

We used confirmatory factor analysis (CFA) to test the validity of constructs for all three groups (students, entrepreneurs, and non-entrepreneurs) in the three countries. All constructs satisfied the threshold values which are recommended in the literature (RMSEA < 0.08 and CFI > 0.9). We used the results of the different CFAs to identify a baseline model used to test measurement invariance and our research hypotheses. In the test of measurement invariance, we used multi-group CFA (MGCFA) and tested measurement invariance across countries for the entrepreneurial intention samples and across countries, as well as across respondent groups (employees vs. entrepreneurs), for the entrepreneurial status sample. The results of the MGCFA showed at least partial measurement invariance across the different groups at the metric level, allowing us to compare the findings of the statistical analysis across the different respective groups. Tables 1 and 2 provide an overview of the MGCFA results.

Because information about the dependent and independent variables came from the same respondent for the entrepreneurial intention sample, we tested for potential common method bias. We ran a Harman's single factor test (Podsakoff and Organ 1986). Common method concern is high if a single factor can be extracted that explains the majority of the variance for the data. Harman's one-factor model demonstrated a poor fit with the data in each country. This suggests that the common method bias had no substantial threat in our entrepreneurial intention sample.

Table 12 in the Appendix provides an overview of loadings, as well as validity and reliability measures. While most of the variables met the general threshold value of 0.7 for Cronbach's alpha (Nunnally 1978), some reliabilities were less than 0.7 (e.g., proactiveness) but above 0.49 as suggested by Schmitt (1996) and Cortina

**Table 1** Results of CFA and MGCFA for the student samples

	$\chi^2$	<i>df</i>	<i>p</i>	CFI	RMSEA	$\Delta$ CFI
CFA results						
Germany	142.15	114	.038	.98	.03	-
Russia	226.56	114	.000	.93	.06	-
USA	255.49	114	.000	.91	.06	-
MGCFA results						
Configural model	624.19	342	.000	.938	.03	-
Metric model	681.88	364	.000	.930	.03	.008
Scalar model	1437.12	400	.000	.771	.06	.159

Germany *n* = 255, Russia *n* = 224, USA *n* = 157, pooled sample *n* = 636

**Table 2** Results of CFA and MGCFA for the entrepreneurial status sample

	$\chi^2$	<i>df</i>	<i>p</i>	CFI	RMSEA	$\Delta$ CFI
CFA results						
Germany	230.26	137	.000	.93	.06	-
Russia	258.05	137	.000	.90	.07	-
USA	193.30	137	.001	.95	.05	-
MGCFA results						
Configural model	681.69	411	.000	.924	.04	-
Metric model	736.87	437	.000	.915	.04	.009
Scalar model	1047.95	475	.000	.838	.05	.077

Germany  $n=218$ , Russia  $n=159$ , USA  $n=159$ , pooled sample  $n=536$

(1993). Most of the personality traits' coefficient alphas for the TIPI instrument were below 0.5. Gosling et al. (2003) state that the TIPI was not designed to perform well in terms of Cronbach's alpha as the TIPI is designed to measure very broad domains with two items per dimension. Therefore, given the small number of items used in the TIPI, Cronbach's alphas are misleading (Wood and Hampson 2005; Kline 2000). Given that we use different measures to assess the broad personality traits, we used a third sample ( $n=90$ ) to test the correlation between the two instruments to ensure comparability across samples and to confirm the study of Gosling et al. (2003). The results confirmed a sufficient correlation between the two instruments (extraversion:  $r=0.83$ , conscientiousness:  $r=0.75$ , emotional stability:  $r=0.73$ , openness:  $r=0.67$ ).

In addition, we completed variance inflationary factor (VIF) calculations on combinations of variables in both samples to test for collinearity problems and found that no combination of variables had a VIF score above 1.7 and, therefore, all combinations remained clearly below the threshold value of 5.0 (Levine et al. 2005; Snee 1973). In addition, collinearity was not found to be a significant problem in our full datasets.

The descriptive statistics are presented in Tables 3, 4, and 5 for the student samples and in Tables 6, 7, and 8 for the entrepreneur/non-entrepreneur samples.

## Test of hypotheses

Table 9 reports the results of our regression analysis on the entrepreneurial intention samples in the three countries. Subsequently, Table 10 reports descriptive statistics and the ANOVA results for the entrepreneur/employee samples in the three countries.

Hypothesis 1 predicts that emotional stability is positively associated with entrepreneurial intention (H1a), and that entrepreneurs will show higher levels of emotional stability than employees (H1b). For entrepreneurial intention (Table 1), there is a tendency for a positive association between emotional stability and entrepreneurial intention for the German sample ( $\beta=0.37$ ,  $p<0.10$ ). For the Russian and the US samples, we found no significant association. Thus, Hypothesis 1a is not supported for the three

**Table 3** Descriptive statistics (student sample Germany)

Variables	Mean	s.d.	1	2	3	4	5	6	7	8	9
1. Entrepreneurial intent	5.61	2.79	(.80)								
2. Emotional intelligence	3.58	0.44	-.12	(.78)							
3. Risk-taking propensity	3.52	0.83	.17	.10							
4. Innovativeness	3.02	0.56	.19	.10	.19	(.76)					
5. Extraversion	4.56	1.09	.10	.19	.26	.32	(.85)				
6. Conscientiousness	5.21	0.88	-.09	.27	-.10	-.06	-.03	(.82)			
7. Emotional stability	3.42	0.97	-.13	.49	.08	.10	.10	.17	(.79)		
8. Openness	4.76	0.78	.15	.24	.21	.63	.30	.14	.14	(.76)	
9. Age	23.02	6.71	.01	-.04	.08	.07	.05	-.03	.02	-.05	
10. Gender	0.45		-.19	.02	-.29	.03	.07	.17	-.10	.07	-.03

$n = 255$ . All correlation coefficients above 1.121 are significant at  $p < .05$ . Cronbach's alphas are shown in parentheses

**Table 4** Descriptive statistics (student sample Russia)

Variables	Mean	s.d.	1	2	3	4	5	6	7	8	9
1. Entrepreneurial intent	9.35	3.00	(.82)								
2. Emotional intelligence	3.67	0.55	.26	(.86)							
3. Risk-taking propensity	3.94	0.79	.32	.41							
4. Innovativeness	3.32	0.61	.29	.19	.30	(.77)					
5. Extraversion	4.63	1.05	.23	.22	.21	.28	(.85)				
6. Conscientiousness	5.12	0.88	.12	.41	.11	-.16	.04	(.83)			
7. Emotional stability	4.04	0.91	.08	.34	.05	.05	.06	.26	(.72)		
8. Openness	5.19	0.62	.26	.24	.21	.48	.30	.19	.10	(.81)	
9. Age	18.94	1.54	.14	-.03	-.02	-.04	-.05	.23	.03	.00	
10. Gender	0.67		-.30	-.16	-.01	-.17	-.01	.03	-.24	.04	.06

*n* = 224. All correlation coefficients above |.131| are significant at *p* < .05. Cronbach's alphas are shown in parentheses

Table 5 Descriptive statistics (student sample USA)

Variables	Mean	s.d.	1	2	3	4	5	6	7	8	9
1. Entrepreneurial intent	7.82	2.93	(.84)								
2. Emotional intelligence	4.03	0.39	.15	(.77)							
3. Risk-taking propensity	4.10	0.79	.27	.29							
4. Innovativeness	3.32	0.57	.09	-.26	-.04	(.74)					
5. Extraversion	5.01	0.93	.12	.16	.19	.17	(.81)				
6. Conscientiousness	5.41	0.87	-.03	.39	.08	-.20	.15	(.81)			
7. Emotional stability	3.32	0.88	.10	.35	.07	.02	.04	.14	(.68)		
8. Openness	5.18	0.70	.21	-.09	.07	.58	.20	-.08	-.16	(.63)	
9. Age	20.42	2.72	-.01	-.06	-.06	.13	-.01	-.07	-.02	-.02	
10. Gender	0.43		.24	.06	.15	-.01	-.17	-.08	.25	-.10	.08

$n = 157$ . All correlation coefficients above 1.151 are significant at  $p < .05$ . Cronbach's alphas are shown in parentheses

**Table 6** Descriptive statistics (entrepreneurial status sample Germany)

Variables	Mean	s.d.	1	2	3	4	5	6	7	8	9
1. Entrepreneurial status	0.46										
2. Emotional intelligence	3.80	0.47	-0.16	(.84)							
3. Risk-taking propensity	3.71	0.86	.18	.34							
4. Innovativeness	3.19	0.55	.22	.14	.09	(.63)					
5. Extraversion	4.75	1.25	.17	.22	.15	.23					
6. Conscientiousness	5.88	1.04	-0.02	.33	-0.07	.03	.08				
7. Emotional stability	5.25	1.10	.18	.43	.38	.17	.17	.15			
8. Openness	5.54	1.02	.13	.33	.15	.39	.37	.26	.33		
9. Age	40.80	12.36	-0.13	.10	-0.04	-0.01	-0.06	.12	-0.03	.12	
10. Gender	0.42		.24	.06	-0.19	-0.15	.11	.18	-0.18	-0.03	.00

*n* = 218. All correlation coefficients above 0.121 are significant at *p* < .05. Cronbach's alphas are shown in parentheses



**Table 7** Descriptive statistics (entrepreneurial status sample Russia)

<b>Variables</b>	<b>Mean</b>	<b>s.d.</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>	<b>8</b>	<b>9</b>
1. Entrepreneurial status	0.42										
2. Emotional intelligence	3.96	0.54	.10	(.86)							
3. Risk-taking propensity	4.26	2.25	.17	.06							
4. Innovativeness	3.28	0.96	.07	.28	.13	(.68)					
5. Extraversion	3.90	1.41	-.03	.10	.13	.13					
6. Conscientiousness	6.12	1.16	-.04	.38	-.04	.28	-.09				
7. Emotional stability	4.08	1.37	.12	.26	-.07	.14	-.35	.19			
8. Openness	5.15	1.16	.06	.14	.19	.24	.43	-.03	-.03		
9. Age	36.09	9.74	.29	-.08	.11	-.06	-.11	-.03	.02	-.07	
10. Gender	0.59		-.27	-.03	-.16	-.10	.02	.03	-.11	-.02	-.10

$n = 159$ . All correlation coefficients above 1.151 are significant at  $p < .05$ . Cronbach's alphas are shown in parentheses

**Table 8** Descriptive statistics (entrepreneurial status sample USA)

<b>Variables</b>	<b>Mean</b>	<b>s.d.</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>	<b>8</b>	<b>9</b>
1. Entrepreneurial status	0.45										
2. Emotional intelligence	4.07	0.44	.07	(.81)							
3. Risk-taking propensity	4.19	0.92	.27	.25							
4. Innovativeness	3.65	0.82	.28	.15	.27	(.73)					
5. Extraversion	4.80	1.15	.15	.24	.11	.14					
6. Conscientiousness	6.24	1.64	-.05	.35	-.12	.07	-.03				
7. Emotional stability	5.33	1.28	.02	.44	.09	.08	.04	.18			
8. Openness	5.58	1.15	.27	.17	.41	.51	.42	-.08	.22		
9. Age	40.64	10.26	.14	.08	.00	.00	.08	-.06	.11	.03	
10. Gender	0.41		-.28	.13	-.12	-.14	.02	.08	-.14	-.20	.05

*n* = 159. All correlation coefficients above 1.151 are significant at *p* < .05. Cronbach's alphas are shown in parentheses

**Table 9** Regression results for entrepreneurial intention

Variables	Germany		Russia		USA	
Intercept	.93	(2.58)	-7.39	(2.97)*	1.09	(4.14)
Emotional stability	.37	(.20)†	.11	(.21)	-.18	(.28)
Extraversion	.18	(.17)	.36	(.18)*	.29	(.26)
Openness	.29	(.30)	.38	(.28)	.73	(.42)†
Conscientiousness	.01	(.21)	.13	(.24)	-.34	(.28)
Risk-taking propensity	.21	(.22)	.73	(.25)**	.66	(.30)*
Innovativeness	.50	(.40)	.11	(.40)	-.35	(.52)
Proactiveness	.66	(.41)	.93	(.34)**	.92	(.44)*
Emotional intelligence	-.80	(.47)	.04	(.42)	.22	(.75)
Age	-.01	(.03)	.34	(.12)**	-.05	(.08)
Gender	-1.04	(.37)**	-1.76	(.39)***	-1.34	(.47)**
$R^2$	.13		.31		.21	
Adjusted $R^2$	.10		.28		.16	
$F$ -value	3.75***		9.48***		3.88***	
$N$	255		224		157	

Standard errors in parentheses

†  $p < 0.10$

\*  $p < 0.05$

\*\*  $p < 0.01$

\*\*\*  $p < 0.001$

countries included in the present study. For entrepreneurial status and the comparison of entrepreneurs and employees, we found a statistically higher value for entrepreneurs than employees for the German sample ( $F=7.08$ ,  $p < 0.01$ ). We found no statistically significant difference between entrepreneurs and employees for the Russian and the US samples. Thus, Hypothesis 1b is only supported for the German sample.

Hypothesis 2 predicts that extraversion is positively associated with entrepreneurial intention (H2a), and that entrepreneurs will have higher levels of extraversion than employees (H2b). While there is a positive association between extraversion and entrepreneurial intention for the Russian sample ( $\beta=0.36$ ,  $p < 0.05$ ), we found no significant associations for the German sample and the US sample. Therefore, Hypothesis 2a is only supported for the Russian sample. For the entrepreneurial status samples and the difference in the level of extraversion in entrepreneurs and employees, we found a significant difference for the German sample ( $F=6.19$ ,  $p < 0.05$ ), and a tendency towards significance for the US sample ( $F=3.49$ ,  $p < 0.10$ ). Thus, Hypothesis 2b is only supported for the German sample.

Hypothesis 3 states that openness is positively associated with entrepreneurial intention (H3a), and that entrepreneurs will have higher levels of openness than non-entrepreneurs (H3b). While openness is not associated with entrepreneurial intention for the German sample and the Russian sample, we found a tendency towards significance for the US sample ( $\beta=0.73$ ,  $p < 0.10$ ). Thus, Hypothesis 3a is not supported. For the entrepreneurial status sample, we found a tendency towards significance for the difference between entrepreneurs and employees for the German sample

**Table 10** ANOVA results for entrepreneur/employee samples

Variables	Germany			Russia			USA		
	Entrepreneur	Employee	ANOVA	Entrepreneur	Employee	ANOVA	Entrepreneur	Employee	ANOVA
	Mean (s.d.)	Mean (s.d.)	F-value	Mean (s.d.)	Mean (s.d.)	F-value	Mean (s.d.)	Mean (s.d.)	F-value
Emotional stability	5.45 (1.04)	5.05 (1.15)	7.08 **	4.27 (1.36)	3.95 (1.37)	2.18	5.36 (1.38)	5.30 (1.20)	.08
Extraversion	4.96 (1.26)	4.54 (1.24)	6.19 *	3.86 (1.50)	3.93 (1.35)	.11	5.06 (1.39)	4.58 (1.79)	3.49 †
Openness	5.67 (1.01)	5.40 (1.03)	3.72 †	5.22 (1.32)	5.09 (1.03)	.49	5.92 (0.86)	5.30 (1.28)	11.93 **
Conscientiousness	5.86 (1.03)	5.89 (1.04)	.06	6.07 (1.22)	6.16 (1.12)	.20	6.18 (0.99)	6.28 (0.96)	.38
Risk-taking propensity	3.98 (0.89)	3.43 (0.82)	22.36 ***	4.70 (3.28)	3.95 (0.87)	4.47 *	4.54 (0.75)	3.92 (0.95)	19.74 ***
Innovativeness	3.31 (0.59)	3.06 (0.51)	11.10 **	3.16 (0.71)	3.06 (0.64)	.88	3.73 (0.68)	3.37 (0.59)	13.32 ***
Proactiveness	3.97 (0.64)	3.70 (0.61)	9.78 **	3.79 (0.60)	3.74 (0.66)	.18	3.71 (0.75)	3.72 (0.69)	.13
Emotional intelligence	3.87 (0.46)	3.72 (0.48)	5.68 *	3.89 (0.57)	4.00 (0.51)	1.64	4.03 (0.43)	4.09 (0.44)	.74
Age	42.45 (12.77)	39.15 (11.95)	3.87 †	39.39 (9.19)	33.70 (9.47)	14.36 ***	42.21 (1.35)	39.39 (1.12)	2.98 †
Gender	.30	.53	12.70 ***	.43	.71	12.83 ***	.25	.53	13.74 ***
n	100	118	218	67	92	159	71	88	159

Standard deviations in parentheses

†  $p < 0.10$

\*  $p < 0.05$

\*\*  $p < 0.01$

\*\*\*  $p < 0.001$

( $F=3.72$ ,  $p<0.10$ ). For the US sample, our results show that openness is a trait for which entrepreneurs differ significantly from employees ( $F=11.93$ ,  $p<0.01$ ). In sum, we found support for Hypothesis 3b for one of the three countries (USA).

Hypothesis 4 predicts that conscientiousness is positively associated with entrepreneurial intention (H4a), and that entrepreneurs will show higher levels of conscientiousness than non-entrepreneurs (H4b). Neither for the entrepreneurial intention sample nor for the entrepreneurial status sample did we find a statistically significant association between conscientiousness and the two outcome variables. Therefore, Hypotheses 4a and 4b are not supported.

Hypothesis 5 states that risk-taking propensity is positively associated with entrepreneurial intention (H5a), and that entrepreneurs will have higher levels of risk-taking propensity than non-entrepreneurs (H5b). For the entrepreneurial intention samples, our results show that risk-taking propensity is positively associated with entrepreneurial intention for the Russian sample ( $\beta=0.73$ ;  $p<0.01$ ) and for the US sample ( $\beta=0.66$ ;  $p<0.05$ ). Therefore, Hypothesis 5a is supported for two of the three countries. For entrepreneurial status, our results show that entrepreneurs have a higher risk-taking propensity than employees for all three countries (Germany:  $22.36$ ;  $p<0.001$ ; Russia:  $F=4.47$ ;  $p<0.05$ ; USA:  $F=22.36$ ;  $p<0.001$ ). Thus, Hypothesis 5b is supported for all three countries.

Hypothesis 6 states that innovativeness is positively associated with entrepreneurial intention (H6a), and that entrepreneurs will have higher levels of innovativeness than non-entrepreneurs (H6b). While our results show no significant association between innovativeness and entrepreneurial intention for the three countries, for entrepreneurial status, we found significant differences for the German sample ( $F=11.10$ ,  $p<0.01$ ) and the US sample ( $F=13.32$ ,  $p<0.001$ ). Thus, Hypothesis 6a is not supported, and Hypothesis 6b is supported for two of the three countries.

Hypothesis 7 predicts that proactiveness is positively associated with entrepreneurial intention (H7a), and that entrepreneurs will have higher levels of proactiveness than non-entrepreneurs (H7b). We found support for Hypothesis 7a for the Russian ( $\beta=0.93$ ,  $p<0.01$ ) and the US sample ( $\beta=0.92$ ,  $p<0.05$ ). For entrepreneurial status, we only found a significant difference between entrepreneurs and non-entrepreneurs for the US sample ( $F=9.78$ ,  $p<0.01$ ). Thus, Hypothesis 7b is only supported for one of the three countries.

Hypothesis 8 posits that emotional intelligence will have no significant association with entrepreneurial intention (H8a), and that there will be no significant difference in the levels of emotional intelligence between entrepreneurs and non-entrepreneurs (H8b). Our results show that emotional intelligence has no statistically significant association with entrepreneurial intention for all three countries, thus supporting Hypothesis 8a. Contrary to Hypothesis 8b, we found a significant difference between entrepreneurs and non-entrepreneurs for the German sample ( $F=5.68$ ,  $p<0.05$ ). Thus, Hypothesis 8b is supported for two of the three countries.

Table 11 provides an overview of the hypotheses outlined and whether they are supported or not within the samples in the three countries.

Following from the above results, we also see the impact that personal factors assert on entrepreneurial intention differs considerably in different institutional environments; in the three countries, three different broad personality traits are of potential relevance when it comes to intention: emotional stability (tendency towards

**Table 11** Overview of hypotheses and results

Hypotheses	Germany		Russia		USA	
	Intention	Status	Intention	Status	Intention	Status
H1a: Higher levels of emotional stability will result in higher levels of entrepreneurial intention	Tendency	Supported				
H1b: Entrepreneurs will have higher levels of emotional stability than non-entrepreneurs						
H2a: Higher levels of extraversion will result in higher levels of entrepreneurial intention		Supported	Supported			Tendency
H2b: Entrepreneurs will have higher levels of extraversion than non-entrepreneurs						
H3a: Higher levels of openness will result in higher levels of entrepreneurial intention		Tendency			Tendency	Supported
H3b: Entrepreneurs will have higher levels of openness than non-entrepreneurs						
H4a: Higher levels of conscientiousness will result in higher levels of entrepreneurial intention						
H4b: Entrepreneurs will have higher levels of conscientiousness than non-entrepreneurs						
H5a: Higher levels of risk-taking propensity will result in higher levels of entrepreneurial intention		Supported	Supported	Supported	Supported	Supported
H5b: Entrepreneurs will have higher levels of risk-taking propensity than non-entrepreneurs						
H6a: Higher levels of innovativeness will result in higher levels of entrepreneurial intention		Supported				Supported
H6b: Entrepreneurs will have higher levels of innovativeness than non-entrepreneurs						
H7a: Higher levels of proactiveness will result in higher levels of entrepreneurial intention		Supported	Supported		Supported	
H7b: Entrepreneurs will have higher levels of proactivity than non-entrepreneurs						
H8a: Emotional intelligence will have no significant impact on entrepreneurial intention	Supported		Supported	Supported	Supported	Supported
H8b: There will be no significant difference in the levels of emotional intelligence between entrepreneurs and non-entrepreneurs						

All cells that are left blank indicate that the respective hypothesis was not supported

significance in Germany), extraversion (in Russia), and openness (tendency towards significance in the USA). We also observe that entrepreneurs show more pronounced personalities, as extraversion becomes a distinct trait (in Germany and by trend in the USA). As regards the narrow personality traits, intentions are significantly determined by risk-taking propensity (in Russia and the USA) and proactiveness (in Russia and the USA). Entrepreneurial status seems in contrast, to be more strongly determined by innovativeness (in Germany and the USA), while the role of proactiveness seems to be somewhat lower for entrepreneurial status (only a significant difference in the German sample). Finally, we identify emotional intelligence to be a relevant ability for intention and status in only the German context. These findings provide support for Hypothesis 9 suggesting the impact that personal factors assert on entrepreneurial intention and entrepreneurial status differs for different institutional environments.

## Discussion

### Implications for theory and research

The first objective of this study was to examine the degree to which different categories of personal factors impact on entrepreneurial intention and status. We address this by drawing on person-entrepreneurship fit theory that recently entered the field of entrepreneurship. So far, there are few studies that refer to this conceptual framework and advance our understanding in this regard: Riedo et al. (2019) introduce this theoretical framework to the field of social entrepreneurship and analyzes how narrow personality traits fit to commercial and social entrepreneurship endeavors. Hsu et al. (2019) also draw on this model and put emphasis on measuring and conceptualizing the perceived person-entrepreneurship fit. In our study, we answer the call outlined in Markman and Baron (2002) to take the multidimensionality of personal factors further into account and to contrast the relevance of different categories of personal factors with decisions to start a new venture; their hypothesis being that these personal factors are of high relevance due to the peculiarities of the “weak situation” of entrepreneurial ventures.

Overall, the personal factors examined in this study explained between 13 and 31% of the variance in entrepreneurial intention and show many significant differences in the comparison between entrepreneurs and employees across the study’s entire group of individuals in Germany, Russia, and the USA. Taking into account that there are a number of other factors, such as the economic conditions in the different environments (e.g., Aidis et al. 2008), and further personal factors (e.g., cognitive processes, see Engle et al. 2010) that have been shown to also significantly impact entrepreneurial orientation or activities, we conclude that the personal factors addressed in this study are important variables for the explanation of entrepreneurship. Hence, we offer empirical support for the conceptual aspects of the person-entrepreneurship fit model.

As regards the broad personality traits including emotional stability, extraversion, and openness, we find that they are relevant determinants of entrepreneurial intention and status in at least one of the institutional environments researched. This suggests individuals will more likely have the intention to start a new venture and become entrepreneurs, if they are equipped with the necessary emotional stability to address

the day-to-day challenges of a start-up. Furthermore, extraversion, and its related positive associations with leadership and networking, helps in developing entrepreneurial intention and differentiates entrepreneurs from non-entrepreneurs. Finally, also being open-minded appears to matter when it comes to entrepreneurial challenges, including the perceived ability to respond to volatile markets and address the need to acquire relevant knowledge about necessary new tasks. However, even though conscientiousness is not found to be a significant determinant in either of these study contexts, it has been shown to be highly predictive of performance across many jobs (Barrick and Mount 1991; Schlaegel et al. 2017), leading us to assume that it may be highly relevant to both entrepreneurs and non-entrepreneurs in other contexts.

While Zhao et al. (2010) show in their meta-analysis that all four broad personality traits are—on average—of relevance, we find that this is highly context-dependent. And this contextualization was the second key objective of our study. There is a need to engage in further theorizing regarding the relevance of these traits in different institutional environments, as well as different traits that may play a role in various environments as conceptualized in the person-environment fit model. This is true not only for intention but also for entrepreneurial status.

Our study confirms the relevance of narrow personality traits with regards to entrepreneurial intention, and especially for entrepreneurial status. Looking at the results for all three countries, risk-taking propensity plays the greatest role for both intention and final entrepreneurial action. Although we do not directly measure entrepreneurial success, risk-taking propensity is of high relevance for becoming an entrepreneur and, therefore, for entrepreneurial status as suggested by Cramer et al. (2002) and Stewart and Roth (2001), while at the same time contradicting the findings of Miner and Raju (2004). Although the institutional environments involved in our study show different levels of institutional uncertainties, risk-taking propensity is of relevance in any of these environments, resulting in a lack of a strong context dependency. We also find innovativeness to show a significant impact on entrepreneurial status, while indicating no significant impact on entrepreneurial intentions. Hence, while the intention to become an entrepreneur is not impacted by the innovativeness trait, it is an essential trait for becoming an entrepreneur. This suggests to us that having a creative idea which provides a solution to a market challenge, along with the ability to also implement this idea, is key for differentiating between individuals with entrepreneurial intent and those taking entrepreneurial action. While this contributes to research that underlines the important role of innovativeness in the entrepreneurial process, we see that this also seems to be context-specific, as for example in the Russian context; it is only about risk-taking propensity when it comes to entrepreneurial status, suggesting at least some degree of context dependency. Finally, proactiveness is a narrow trait which seems to show a rather high context dependency, being of relevance for intentions in two of three countries, and of relevance for entrepreneurial status in one of the three countries. Research has also shown that proactiveness becomes more and more relevant in organizational contexts, which might be a reason for these mixed findings in the different environments. An argument could be made that in environments in which proactiveness is valued in organizational contexts, it is no longer specific to entrepreneurial action.

Lastly, our findings suggested that emotional intelligence is an ability that shows neither an effect at the intention stage nor at the actual behavior stage of an



entrepreneurial endeavor (except for the positive association with entrepreneurial status for the German sample). This finding needs to be further examined in future research, as it would seem emotional intelligence should play a more important role when it comes to the actual performance of entrepreneurs, and whether, and to what degree, a particular new business requires this specific ability (e.g., low vs. high number of contacts with customers and other relevant stakeholders).

### Implications for government policy

We found that the impact that personal factors assert on entrepreneurial intention and entrepreneurial status differs for different institutional environments. This echoes findings on the context dependency of personal factors in the broader context of work (e.g., Richter et al. 2020a; Hauff et al. 2015; Drabe et al. 2015), and we can discuss some of the implications related to the work of Markman and Baron (2002). In their reasoning on the relevance of personal factors, they introduced what they called a weak and strong situation. The entrepreneurial challenge may be characterized as a rather weak situation, in which the individual needs to have a strong influence on the business environment. As conceptualized in their model, the evaluation of the entrepreneurial situation may, however, also depend on the broader environment, including informal and formal institutions and whether these favor entrepreneurial ventures. While there are several different ways to operationalize these institutional conditions (e.g., Abdesselam et al. 2018; Richter et al. 2019; Hauff and Richter 2015), a very simple measure of this favorability is the World Bank's "Ease of Starting a Business" indicator or ranking. This ranking suggests it is easiest to start a business in Russia with a rank of 40, and the USA following with a rank of 55, and then Germany following significantly with a rank of 125 (<https://databank.worldbank.org/>). This ranking would suggest Germany to have the least favorable situation and as a result should show the highest relevance of personal factors in establishing the entrepreneurial venture, followed by the USA and then Russia.

This implication from the person-entrepreneurship fit model appears compatible with this study's findings regarding the entrepreneurial status of the three environments analyzed. We observe that in Germany, almost all personal factors differ significantly between entrepreneurs and non-entrepreneurs, whereas in Russia, it is only risk-taking propensity that differs significantly. For entrepreneurial intention, however, this logic does not appear to fit, as the model for Russia shows the highest explanatory power of personal factors for entrepreneurial intention. Based on these preliminary findings, we may outline an implication for policy-makers—especially in countries with less favorable institutional environment for entrepreneurial activity—namely, to target political activities that foster entrepreneurship to individuals who have the relevant personal factors. Especially as changing institutional settings is no easy option for policy-makers, designing entrepreneurial programs for individuals can be a fruitful alternative.

Our study's insights help to identify the individuals who may have the highest potential to drive entrepreneurial activity in the specific country contexts, though our findings will need further testing and confirmation by future studies. Hence, we can (only) tentatively outline that German policy-makers may want to draw specific attention to emotionally stable, extraverted, and open-minded individuals for their

activities; Russian policy-makers may want to focus their attention towards extraverted individuals and US policy-makers towards open-minded and extraverted individuals.

Moreover, from an education perspective, the findings of our study suggest entrepreneurship programs should be tailored to the specific institutional framework. In contrast to the more stable broad personality traits, the narrow traits might, to some extent, be trained. Specific training that develops competencies and can reduce uncertainty might be developed with impacts measured. Training may involve tools that enable sensitivity analysis for different uncertain situations or involve scenario planning (which may lower the perceived risks among individuals). These or similar programs that target the risk-taking propensity of individuals are of clear relevance in all three countries. Furthermore, creativity techniques, as well as strategies for the implementation of innovation, can be used to shape innovative behaviors of individuals (these seem to be of specific relevance in Germany and the USA). Training to sharpen proactiveness, such as working with more abstract ideas or strategic thinking, might also be developed and measured, and could be fruitful in all three contexts.

Initiatives and interventions that aim at the development and formation of specific individual characteristic do not necessarily result in the same entrepreneurship-related outcomes in different countries. However, a finding that is constant across the three countries under study is that female students should be specifically targeted, and supported, to foster their entrepreneurial intention, as this intention of female students was lower compared to male students in all country samples. Furthermore, our findings indicate that this gender difference is also visible in the later stage when it comes to moving from intentions to action, as females' scores are also lower for the entrepreneurial status sample. Therefore, universities should support female students throughout each of the different stages of the entrepreneurial process.

### **Limitations and future research directions**

Before outlining further future research directions building on the above findings, we need to discuss potential limitations inherent in our study design. We need to highlight limitations resulting from differences in samples between countries—especially the gender differences between entrepreneur and non-entrepreneur individuals within countries as these differences may have influenced results. Furthermore, we only use one university in each country for collecting data among business students and a broader sample selection would have been desirable. Finally, we only examined whether a person was an entrepreneur (status). We did not examine how long they were an entrepreneur, the type of business they started, or the long-term performance of these entrepreneurs. These would have been further interesting variables that would have offered many valuable complementary findings. Still, we believe our design offers good first insights when it comes to the basic distinction between intentions and entrepreneurial action.

Future research can and should address our methodological limitations. It should continue to examine personal factors across broader ranges of different institutional environments and might even implement constructs and variables that offer greater insights into institutional factors, as well as the moderating role that different personal factors may have on various entrepreneurial outcomes. Ideally, future studies might

engage further in developing fit indices for the person-entrepreneurship fit. This will strongly contribute to the required theorizing on the contextualization of these personal factors. Regarding the latter, differentiating entrepreneurial intention and status is a first step that might be complemented by further variables covering the whole entrepreneurial process. Of special interest is to research deeper into the role of more narrow personality traits in different contexts, as this would enable policy-makers to derive a better understanding of different levels or entrepreneurial activity in their countries. Abilities, such as cultural intelligence, are an interesting route for further research. Entrepreneurial activities are becoming more and more international in their scope, with the resultant need for intercultural competencies that have a proven effect on many work-related outcomes (Schlaegel et al. 2017; Yari et al. 2020). Hence, we call for further research into the interactions between personal factors and different institutional environments for different stages in the entrepreneurial decision-making process (i.e., from intention to status) using a larger number of institutionally differing countries.

Finally, future research may also profit from incorporating a broader set of logics and methods. This may involve understanding whether certain personal factors form necessary conditions for entrepreneurial outcomes in specific institutional environments. Most studies in the field are using research methods, such as regression or structural equation modeling, and investigate into the sufficiency of factors for entrepreneurial outcomes. Yet, for policy-makers, it may be of specific relevance to understand the key must-have factors or bottlenecks that need to be satisfied to create certain entrepreneurial outcomes. Necessary condition analysis (see Dul 2020) is a new research technique that can be used to identify these must-have factors (and can be used in combination with traditional techniques, see Richter et al. 2020b) and has been recommended recently for this purpose (e.g., Aguinis et al. 2020). Moreover, policy-makers may profit from advanced modeling techniques that put a stronger focus on prediction; most traditional methods concentrate on maximizing the variance explained in models and concentrate less on a high predictive power of their models (see Shmueli 2010; Richter et al. 2016a). Yet, identifying personal (and institutional) determinants that predict entrepreneurial outcomes may be of specific value to governments and their political action plans. Several methodological advancements can assist researchers in identifying the predictive power of determinants (see Lienggaard et al. 2020; Richter et al. 2016c).

## Conclusion

Our study provides empirical support for the person-entrepreneurship-fit-theory. It provides insights into the relevance of different personal factors, including broad personality traits (openness, extraversion, emotional stability, and conscientiousness), narrow traits (risk-taking propensity, innovativeness, and proactiveness), and personal ability (emotional intelligence) for both entrepreneurial intention and activity. Moreover, our study demonstrates the context specificity of these determinants and contributes to understanding the relevance of institutional environments, given specific personal factors and entrepreneurial outcomes. We conclude that continuing research on the person-entrepreneurship-fit theory is a fruitful avenue to further understanding the determinants of entrepreneurial outcomes.

## Appendix

**Table 12** Item measure and validity assessment

Item	Standardized loadings and validity measures					
	Germany		Russia		USA	
	Student	E/NoE	Student	E/NoE	Student	Ent/NoE
<b>Entrepreneurial intention</b>						
To what extend have you considered starting your own business?	.78		.73		.81	
To what extend have you prepared to start your own business?	.76		.87		.78	
How likely is it that you are going to start your own business within the next 5 years?	.79		.73		.83	
Composite reliability	.82		.82		.85	
Average variance extracted	.60		.61		.65	
Coefficient $\alpha$	.80		.82		.85	
<b>Emotional intelligence</b>						
<b>Self-emotional appraisal</b>						
I have a good sense of why I have certain feelings most of the time	.70	.64	.69	.71	.64	.68
I have a good understanding of my own emotions	.82	.85	.84	.88	.77	.76
I really understand what I feel	.75	.81	.81	.76	.79	.71
I always know whether or not I am happy.*						
Composite reliability	.80	.81	.83	.83	.78	.76
Average variance extracted	.58	.60	.61	.62	.54	.52
Coefficient $\alpha$	.80	.80	.83	.83	.78	.76
<b>Other's emotional appraisal</b>						
I always know my friends' emotions from their behavior	.60	.63	.62	.63	.67	.58
I am a good observer of others' emotions	.60	.78	.81	.50	.80	.76
I am sensitive to the feelings and emotions of others		.60		.73		.65
I have a good understanding of the emotions of people around me	.85	.71	.72	.69	.79	.95
Composite reliability	.73	.82	.76	.73	.80	.83
Average variance extracted	.48	.45	.52	.42	.57	.56
Coefficient $\alpha$	.73	.77	.75	.72	.72	.82
<b>Use of emotion</b>						
I always set goals for myself and then try my best to achieve them.*						
I always tell myself I am a competent person.*						
I am a self-motivated person	.78	.75	.61	.41	.78	.60
I would always encourage myself to try my best	.55	.63	.61	.46	.61	.81
Coefficient $\alpha$	.59	.63	.54	.32	.63	.66
<b>Regulation of emotion</b>						
I am able to control my temper and handle difficulties rationally	.76	.73	.67	.71	.71	.71
I am quite capable of controlling my emotions	.88	.88	.89	.82	.91	.85
I can always calm down quickly when I am very angry.*						
I have good control of my own emotions	.86	.83	.93	.90	.83	.76
Composite reliability	.87	.86	.88	.86	.86	.82
Average variance extracted	.70	.67	.70	.66	.67	.60
Coefficient $\alpha$	.87	.85	.87	.85	.85	.81

**Table 12** (continued)

Item	Standardized loadings and validity measures					
	Germany		Russia		USA	
	Student	E/NoE	Student	E/NoE	Student	Ent/NoE
<b>Innovativeness</b>						
I often surprise people with my novel ideas	.83	.72	.64	.81	.68	.65
People often ask me for help in creative activities	.61	.72	.86	.70	.54	.70
I obtain more satisfaction from mastering a skill than coming up with a new idea. (r)*						
I prefer work that requires original thinking		.70		.65		.77
I usually continue doing a new job in exactly the way it was taught to me. (r)*						
I like a job which demands skill and practice rather than inventiveness. (r)*						
I am not a very creative person. (r)*						
I like to experiment with various ways of doing the same thing		.53		.66		.63
Composite reliability	-	.70	-	.80	-	.78
Average variance extracted	-	.44	-	.50	-	.49
Coefficient $\alpha$	.67	.76	.71	.80	.54	.78

E/NoE denotes the entrepreneur/non-entrepreneur samples, \* denotes deleted items, (r) denotes reverse-coded items

## References

- Abdesselam R, Bonnet J, Renou-Maissant P, Aubry M (2018) Entrepreneurship, economic development, and institutional environment: evidence from OECD countries. *J Int Entrep* 16:504–546
- Acs ZJ, Audretsch D (2003a) Innovation and technological change. In: Acs ZJ, Audretsch D (eds) *Handbook of entrepreneurship research*. Springer, Boston, pp 55–79
- Acs ZJ, Audretsch D (2003b) Introduction to the handbook of entrepreneurship research. In: Acs ZJ, Audretsch DB (eds) *Handbook of entrepreneurship research*. Springer, Boston, pp 3–20
- Aguinis H, Ramani RS, Cascio WF (2020) Methodological practices in international business research: an after-action review of challenges and solutions. *J Int Bus Stud* 51:1593–1608
- Ahlstrom D (2010) Innovation and growth: how business contributes to society. *Acad Manag Exec* 24:11–24
- Aidis R, Estron S, Tomasz M (2008) Institutions and entrepreneurship development in Russia: a comparative perspective. *J Bus Ventur* 23:656–666
- Ajzen I (1991) Theory of planned behavior. *Behavior Human Decision Process* 50:179–211
- Armitage CJ, Conner M (2001) Efficacy of the theory of planned behaviour: a meta-analytic review. *Br J Soc Psychol* 40:471–499
- Arregle J-L, Miller TL, Hitt MA (2013) Do regions matter? An integrated institutional and semiglobalization perspective on the internationalization of MNEs. *Strateg Manag J* 34:910–934
- Baron RA (2007) Entrepreneurship: a process perspective. In: Baum JR, Frese M, Baron RA (eds) *The psychology of entrepreneurship*. Lawrence Erlbaum Associates, Mahwah, pp 24–40
- Barrick M, Mount M (1991) The big five personality dimensions and job performance: a meta analysis. *Pers Psychol* 44:1–26
- Baughn CC, Neupert KE (2003) Culture and national conditions facilitating entrepreneurial start-ups. *J Int Entrep* 1:313–330
- Bird B (1988) Implementing entrepreneurial ideas: the case for intentions. *Acad Manag Rev* 13:442–454
- Bird B (2015) Entrepreneurial intentions research: a review and outlook. *Int Rev Entrep* 13:143–168

- Boso N, Oghazi P, Hultman M (2017) International entrepreneurial orientation and regional expansion. *Entrep Reg Develop* 29:4–26
- Boudreaux CJ, Nikolaev BN, Klein P (2019) Socio-cognitive traits and entrepreneurship: the moderating role of economic institutions. *J Bus Ventur* 34:178–196
- Brandstätter H (2011) Personality aspects of entrepreneurship: a look at five meta-analyses. *Personality Individ Differ* 51:222–230
- Brislin RW (1980) Translation and content analysis of oral and written material. In Triandis HC, Berry JW (Eds.), *Handbook of cross-cultural psychology* (Vol. 2, pp. 389–444)
- Carsrud A, Brännback M (2011) Entrepreneurial motivations: what do we still need to know? *J Small Bus Manag* 49:9–26
- Chatman J (1989) Improving interactional organizational research: a model of person-organization fit. *Acad Manag Rev* 14:333–349
- Chen CC, Greene PG, Crick A (1998) Does entrepreneurial self-efficacy distinguish entrepreneurs from managers? *J Bus Ventur* 13:295–316
- Ciavarella MA, Buchholtz AK, Riordan CM, Gatewood RD, Stokes GS (2004) The Big Five and venture survival: is there a linkage? *J Bus Ventur* 19:465–483
- Cortina JM (1993) What is coefficient alpha? An examination of theory and applications. *J Appl Psychol* 78:98–104
- Covin JG, Lumpkin GT (2011) Entrepreneurial orientation theory and research: reflections on a needed construct. *Entrep Theory Pract* 35:855–872
- Covin JG, Slevin DP (1991) A conceptual model of entrepreneurship as firm behavior. *Entrep Theory Pract* 16:7–25
- Cramer J, Hartog J, Jonker N, Van Praag C (2002) Low risk aversion encourages the choice of entrepreneurship: an empirical test of a truism. *J Econ Behav Organ* 48:29–38
- Crant JM (1996) The proactive personality scale as a predictor of entrepreneurial intention. *J Small Bus Manag* 34:42–49
- Cross B, Travaglione A (2003) The untold story: is the entrepreneur of the 21st century defined by emotional intelligence? *Int J Org Analysis* 11:221–228
- D'Intino RS, Goldsby MG, Houghton JD, Neck CP (2007) Self-leadership: a process for entrepreneurial success. *J Leader Org Stud* 13:105–120
- Dehghanpour Farashah A (2015) The effects of demographic, cognitive and institutional factors on development of entrepreneurial intention: toward a socio-cognitive model of entrepreneurial career. *J Int Entrep* 13:452–476
- Dheer RJS, Lenartowicz T (2018) Multiculturalism and entrepreneurial intentions: understanding the mediating role of cognitions. *Entrep Theory Pract* 42:426–466
- Drabe D, Hauff S, Richter NF (2015) Job satisfaction in aging workforces: an analysis of the USA, Japan, and Germany. *Int J Human Resour Manag* 26:783–805
- Dul J (2020) *Conducting necessary condition analysis*. Sage, London
- Engle R, Dimitriandi N, Gavidia J, Schlaegel C, Delanoe S, Alvarado I, ... Wolff B (2010) Entrepreneurial intent: a twelve country evaluation of Ajzen's model on planned behavior. *Int J Entrep Behav Res* 16:35–57
- Fawcett SE, Waller NG, Miller JW, Schwieterman MA, Hazen BT, Overstreet RE (2014) A trail guide to publishing success: tips on writing influential conceptual, qualitative, and survey research. *J Bus Logist* 35:1–16
- Fayolle A, Liñán F (2014) The future of research on entrepreneurial intentions. *J Bus Res* 67(5):663–666
- Fayolle A, Ulijn J, Degeorge J (2005) The entrepreneurial and innovative orientation of French, German, and Dutch engineers: the proposal of a European context based upon some empirical evidence from two studies. In: Fayolle A, Kyrö P, Ulijn J (eds) *Entrepreneurship research in Europe*. Edward Elgar, Cheltenham, pp 227–255
- Fayolle A, Basso O, Bouchard V (2010) Three levels of culture and firms' entrepreneurial orientation: a research agenda. *Entrep Reg Develop* 22:707–730
- Fishbein M, Ajzen I (1975) *Belief, attitude, intention, and behavior: an introduction to theory and research*. Addison-Wesley, Reading
- Frese M, Fay D, T., H., Leng, K., & Tag, A. (1997) The concept of personal initiative: operationalization, reliability and validity in two German samples. *J Occup Org Psychol* 70:139–161

- Frese M, Gielnik MM (2014) The psychology of entrepreneurship. *Ann Rev Org Psychol Org Behav* 1:413–438
- Fuller BJ, Marler LE (2009) Change driven by nature: a meta-analytic review of the proactive personality literature. *J Vocat Behav* 75:329–345
- Gartner WB (1988) “Who is an entrepreneur?” is the wrong question. *Entrep Theory Pract* 13:47–68
- Goleman D (1995) Emotional intelligence. Bantam Books, New York
- Gosling SD, Rentfrow PJ, Swann WBJ (2003) A very brief measure of the big five personality domains. *J Res Pers* 37:504–528
- Green R, David J, Dent M (1996) The Russian entrepreneur: a study of psychological characteristics. *Int J Entrep Behav Res* 2:49–58
- Hauff S, Richter NF (2015) Power distance and its moderating role in the relationship between situational job characteristics and job satisfaction: an empirical analysis using different cultural measures. *Cross Cult Manag: Int J* 22:68–89
- Hauff S, Richter NF, Tressin T (2015) Situational job characteristics and job satisfaction: the moderating role of culture. *Int Bus Rev* 24:710–723
- Heggestad E (2007) Personality. In: Rogelberg S (ed) *Encyclopedia of industrial and organizational psychology*. Sage, Thousand Oaks, pp 607–611
- Heunks F (1998) Innovation, creativity, and success. *Small Bus Econ* 10:263–272
- Hisrich R, Langan-Fox J, Grant S (2007) Entrepreneurship research and practice: a call to attention for psychology. *Am Psychol* 62:575–589
- Holmes RM, Miller TJ, Hitt MA, Salmador MP (2011) The interrelationships among informal institutions, formal institutions, and inward foreign direct investment. *J Manag* 39:531–566
- Hsu DK, Burmeister-Lamp K, Simmons SA, Foo M-D, Hong MC, Pipes JD (2019) “I know I can, but I don’t fit”: Perceived fit, self-efficacy, and entrepreneurial intention. *J Bus Ventur* 34:311–326
- Jackson DN (1994) Jackson personality inventory: Revised Manual. Sigma Assessment Systems, Port Huron
- Judge TA, Higgins CA, Thoresen CJ, Barrick MR (1999) The Big Five personality traits, general mental ability, and career success across the life span. *Person Psychol* 52
- Jung D, Ehrlich S, DeNoble A, Baik K (2001) Entrepreneurial self-efficacy and its relationship to entrepreneurial action: a comparative study between the U.S. and Korea. *Manag Int* 6:41–53
- Kautonen T, van Gelderen M, Fink M (2013) Robustness of the theory of planned behavior in predicting entrepreneurial intentions and actions. *Entrep Theory Pract* 39:655–674
- Kirkwood J, Walton S (2010) What motivates ecopreneurs to start businesses? *Int J Entrep Behav Res* 16:204–213
- Kline P (2000) *Handbook of psychological testing*. Routledge, London
- Kristof AL (1996) Person-organization fit: an integrative review of its conceptualizations, measurement, and implications. *Pers Psychol* 49:1–49
- Krueger N (1993) The impact of prior entrepreneurial exposure on perceptions of new venture feasibility and desirability. *Entrep Theory Pract* 18:5–21
- Krueger N (2003) The cognitive psychology of entrepreneurship. In: Acs ZJ, Audretsch DB (eds) *Handbook of entrepreneurship research*. Springer, Boston, pp 105–140
- Krueger N, Carsrud A (1993) Entrepreneurial intentions: applying the theory of planned behavior. *Entrep Reg Develop* 5:316–323
- Krueger N, Reilly M, Carsrud A (2000) Competing models of entrepreneurial intentions. *J Bus Ventur* 15:411–432
- Kruzic D, Pavic I (2010) Students’ entrepreneurial characteristics: empirical evidence from Croatia. *Bus Rev* 14:217–222
- Levenburg N, Schwarz T (2008) Entrepreneurial orientation among the youth of India: the impact of culture, education, and environment. *J Entrep* 17:15–24
- Levie J, Autio E (2008) A theoretical grounding and test of the GEM model. *Small Bus Econ* 31:235–263
- Levine D, Stephan D, Krehbiel T, Berenson M (2005) *Statistics for managers*. Prentice Hall, Upper Saddle River
- Lienggaard B, Sharma PN, Hult GTM, Jensen MB, Sarstedt M, Hair Jr, JF, Ringle CM (2020) Prediction: coveted, yet forsaken? Introducing a cross-validated predictive ability test in partial least squares path modeling. *Dec Sci*, in-press
- Liñan F, Fayolle A (2015) A systematic literature review on entrepreneurial intentions: citation, thematic analyses, and research agenda. *Int Entrep Manag J* 11:907–933

- Littunen H (2000) Entrepreneurship and the characteristics of the entrepreneurial PERSONALITY. *Int J Entrep Behav Res* 6:295–309
- Man T, Lau T, Snape E (2008) Entrepreneurial competencies and the performance of small and medium enterprises: an investigation through the framework of competitiveness. *J Small Bus Entrep* 21:257–276
- Manfreda KL, Bosnjak M, Berzelak J, Haas I, Vehovar V (2008) Web surveys versus other survey modes: a meta-analysis comparing response rates. *Int J Mark Res* 50:79–104
- Markman GD, Baron RA (2002) Individual differences and the pursuit of new ventures: a model of person-entrepreneurship fit. In: Katz J, Welbourne T (eds) *Managing people in entrepreneurial organizations: advances in entrepreneurship, firm emergence and growth*, vol 5. Emerald Group Publishing Limited, Bingley, pp 23–53
- Markman GD, Baron RA (2003) Person-entrepreneurship fit: why some people are more successful entrepreneurs than others. *Hum Resour Manag Rev* 13:281–301
- Mayer J, Salovey P (1997) What is emotional intelligence? In: Salovey P, Sluyter DJ (eds) *Emotional development and emotional intelligence: educational implications*. Harper Collins, New York, pp 3–34
- McClelland DC (1965) N achievement and entrepreneurship: a longitudinal study. *J Pers Soc Psychol* 1(4):389–392
- McCrae RR, Costa PT (1987) Validation of the five-factor model of personality across instruments and observers. *J Pers Soc Psychol* 52:81–90
- McCrae RR, Costa PT (1999) A five-factor theory of personality. In: Pervin LA, John OP (eds) *Handbook of personality: theory and research*, vol 2nd. Guilford, New York, pp 139–153
- McCrae RR, John OP (1992) An introduction to the five-factor-model and its applications. *J Pers* 60:175–215
- Miner JB (1993) *Role motivation theories*. Routledge, New York
- Miner JB, Raju NS (2004) Risk propensity differences between managers and entrepreneurs and between low and high growth entrepreneurs: a reply in a more conservative vein. *J Appl Psychol* 89:3–13
- Minniti M, Naude W (2010) What do we know about patterns and determinants of female entrepreneurship across countries? *Eur J Develop Res* 22:277–294
- Mitchelmore S, Rowley J (2010) Entrepreneurial competencies: a literature review and development agenda. *Int J Entrep Behav Res* 16:92–111
- Moriano J, Gorgievski M, Laguna M, Stephan U, Zarafshani K (2012) A cross-cultural approach to understanding entrepreneurial intention. *J Career Dev* 39:162–185
- Mueller SL, Thomas AS (2001) Culture and entrepreneurial potential: a nine country study of locus of control and innovativeness. *J Bus Ventur* 16:51–75
- North DC (1990) *Institutions, institutional change and economic performance*. Cambridge University Press, Cambridge
- North DC (1991) Institutions. *J Econ Perspect* 5:97–112
- Northouse PG (2007) *Leadership: theory and practice*. Sage, Thousand Oaks
- Nunnally JC (1978) *Psychometric theory* (2nd, edition). McGraw-Hill, New York
- Paul J, Hermel P, Srivatava A (2017) Entrepreneurial intentions: theory and evidence from Asia, America, and Europe. *J Int Entrep* 15:324–351
- Perez J, Petrides K, Furnham A (2005) Measuring trait intelligence. In: Schulze R, Roberts RD (eds) *International handbook of emotional intelligence*. Hogrefe & Huber, Cambridge, pp 123–143
- Pervin LA (1968) Performance and satisfaction as a function of individual-environment fit. *Psychol Bull* 69:56–68
- Podsakoff PM, Organ DW (1986) Self reports in organizational research: problems and prospects. *J Manag* 12:531–544
- Pretorius M, Millard SM, Kruger ME (2005) Creativity, innovation and implementation: management experience, venture size, life cycle stage, race and gender as moderators. *South African J Bus Manag* 36:55–68
- Rauch A (2014) Predictions of entrepreneurial behavior: a personality approach. In: Chell E, Karatas-Özkan M (eds) *Handbook of research on small business and entrepreneurship*. Edward Elgar Publishing, Cheltenham, pp 165–183
- Rauch A, Frese M (2007) Born to be an entrepreneur? Revisiting the personality approach to entrepreneurship. In: Baum JR, Frese M, Baron RA (eds) *The psychology of entrepreneurship*. Lawrence Erlbaum Associates, Mahwah, pp 41–65




- Rauch A, Hulsink W (2014) Putting entrepreneurship education where the intention to act lies: an investigation into the impact of entrepreneurship education on entrepreneurial behavior. *Acad Manag Learn Educ* 14:187–204
- Richter NF, Cepeda G, Roldán JL, Ringle CM (2016a) European management research using partial least squares structural equation modeling (PLS-SEM) (editorial). *Eur Manag J* 34:589–597
- Richter NF, Hauff S, Schlägel C, Gudergan SP, Ringle CM, Gunkel M (2016b) Using cultural archetypes in cross-cultural management studies. *J Int Manag* 22:63–83
- Richter NF, Schlaegel C, Midgley DF, Tressin T (2019) Organizational structure characteristics' influences on international purchasing performance in different purchasing locations. *J Purchasing Supply Manag* 25:1–25
- Richter NF, Schlaegel C, van Bakel M, Engle R (2020a) The expanded model of cultural intelligence and its explanatory power in the context of expatriation intention. *Eur J Int Manag* 14:381–419
- Richter NF, Schubring S, Hauff S, Ringle CM, Sarstedt M (2020b) When predictors of outcomes are necessary: guidelines for the combined use of PLS-SEM and NCA. *Industr Manag Data Syst* 120:2243–2267
- Richter NF, Sinkovics RR, Ringle CM, Schlaegel C (2016c) A critical look at the use of SEM in International Business research. *Int Mark Rev* 33:376–404
- Riedo V, Kraiczky ND, Hack A (2019) Applying person-environment fit theory to identify personality differences between prospective social and commercial entrepreneurs: an explorative study. *J Small Bus Manag* 57:989–1007
- Ronen S, Shenkar O (2013) Mapping world cultures: cluster formation, sources and implications. *J Int Bus Stud* 44:867–897
- Salovey P, Mayer JD (1990) Emotional intelligence. *Imagination Cognit Personal* 9:185–211
- Saucier G (1994) Mini-markers: a brief version of Goldberg's unipolar big-five markers. *J Pers Assess* 63:506–516
- Schlaegel C, Engle RL, Dimitriadi N, Taureck PC (2015) 'Why not now?' Triggers and barriers of new venture creation: a meta-analysis and multinational comparison of entrepreneurs' perspectives. *Int J Entrep Ventur* 7:227–250
- Schlaegel C, He X, Engle RL (2013) The direct and indirect influences of national culture on entrepreneurial intentions: a fourteen nation study. *Int J Manag* 30:597–609
- Schlaegel C, Koenig M (2014) Determinants of entrepreneurial intent: a meta-analytic test and integration of competing models. *Entrepr Theory Pract* 38:291–332
- Schlaegel C, Richter NF, Taras V (2017) Cultural intelligence and work-related outcomes: a meta-analytic review. *Acad Manag Proc* 2017
- Schmidt O, Engle R (2010) Sales representatives and entrepreneurs: do they have an overlapping set of personal characteristics, skills and abilities? Paper presented at the Proceedings of the 10th Annual Conference on International Business, University of North Florida, Jacksonville
- Schmitt N (1996) Uses and abuses of coefficient alpha. *Psychol Assess* 8:350–353
- Schumpeter J (1934) *The theory of economic development*. Harvard University, Boston
- Segal G, Borgia D, Schoenfeld J (2005) The motivation to become an entrepreneur. *Int J Entrep Behav Res* 11:42–57
- Shane S, Venkataraman S (2000) The promise of entrepreneurship as a field of research. *Acad Manag Rev* 25:217–226
- Shapiro A (1975) The displaced, uncomfortable entrepreneur. *Psychol Today* 9:83–88
- Shapiro A, Sokol L (1982) Social dimensions of entrepreneurship. In: Kent C, Sexton D, Vesper K (eds) *The encyclopedia of entrepreneurship*. Prentice Hall, Englewood Cliffs, pp 72–90
- Shmueli G (2010) To explain or to predict? *Stat Sci* 25:289–310
- Shook CI, Priem RL, McGee JE (2003) Venture creation and the enterprising individual: a review and synthesis. *J Manag* 29:379–399
- Siu WS, Lo ESC (2013) Cultural contingency in the cognitive model of entrepreneurial intention. *Entrepr Theory Pract* 37:147–173
- Snee R (1973) Some aspects of nonorthogonal data analysis, part 1: developing prediction equations. *J Qual Technol* 5:67–79
- Stewart WH, Carland J, Carland J, Watson W, Sweo R (2003) Entrepreneurial dispositions and goal orientations: a comparative exploration of United States and Russian entrepreneurs. *J Small Bus Manag* 41:27–46
- Stewart WH, Roth PL (2001) Risk propensity differences between entrepreneurs and managers: a meta-analytic review. *J Appl Psychol* 86:145–153

- Stewart WH, Roth PL (2004) Data quality affects meta-analytic conclusions: a response to Miner and Raju (2004) concerning entrepreneurial risk propensity. *J Appl Psychol* 89:14–21
- Terjesen S, Hessels J, Li D (2013) Comparative international entrepreneurship: a review and research agenda. *J Manag* 42:299–344
- Thomas JP, Whitman DS, Viswesvaran C (2010) Employee proactivity in organizations: a comparative meta-analysis of emergent proactive constructs. *J Occup Org Psychol* 83:275–300
- Tkachev A, Kolvereid L (1999) Self-employment intentions among Russian students. *Entrep Reg Develop* 11:269–280
- Voss ZG, Voss GB, Moormann C (2005) An empirical examination of the complex relationships between entrepreneurial orientation and stakeholder support. *Eur J Mark* 39:1132–1150
- Williamson OE (2000) The new institutional economics: taking stock, looking ahead. *J Econ Literature* 38:595–613
- Winslow EK, Solomon GT (1993) Entrepreneurs: architects of innovation, paradigm pioneers and change. *J Creative Behav* 27:75–88
- Wong C, Law K (2002) The effects of leader and follower emotional intelligence on performance and attitude: an exploratory study. *Leadersh Quart* 13:243–274
- Wood SA, Hampson SE (2005) Measuring the big five with single items using Bipolar Response Scale. *Eur J Pers* 19:373–390
- Yari N, Lankut E, Alon I, Richter NF (2020) Cultural intelligence, global mindset, and cross-cultural competencies: a systematic review using bibliometric methods. *Eur J Int Manag* 14:210–250
- Zampetakis LA (2008) The role of creativity and proactivity on perceived entrepreneurial desirability. *Thinking Skills Creative* 3:154–162
- Zampetakis LA, Kafetsios K, Bouranta N, Dewett T, Moustakis VS (2009) On the relationship between emotional intelligence and entrepreneurial attitudes and intentions. *Int J Entrep Behav Res* 15:595–618
- Zhao H, Seibert SE (2006) The big five personality dimensions and entrepreneurial status: a meta-analytical review. *J Appl Psychol* 91:259–271
- Zhao H, Seibert SE, Lumpkin GT (2010) The relationship of personality to entrepreneurial intentions and performance: a meta-analytic review. *J Manag* 36:381–404

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