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Personality and self-employment: A journey into the craft's way of doing business

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Abstract:

The renewed scholarly interest in the craft-based mode of competition, work, learning and innovation suggests that there are some unique aspects of the craft's way of doing business. Using a large panel data set, the present paper takes a closer look at this issue by examining the personality characteristics of business owners. Our results confirm that an individual's personality affects the likelihood of self-employment, but certain traits have a different effect in the case of crafts vis-à-vis non-crafts. We interpret this as evidence for the specificity of the 'crafts' at the fundamental level of human personality. Thus, personality traits can influence self-employment decisions differently, depending on the sector or field of entrepreneurship. The paper concludes with implications for policy and research.

JEL: D91; L26; M13; M21

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1. Introduction

Recently, economic activity in the crafts has received increased attention in entrepreneurship and management research, with studies examining the typical competitive strategies chosen by owners of craft companies (Cattani et al., 2017; Solomon & Mathias, 2020; Sasaki et al., 2021), the role of crafts people's shared identities in human well-being and business success (Mathias, et al., 2018; Binder & Blankenberg, 2022), the craft-specific approach to work organization and knowledge acquisition (e.g. Kuhn & Galloway, 2015; Bell & Vachhani, 2020; Bell et al., 2021; Kroezen, et al., 2021), and related forms of firm-level innovation (Thomä & Zimmermann, 2020; Runst & Thomä, 2022a).

This renewed scholarly interest in the craft-based mode of competition, work, learning and innovation suggests that there is something 'unique' about the craft's way of doing business (Sennett, 2008). Just to give a few examples: Kroezen et al. (2021) conceptualize 'craft' as "a timeless approach to work that prioritizes human engagement over machine control". Closely related to this, the empirical results of Binder & Blankenberg (2022) imply that the strong desire among craftspeople to work with their own hands, applying their skills and know-how in the creation of products or services, is a source of individual pride and occupational identity. Taking this further, Cattani et al. (2017) use the case example of a certain enterprise to show how business success in the crafts can be secured through a differentiation strategy that is based on a strong commitment to experience-based 'craftsmanship' – even if this is associated with higher production costs. To give another example, the study by Solomon & Mathias (2020) confirms that business owners in the crafts, due to their strong desire for personal independence, tend to avoid being influenced by external stakeholders – and therefore often have a critical view of the benefits of business growth. With regard to learning, Kuhn & Galloway (2015) show that crafts entrepreneurship is associated with specific types of peer advice and support exchanged through external networks between members of craft-based communities of practice (on this topic, also see Amin & Roberts, 2008). Finally, Runst & Thomä (2022a) find that an incremental mode of innovation based on experiential knowledge and learning by doing, using and interacting (DUI) is relatively widespread in the crafts, which enables companies there to at least partially compensate for their lack of in-house research & development (R&D) in the innovation process.

The aim of this paper is to take a closer look at what makes the crafts unique in a general sense – and thus to shed light on the unifying core of the various studies mentioned above. We argue that the fundamental specificity of the crafts is closely linked to the personal characteristics of the business owner – or entrepreneur –, as he or she has a formative influence on all operational matters in the mostly very small craft enterprises (Runst & Thomä, 2022a). In fact, the 'crafts entrepreneur' has been conceptualized in the literature to have distinct motivations and goals (e.g. Smith, 1967; Smith & Miner, 1983; Cooper & Dunkelberg 1986; Woo et al., 1991; Miner et al., 1992), with characteristics that correspond well to the above examples of the specificities of business activity in the crafts – e.g. regarding the high personal value that craftspeople place on the mastery of knowledge and skills in a specific technical field, the strong desire of business owners in the crafts for self-determined work or their lower willingness to take risks. In this paper, we therefore take a personality approach and empirically investigate the relationship between personality traits and self-employment in the crafts on the basis of a representative panel data set of German individuals. By comparing this with individuals who become self-employed in non-crafts occupations, we examine the specificities of crafts entrepreneurship – which ties in with the recent research efforts on the craft-based mode of doing business (e.g. Kuhn & Galloway, 2015; Cattani et al., 2017; Solomon & Mathias, 2020; Kroezen et al., 2021; Sasaki et al., 2021).

We consider broad (the Big Five; see Digman, 1990; John et al., 1991; John et al., 2008; McCrae & Costa, 2008;) and narrow traits of personality (locus of control, risk tolerance; see Rotter, 1966; Chell et al., 1991) – which represents a common measurement approach to personality in the entrepreneurship literature (for related studies, see e.g. Brandstätter, 2011; Caliendo et al., 2014; Leutner et al., 2014; Obschonka & Stuetzer, 2017; Runst & Thomä, 2022b). In this way, the present paper also aims contribute to the empirical literature on the general link between self-employment and personality by showing that it is necessary to distinguish between different sectors or fields of entrepreneurship when analyzing the influence of personality traits on self-employment decisions.

The remainder of the paper is structured as follows. Section 2 discusses the theoretical background of the empirical analysis. Section 3 presents the data set and describes the methodical procedure, before the results are detailed in Section 4. Finally, in Section 5, we summarize our findings and draw conclusions for policy and research.

2. Theoretical Background

2.1. The crafts entrepreneur

According to a widely used theoretical typology (e.g. Woo et al., 1991; Miner et al., 1992; Solomon & Mathias, 2020), which goes back to Smith (1967) and Smith & Miner (1983), there is a basic entrepreneurial type that we expect to be closely associated to business activity in the crafts. For the 'crafts entrepreneur', the opportunity for self-

directed work and personal autonomy constitutes a primary motivation for venturing into self-employment (Hornaday, 1990; Bridge & O'Neill, 2018; Runst & Thomä, 2021; Binder & Blankenburg, 2022). According to this concept, these individuals are less motivated by financial gains and the opportunity to build a large business organization. Instead, crafts entrepreneurs can be more succinctly characterized by personal goals such as a desire for independence, autonomy, and self-realization through active participation in the productive and creative processes (Smith & Miner, 1983, Woo et al., 1991, Kuhn & Galloway, 2015; Amin & Roberts, 2008; Solomon & Mathias, 2020). They value the act of practicing a trade or occupation, and thus the mastery of knowledge and skills, i.e. the achievement of craftsmanship (Nooteboom, 1994; Sennett, 2008; Hoyte, 2019; Thomä & Zimmermann, 2020; Binder & Blankenburg, 2022). On the other hand, administrative and management tasks tend to be perceived as a necessary evil of entrepreneurial activity (Smith & Miner, 1983, Woo et al., 1991; Das & Teng, 1998). Accordingly, people who opt for self-employment in the crafts often strive for personal competency and creative problem-solving in the creation of individualized, non-mass-produced products and services. They do not have a well-developed marketing strategy, but – to the extent it exists at all – it emphasizes the company's reputation of delivering high quality.

Since crafts entrepreneurs often find their personal self-fulfillment in the acquisition of tacit know-how in a specific technical field, innovations conducted by crafts enterprises are usually of a customized nature and often take the form of step-by-step optimization, further development or adaptation of existing products, services and processes (i.e. incremental innovations; Das & Teng, 1998; Miner et al., 1992; Amin & Roberts, 2008; Thomä & Zimmermann, 2020; Runst & Thomä, 2022a). Building and developing person-embodied experience and interpersonal interaction therefore plays a central role in learning and innovation in crafts entrepreneurship, which is why knowledge transfer processes (e.g. between apprentices and master craftsmen, or with customers) require spatial proximity in the form of face-to-face communication, or on-site development of innovative problem solutions (Amin & Roberts, 2008).

Table 1. The crafts entrepreneur in theory

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- Motivated by the desire for personal autonomy/self-fulfillment and less by a desire for organizational or financial success
 - Preference for stability rather than growth
 - Preference for mastering knowledge and skills in a specific technical field (craftsmanship) over administrative/managerial tasks
 - Innovations tend to be customized and incremental in nature
 - Marketing strategies emphasize company reputation and quality of products and services
 - Knowledge transfer requires co-location (i.e., face-to-face communication or on-site demonstration)
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Source: Own compilation starting from Smith (1967) and Smith & Miner (1983).

Moreover, crafts entrepreneurs tend to stick to tried and tested routines (Miner et al., 1992; Das & Teng, 1998; Hoyte, 2019). In doing so, they perfect traditional ways of working and doing. When they make changes, they do so less proactively and are less likely to create new markets and introduce novel products, processes and services. Instead, self-employed people of this type behave relatively more reactively: they tend to adapt more slowly to changing conditions and only do so to the necessary extent to safeguard their existing business model, thus limiting entrepreneurial risk (Miner et al., 1992; Bridge & O'Neill, 2018). Crafts entrepreneurs therefore often run long-lasting businesses that tend to remain small, preferring stability over growth (Solomon & Mathias, 2020).

The results of Runst & Thomä (2021) provide empirical evidence for our assumption that the likelihood of being a 'crafts entrepreneur' is considerably higher among self-employed individuals in the crafts than in non-crafts occupations. Based on data from the IAB/ZEW Start-up Panel – a representative survey of start-up businesses in Germany – they show that the desire for self-determined work and the implementation of a new business idea are the most frequent driving forces for starting up a business, both in the crafts and in the non-crafts. However, the motive of 'self-determined work' is significantly more important among founders in the crafts than in non-crafts occupations. This points to the motives and goals of the crafts entrepreneur described above, which are less aimed at the desire for profit and growth, but rather determined by the desire for personal autonomy and self-realization. In contrast, the implementation of a new business idea is relatively less often the central motive for founding a company in the crafts – which in turn may indicate a lower personal focus on profit and growth.

2.2. Broad and narrow personality traits

The Big Five is a widely used model of personality traits (Digman, 1990; John et al., 1991; John et al., 2008; McCrae & Costa, 2008). It assumes that the main facets of a human personality can be condensed to five basic dimensions that remain more or less stable across the lifespan: extraversion, conscientiousness, emotional stability, openness to experience and agreeableness. *Extraversion* indicates a preference for social interactions. It is also increasingly associated with a higher reward sensitivity (see Lucas et al., 2000; Cohen et al., 2005). Agreeable individuals try to avoid interpersonal conflict, forgive others more easily, and are more thoughtful in their interactions with others. They prefer cooperation over competition. In addition, *agreeableness* is associated with expressing oneself carefully to avoid upsetting others and showing a higher degree of empathy. On the other hand, people with higher scores of *conscientiousness* act in a controlled and structured way. They plan ahead and tend towards perfectionism. At the same time, they show a higher degree of accuracy, diligence, precision and determination. The trait of *emotional stability* indicates how well a person is able to deal with setbacks and stress factors. High emotional stability is associated with less severe mood swings, less anxiety, sadness, insecurity or other negative feelings. *Openness* indicates how willing a person is to make new experiences. Open-minded persons enjoy change and are more likely to be creative, imaginative and experimental, while they also have a strong imagination.

The impact of the Big Five on the probability of self-employment and related entrepreneurial decisions has been extensively studied. Extraversion and openness in particular and – less clear– emotional stability and conscientiousness can have a positive influence on entrepreneurial decisions (e.g. Zhao et al., 2010; Brandstätter, 2011; Caliendo et al., 2014; Runst & Thomä, 2022b). Agreeableness shows no effects, apart from one paper finding a positive impact on exits from self-employment (see Caliendo et al., 2014). Zhao et al. (2010) argue that agreeableness should be negatively related with both entrepreneurial performance and start-up intention, although their empirical results cannot support either hypothesis.

While the Big Five constitute broad personality traits, narrow personality traits are also discussed in the literature. The four most important narrow traits associated with entrepreneurship are achievement motivation, need for autonomy, risk tolerance and locus of control (Bridge & O'Neill, 2018). Based on the data available to us (see Section 3), we can examine the influence of the latter two of these traits on self-employment. A person's self-efficacy belief or *locus of control* (LOC, Rotter, 1966) reflects the conviction that a person has control over their own life. By contrast, a person scoring low on LOC believes that his or her life is shaped by external factors over which he or she has no control. Furthermore, the degree of individual *risk tolerance* (Chell et al., 1991) is a narrow personality dimension that is plausibly related to entrepreneurial decisions, since the outcomes of self-employment are often uncertain. Moreover, humans have different risk preferences: some people prefer smaller, more secure income streams, while others would rather choose larger but more uncertain ones. The effects of LOC and risk tolerance have also been repeatedly investigated, supporting the hypothesis of a positive impact on the probability of self-employment (e.g. Caliendo et al., 2014).

2.3. Hypotheses

Entrepreneurs challenge old routines and processes, they create new markets that did not exist before, or they serve an existing demand in a better way than before. Moreover, they are more likely to be alert to profit opportunities (Knight, 1921; Schumpeter, 1934; Hayek, 1945; Kirzner, 1997). Thus, on the one hand, individuals who are open to new experiences should be more likely to recognize entrepreneurial opportunities than others, which should also be true for the crafts entrepreneur. For example, in her conceptual paper, Hoyte (2019) describes the openness of artisan entrepreneurs (representing a subsample of craftspeople who are found in the cultural and creative industries) and their willingness to pass on cultural traditions. Furthermore, she argues that artisan entrepreneurs are passionate and creative about producing and selling hand-made products that are connected to their cultural heritage, because they are open to new things and incremental innovation. On the other hand, the degree of openness may be less important for crafts entrepreneurs as they are less focused on growth, profit-making and radical innovation (see Section 2.1). If one's primary goal is to practice a trade and to generate incremental innovations in response to situational customer needs or circumstances, openness is less relevant than, for example, in highly innovative ventures that need to be constantly on the lookout for new trends and developments. In the case of crafts, we therefore expect openness to be less strongly associated with self-employment than in non-crafts (H1).

Entrepreneurship is always socially embedded (Saravathy, 2001; 2008; Storr, 2008), given that entrepreneurs need to communicate and socialize with employees, customers, suppliers, financial institutions and other external partners. Generally speaking, extroverts should therefore be more attracted to self-employment than introverts. We expect this effect to be particularly pronounced among crafts entrepreneurs, where the existence of close personal customer relationships, the often very personal relationships between business owners and their employees or apprentices, and the need for personal proximity in the transfer of tacit knowledge place special demands on the willingness to socially

engage with others (see Table 1). Moreover, innovation in crafts enterprises is highly dependent on interactive learning due to a lower orientation on in-house R&D (Thomä & Zimmermann, 2020; Runst & Thomä, 2022a). Overall, we therefore argue that extraversion is a key driver of entrepreneurship in general, although its effect size should be stronger in the case of self-employment decisions in the crafts (H2).

The relationship between the trait of conscientiousness and self-employment is somewhat ambivalent. On the one hand, highly conscientious people who value routines may not be attracted to the uncertainties of running a business. On the other hand, the efficiency orientation, determination and precision of conscientious people may promote business performance in the long run (Zhao et al., 2010; Brandstätter, 2011). Overall, the empirical literature does not provide evidence of a clear link between conscientiousness and self-employment. However, a positive effect of conscientiousness can be expected in case of the crafts. The desire for self-realization through the practice of a trade, craft or occupation – which is strongly anchored in the crafts entrepreneur type (see above) – and the associated high level of acquired professional-technical knowledge and skills suggests that a higher level of conscientiousness should positively affect self-employment in case of the crafts (H3). This hypothesis is in line with the conceptual proposition by Hoyte (2019) on the potential role of conscientiousness for artisan entrepreneurship in the cultural and creative industries. She states that crafts-based work requires a high degree of conscientiousness not only to learn a craft but also to practice it continuously throughout one's life and pass it on through generations, thus forming a common occupational identity.

Emotional stability – in particular the ability to make well-considered decisions under time pressure and deal with complex stress factors – is likely to be a general advantage for self-employed individuals (Zhao & Seibert, 2006; Zhao et al., 2010). Nevertheless, it can also be objected that less emotionally stable individuals might prefer owning a (most likely small) company compared to undertaking paid employment, as they are less likely to cope well as employees within a stressful work environment, with its stressful team interactions. Thus, individuals scoring low on emotional stability might engage in (necessity) entrepreneurship because it offers them a chance to leave paid employment. In summary, the effect of emotional stability on self-employment is ambivalent, and there are no specificities to be expected in the case of crafts entrepreneurship. The possible role of agreeableness also seems ambiguous: on the one hand, entrepreneurs need a certain amount of willpower in difficult conversations and the ability to tolerate such conflicts, while on the other hand, a very low level of owner agreeableness may resemble stubbornness and has the potential to disrupt social interaction to such an extent that employees may deliberately withhold their opinions and ideas. If owners insist on their own opinion without considering and including the thoughts of others, it can severely disrupt the business culture and hinder the co-creation of valuable new things (Runst & Thomä, 2022a). The possible influence of agreeableness on self-employment is thus – as in the case of emotional stability – ambivalent, supported by the mixed empirical results on this trait in the empirical literature (for an overview, see Brandstätter, 2011). Moreover, no crafts-specific hypothesis can be derived in this case.¹

In addition to the Big Five, the narrow personality traits of LOC and risk tolerance also play an important role in self-employment decisions (Caliendo et al., 2014; Leutner et al., 2014). In principle, a positive correlation between these and self-employment is to be expected (Bridge & O'Neill, 2018). A lack of belief in the effectiveness of one's own actions is likely to have a detrimental effect on self-employment for obvious reasons. A higher self-efficacy expectation is therefore an advantage for taking up and succeeding in business ownership. Simultaneously, LOC is likely to be expressed in the desire for self-determined and autonomous work through self-employment – i.e. a motivation that guides action above all for the crafts entrepreneur (see Section 2.1). A higher level of LOC should therefore have a positive influence on self-employment, especially in the crafts case, where the desire for self-directed work represents a major motivational factor (H4).

Finally, entrepreneurs must be willing to accept personal risks, although it can be assumed that the relative importance of risk tolerance differs between self-employed individuals in the crafts than in non-crafts occupations. The ability to bear risk is particularly important for self-employed persons who have a strong focus on high risk-high reward projects. By contrast, it is less relevant in the case of self-employment, when only tried and tested ways are being followed – as tends to be the case in the crafts (see above). While this does not mean that the willingness to take risks is unimportant among crafts entrepreneurs (Das & Teng, 1998) – indeed it is important for all forms of entrepreneurship – we typically observe higher rates of new business survival in the German crafts compared with the non-crafts case (Müller, 2017; Runst & Thomä, 2021). Overall, we therefore expect the degree of risk tolerance to have a lower impact on self-employment decisions in the crafts than in the non-crafts case (H5).

¹ Hoyte (2019) hypothesizes positive effects of emotional stability and agreeableness in the case of artisan entrepreneurship, as corresponding entrepreneurs would need a high level of both personality factors to maintain social relations within regional communities and thus secure their occupational identity.

3. Data and methods

Our empirical analysis is based on data from the German Socio-Economic Panel (GSOEP) for 2005 to 2019, a large-scale and representative annual household survey of more than 10,000 individuals in Germany.² The SOEP has been used several times in entrepreneurship research on the Big Five (e.g. Caliendo et al., 2014; Runst & Thomä, 2022b). Since 2005, a fifteen-item Big Five Inventory (BFI) has been included at regular intervals (i.e. in the five survey years of 2005, 2009, 2013, 2017 and 2019). Small item scales such as the BFI-15 have been shown to be reliable and valid compared to longer versions such as the BFI-44 (Rammstedt & John, 2007). Information on the narrow personality trait of LOC is available for 2005, 2010 and 2015, while risk tolerance was surveyed in all years. For the missing years, it is assumed that a person's traits have not changed and can be replaced by the last values available for the respective person. This assumption is plausible because personality traits are heritable and remain relatively stable over longer periods of time, especially in adulthood (Cobb-Clark & Schurer, 2012; Rantanen et al., 2007; Wortman et al., 2012).

The Big Five are generated via a factor analysis, with which the fifteen items are condensed into factor scores standardized to a mean of zero and a standard deviation of one for each of the five personality traits. As an example, the factor loadings for 2005 are shown in the appendix (Table A 1), which correspond to expected patterns (e.g. Hahn et al., 2012; Lang et al., 2011).³ The LOC variable is measured in the same way based on ten GSOEP questions on an individual's perceived self-efficacy, with all respondents' answers loading onto one factor. The variable risk tolerance is derived from a single GSOEP question, a self-assessment of one's own willingness to take risks (on a seven-point Likert scale).

The dataset also contains information on a number of other socio-demographic characteristics of the survey respondents (e.g. age, nationality, educational qualification), for which we control in the regression analysis. In line with Caliendo et al. (2014), and Runst & Thomä (2022b), the dependent variable of self-employment is used as an indicator of entrepreneurship. While fully recognizing that the concept of entrepreneurship and self-employment may not be the same, self-employment represents one important aspect of entrepreneurship and has been widely used in empirical research as an indicator of entrepreneurship. Table A2 in the appendix provides a descriptive overview of the variables used.

The empirical analysis refers to individuals aged between 19 and 59 years of age. In addition, disability pensioners, students, farmers, family workers, civil servants and military personnel are removed from the sample to focus on people for whom self-employment is a realistic option. Furthermore, we do not include observations from the 2016 and 2017 GSOEP "Refugee samples" in our analysis to ensure sample consistency over time and because there are clear personality differences between the specific group of refugees and the general German population (Runst & Thomä, 2022b).

The crafts case is captured in our data by using an occupation-based approach. Historically, the term 'crafts' was originally used to describe commercial activities different from agricultural production. Until the end of the Middle Ages, the crafts were organized in guilds that subsequently gave way to more competitive structures (Ogilvie, 2014). During the Industrial Revolution, the term crafts defined small-scale businesses different from both agriculture and industrial plants (Knöpp, 1930, p. 887). In Germany, the legislature passed a legal definition of crafts in 1897, introducing a list of trades assigned to the crafts sector. The list of trades still exists today, albeit somewhat updated as some trades no longer exist. Nevertheless, there is a strong continuity between the 19th century definition and the one used in Germany today. For example, butchers, bakers, hairdressers, brewers, opticians, and most construction activities belong to crafts occupations both around 1900 as well as now (Runst & Wyrwich, 2022).

Most importantly, our crafts classification is based on a person's current occupational status and thus on the concrete professional activities of self-employed individuals. This allows a relatively clear distinction between crafts and non-crafts in the sense of the hypotheses formulated above. The sorting of self-employed persons in crafts and non-crafts occupations is undertaken according to the scheme developed by Runst et al. (2019) and Haverkamp et al. (2019), based on the official German classification of occupations (KldB 92 and KldB 2010). Due to the long-time horizon of the GSOEP, we have opted for the KldB92 classification. A complete list of KldB92 occupations and their crafts or non-crafts assignment can be found in Runst et al. (2019). As a robustness test, this list of crafts trades in Germany is restricted to crafts occupations that belong to cultural and creative industries (artisans, see Table A4), i.e. what might be called the traditional core of crafts entrepreneurship (see the conceptual paper of Hoyte, 2019).

We examine the influence of broad BF personality traits as well as narrow personality traits (LOC and risk tolerance) on the probability of being self-employed. We employ OLS and logit regressions separately for individuals in

² Socio-Economic Panel (SOEP), data for 1984–2019, SOEP-Core v36, EU Edition, 2021, 10.5684/soep.core.v36eu.

³ The factor loadings for the other years are not shown but follow the same pattern. The corresponding results are available from the authors on request.

crafts and non-crafts occupations, testing whether the difference between coefficients in the crafts and non-crafts sample is statistically significant. We further sub-divide the sample of self-employed in two groups and run separate regressions to control for firm size effects. In category 1, we include all survey participants. In category 2, we focus only on self-employed persons with fewer than ten employees, including self-employed without employees. The empirical models contain a number of variables used in similar studies (e.g. a person's age, education and training qualifications, full- or part-time employment, gender, nationality, etc.).

4. Empirical results

4.1 Main results

We regress the dependent variable of self-employment against all personality traits and controls. Table 2 displays the results. Columns 1 and 2 juxtapose the crafts and non-crafts cases for all firm sizes, as described above. To control for potential firm size effects, the results in columns 3 and 4 are based on a restricted sample from which all self-employed individuals with ten or more employees have been dropped.

In line with our hypothesis, the coefficient for the extraversion variable is significantly different from zero across all four specifications. An increase in the extraversion score by one standard deviation raises the probability of self-employment by 1.3 to 2.3 percent (Table 2). Given that the baseline probability of being self-employed is 8 percent (non-crafts) and 11 percent (crafts), the magnitude of this effect is quite considerable. The coefficient is higher in the crafts (columns 2 and 4) than the non-crafts sample (columns 1 and 3), and the difference is statistically different from zero. In fact, the effect size in the crafts is almost twice as large as in the non-crafts sample. Hypothesis H2 is thus confirmed.

Based on the theoretical considerations and the previous literature, we were unable to formulate a general hypothesis in Section 2.3 concerning the conscientiousness trait. However, it was argued that in the crafts case there should be a positive effect of conscientiousness on self-employment (H3). Both statements are supported by the regression results: while the coefficient of the conscientiousness score is neither consistently negative nor positive across all four specifications, it is positive in the case of the crafts, and negative in the case of non-crafts, the difference between the two being statistically significant at the five percent level. We expect this finding to be related to the fact that the development of crafts skills and competences with the associated accuracy, precision and diligence in relation to professional activities (craftsmanship) is one of the typical guarantees of success for an entrepreneurial activity in the crafts, and that the desire to directly engage in the creation of a product or service is part of the craftsperson's identity. In this respect, our results speak for the validity of Hypothesis H3.

Similarly, the effect of the trait emotional stability is theoretically ambiguous. According to our results, its coefficient is negative in all four specifications and statistically significant in columns 1 to 3. However, its magnitude is quite small in the non-crafts occupations: An increase in the emotional stability score by one standard deviation reduces the likelihood of self-employment by less than half a percentage point (column 1). The magnitude is slightly larger in the crafts case (column 2) but this effect turns out not to be robust as the coefficient becomes non-significant once we restrict the sample to those self-employed with fewer than ten employees (column 4). Overall, there is some evidence of a small negative effect of emotional stability on self-employment, which supports the idea that emotionally less stable individuals are more prone to experiencing negative emotions when working within a team of other employees, and thus they are pushed into self-employment accordingly. However, as the effect size is small or even zero in the case of crafts occupations for small firms, this tentative conclusion should be treated with caution.

By contrast, there is considerable evidence in favor of a positive impact of the openness trait. Its coefficient is positive and statistically significant in all specifications. An increase in one standard deviation in the openness score increases the likelihood of self-employment by 1.7 to 2.5 percentage points, which must be deemed a considerable effect size. There is no difference between the crafts and non-crafts cases, prompting us to conclude that openness represents a core entrepreneurial personality trait whose importance does not seem to vary between the crafts and non-crafts. As a result, Hypothesis H1 is not confirmed. One may therefore argue that openness constitutes a universalistic personality trait of entrepreneurs. It thereby stands in contrast to extraversion, which is also positively related to being self-employed but matters more in the case of the crafts, or conscientiousness, which in itself is not a strong predictor of self-employment but also seems to be relatively more important for self-employment decisions in the crafts. Finally, as expected, we do not find reliable evidence of an effect of the agreeableness trait.

Table 2. OLS-Regression results (dependent variable: self-employment)

| | (1) Full sample | | Test for the difference of coeffi- cients | (3) Fewer than ten employees | | Test for the difference of coeffi- cients |
|-----------------------------|------------------------|------------------------|--|---------------------------------|------------------------|--|
| | Non-crafts | Crafts | | Non-crafts | Crafts | |
| Extraversion | 0.0129*** (0.0012) | 0.0234*** (0.0034) | *** | 0.0080*** (0.0017) | 0.0207*** (0.0051) | ** |
| Conscientiousness | -0.0042*** (0.0013) | 0.0045 (0.0039) | ** | -0.0032* (0.0019) | 0.0098* (0.0058) | *** |
| Emotional stability | -0.0045*** (0.0013) | -0.0115*** (0.0037) | * | -0.0041** (0.0019) | -0.0041 (0.0056) | |
| Openness | 0.0217*** (0.0014) | 0.0170*** (0.0040) | | 0.0234*** (0.0020) | 0.0245*** (0.0060) | |
| Agreeableness | 0.0020 (0.0013) | -0.0085** (0.0038) | ** | 0.0015 (0.0020) | 0.0023 (0.0058) | |
| Risk tolerance | 0.0112** (0.0004) | 0.0077*** (0.0012) | ** | 0.0085*** (0.0006) | 0.0061*** (0.0018) | |
| Locus of control | 0.0162*** (0.0011) | 0.0236*** (0.0032) | ** | 0.0120*** (0.0017) | 0.0277*** (0.0048) | *** |
| Age | 0.0110*** (0.0008) | 0.0267*** (0.0025) | | 0.0067*** (0.0013) | 0.0231*** (0.0039) | |
| Age squared | -0.0001*** (0.0000) | -0.0003*** (0.0000) | | -0.0000*** (0.0000) | -0.0002*** (0.0000) | |
| University | 0.0355*** (0.0025) | 0.0612*** (0.0130) | | 0.0274*** (0.0036) | 0.0336* (0.0177) | |
| Vocational training | -0.0166*** (0.0023) | 0.0108 (0.0078) | | -0.0167*** (0.0034) | 0.0281*** (0.0108) | |
| Full-time work | 0.0332*** (0.0032) | 0.0665*** (0.0093) | | 0.0011 (0.0048) | 0.0370** (0.0146) | |
| Part-time work | -0.0184*** (0.0032) | -0.0159* (0.0095) | | -0.0295*** (0.0047) | -0.0296** (0.0142) | |
| Female | -0.0124*** (0.0021) | -0.0138* (0.0082) | | -0.0050 (0.0032) | -0.0257* (0.0121) | |
| Unemployed (Lag) | -0.0351*** (0.0031) | 0.0000 (0.0096) | | -0.0435*** (0.0048) | 0.0076 (0.0157) | |
| Foreigner | -0.0000 (0.0034) | -0.0025 (0.0089) | | 0.0041 (0.0047) | 0.0113 (0.0125) | |
| Experience work | -0.0007*** (0.0001) | -0.0001 (0.0005) | | -0.0004* (0.0002) | -0.0001 (0.0007) | |
| Experience unempl. | 0.0005 (0.0004) | -0.0037*** (0.0010) | | 0.0000 (0.0005) | -0.0039*** (0.0014) | |
| Highschool | 0.0431*** (0.0024) | 0.1946*** (0.0135) | | 0.0401*** (0.0035) | 0.1820*** (0.0202) | |
| Disability | -0.0004*** (0.0001) | -0.0010*** (0.0002) | | -0.0004*** (0.0001) | -0.0010*** (0.0003) | |
| Father self-employed | 0.0416*** (0.0031) | 0.0646*** (0.0094) | | 0.0277*** (0.0044) | 0.0244* (0.0139) | |
| Capital Income | 0.1083*** (0.0044) | 0.3389*** (0.0262) | | 0.0598*** (0.0061) | 1.0137*** (0.0805) | |
| Constant | -0.2565*** (0.0178) | -0.6827*** (0.0560) | | -0.1510*** (0.0279) | -0.5515*** (0.0855) | |
| <i>N</i> | 98183 | 13376 | | 40308 | 6260 | |
| <i>Region dummies</i> | Yes | Yes | | Yes | Yes | |
| <i>Year dummies</i> | Yes | Yes | | Yes | Yes | |
| <i>Baseline probability</i> | 0.08 | 0.11 | | 0.05 | 0.07 | |

Notes: Robust standard errors, clustered on the individual level, are given in parentheses * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

We now turn to the narrow personality traits of risk tolerance and LOC, both of which should – according to the theoretical discussion above – be positively related to self-employment. The evidence supports these statements as their respective coefficients are statistically significant and positive across all specifications. In terms of magnitude, risk tolerance seems to be less important – with an effect size ranging from 0.6 to 1.1 percentage points – and LOC seems to be more important, with an effect size ranging from 1.2 to 2.8 percentage points. Risk tolerance similarly affects self-employment in the crafts and non-crafts case. As expected, (H5), the effect of risk tolerance is somewhat smaller in the crafts than in the non-crafts case, but this difference is no longer significant in firms with fewer than

10 employees (Table 2, columns 3 and 4). This finding could be explained by the fact that although the risk of a crafts-based venture is comparatively low in the long run, crafts entrepreneurs still need to be able to take risks initially, as the "sinking-the-boat risk" is relatively high immediately after starting a crafts company (Das & Teng, 1998). However, LOC displays a larger effect size in the case of the crafts, which supports Hypothesis H4.

The coefficients of all control variables are in line with expectations and previous studies (see e.g. Caliendo et al., 2014; Runst & Thomä, 2022b). The maximum of the inverted U-shape relationship⁴ for the age variable is located at the age of 50, meaning that an increase in age positively affects self-employment (at a decreasing rate) up to that point, after which the relationship turns negative. Both a university degree and vocational training increase the likelihood of self-employment. Full-time work positively affects the probability of self-employment, and part-time work does so negatively. Women are less likely to own a business, and there is no effect in the case of foreigners. There is also a strong positive impact of the father's self-employment status, which becomes smaller once we restrict the sample to small businesses. A high-school degree (*Abitur* – upper secondary education) is positively related, and disability is negatively related to owning a business, both of which are larger in magnitude in the case of the crafts. We find that there is a negative impact of unemployment on self-employment in the case of non-crafts, and no effect in the case of the crafts, suggesting the necessity entrepreneurship could play a stronger role in the crafts. Finally, the coefficient of capital income is always positive but stronger in the crafts case

4.2. Robustness

It could be argued that OLS cannot correctly estimate binary dependent outcomes; for example, because OLS predictions are not bounded by zero and one. In practice, this rarely – if ever – seems to be a problem, and OLS can be safely applied (Angrist & Pischke, 2009). Nevertheless, to check the robustness of our results, we re-estimate all specifications using logit regressions. The marginal effects in Table A3 (appendix) are similar to the OLS coefficients and support the conclusions drawn above.

More importantly, one may object that the occupations that make up the crafts sample could be defined differently, and that some of these alternative definitions may lead to different results. Indeed, what is meant by invoking the term 'crafts' is not always clearly defined in the literature. The crafts sample used in the main specifications of this paper encompasses all trades that are listed in the German trade and crafts code, which are therefore legally defined as belonging to the German crafts sector (see Runst et al., 2019). Of course, one could argue that this constitutes a particular, modern, and legalistic view. However, this list of trades is largely identical to what has been considered the crafts sector over 100 years ago, such as most construction trades, bakers and butchers, hairdressers, brewers or opticians (see Runst & Wyrwich 2022). We therefore argue that our crafts sample corresponds to a suitable and relevant crafts definition.

Nevertheless, we repeat the regression analysis, focusing on traditional trades whose companies are often found in creative or cultural industries, which we label as artisan trades. The complete list of trades can be seen in Table A4. By using the artisan definition, we follow the Anglo-American usage of the term 'crafts'. It centers on the decorative arts, which are applied for utilitarian purposes, such as pottery, textiles, woodworking, etc., but also includes other traditional and skill-based trades such as carpentry or building construction (see Müller et al., 2011). The regression results are displayed in Table A5. Overall, they generally support the previous findings. Extraversion positively affects self-employment, although the effect size is much larger for artisans than for the crafts in general, and non-crafts individuals. The same is true for the trait of conscientiousness, which seems to have a stronger impact in the artisan sample than in the general crafts, and the non-crafts. However, the openness coefficient is no longer positive and significant in the artisan sample, which suggest that changing the crafts definition matters to some degree, at least in this instance. Openness does not affect the self-employment decision in the case of the most traditional crafts trades (i.e. artisans), a result that seems to be intuitively plausible as tradition is in many ways the antithesis to being open to new developments. Finally, LOC positively affects both non-crafts and artisan self-employment, and its magnitude is larger in the latter.

5. Conclusion

The results of this paper confirm that – at the fundamental level of human personality – there are indeed specific characteristics in the craft's way of doing business, which may help to explain the renewed research interest in this field in recent years. It therefore makes sense in the context of entrepreneurial personality to distinguish between *universalistic effects* of traits that generally affect self-employment and *particularistic effects* that affect self-employment decisions in the crafts more than others. For example, the traits of extraversion and LOC can be described as

⁴ The x-value of the quadratic function is calculated as $x = -b/2a$.

universalistic, as they have both been found to positively affect self-employment in crafts and non-crafts occupations. Some evidence exists that openness and risk tolerance also exert a universalistic effect on self-employment, although its effect was no longer statistically significant in the case of crafts when the more narrowly defined artisan sample was used for robustness testing. Traits that exert universalistic effects on the likelihood of self-employment can also be thought of as core entrepreneurial traits.

On the other hand, the trait of conscientiousness exerts a particularistic effect. Its coefficient has been found to only be positive and statistically significant in the crafts case. This result is most likely related to the fact that the development of experience-based craftsmanship and the associated accuracy, precision and diligence of manual/technical work is one of the typical guarantors of success for self-employment in the crafts. Finally, the two traits of extraversion and LOC seem to exert also particularistic effects in the sense that their effect size is more pronounced in the crafts case. This finding can be explained by the typical characteristics of crafts entrepreneurship, according to which the craftsperson's motivation for self-employment is more strongly determined by the desire for personal autonomy and self-realization than by the pursuit of profit and business growth. At the same time, crafts enterprises are particularly dependent on interactive learning and external knowledge sourcing to ensure their ability to adapt and innovate, which probably explains why higher extraversion is an important driver of self-employment in the crafts. Moreover, going beyond previous empirical studies on the relationship between self-employment and personality, the results of this paper provide evidence for the first time (at least to our knowledge) that personality traits influence self-employment decisions differently depending on the sector or field of entrepreneurship, using the example of crafts.

Future research can build on the results of the present paper and transfer the personality approach to explore the specificities of the crafts to other topics such as human resource management, innovation or competitive strategies. Another starting point for future research efforts could be to investigate the driving personality factors for self-employment also in the non-crafts case in order to further differentiate the existing picture of the relationship between personality and self-employment decisions with regard also to other sectors or other fields of entrepreneurship. From a policy perspective, the results of the present paper imply that personality and corresponding differences depending on the area of self-employment at stake should be taken into account in the context of business start-up counselling. In particular, potential entrepreneurs may be more attracted to some types of entrepreneurship than others depending on their personality factors. For example, while there are certain traits – such as extraversion – that generally promote self-employment, others – such as conscientiousness – are only related to self-employment in the crafts. Our results can therefore improve career advice; for example, by targeting young, conscientious people who feel a strong desire for self-realization, personal autonomy and experience-based competence, and making them aware of the opportunities that crafts entrepreneurship offers in this respect.

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Appendix

Table A 1. Factor loadings after factor analysis (SOEP wave 2005)

| | Extraversion | Conscientiousness | Neuroticism (emotional stability) | Openness | Agreeableness |
|------------------|--------------|-------------------|--------------------------------------|-------------|---------------|
| Thorough | 0.13 | 0.66 | -0.02 | 0.05 | 0.11 |
| Communicative | 0.66 | 0.21 | -0.04 | 0.14 | 0.09 |
| Too rough | 0.05 | -0.09 | 0.15 | 0.15 | -0.48 |
| Inventive | 0.37 | 0.20 | -0.08 | 0.50 | -0.08 |
| Worried | -0.02 | 0.11 | 0.50 | 0.05 | 0.09 |
| Forgiving | 0.16 | 0.15 | -0.01 | 0.10 | 0.39 |
| Lazy | -0.06 | -0.45 | 0.06 | 0.16 | -0.18 |
| Social | 0.67 | 0.10 | -0.06 | 0.21 | 0.11 |
| Artistic | 0.21 | 0.07 | 0.03 | 0.41 | 0.15 |
| Nervous | -0.06 | -0.07 | 0.63 | 0.04 | -0.04 |
| Efficient | 0.17 | 0.60 | -0.06 | 0.18 | 0.14 |
| Reserved | -0.48 | 0.08 | 0.15 | 0.05 | 0.22 |
| Friendly | 0.15 | 0.28 | -0.01 | 0.12 | 0.58 |
| Imaginative | 0.32 | 0.04 | 0.01 | 0.52 | 0.09 |
| Stress resilient | 0.15 | 0.15 | -0.51 | 0.21 | 0.15 |

Source: GSOEP, own calculation

Note: Inverting the neuroticism value scale yields the variable emotional stability.

Table A 2. Variable overview and descriptive statistics (means)

| Variable | Description | All self-employed | | Self-employed persons with no or max. nine employees | |
|-----------------------|---|-------------------|---------------|---|---------------|
| | | <i>Non-crafts</i> | <i>Crafts</i> | <i>Non-crafts</i> | <i>Crafts</i> |
| Self-employed | Dummy for being self-employed | 0.08 | 0.11 | 0.05 | 0.07 |
| Extraversion | Metric factor scores | 0.02 | -0.04 | 0.01 | -0.04 |
| Conscientiousness | | 0.05 | 0.13 | 0.03 | 0.13 |
| Emotional stability | | 0.02 | 0.03 | 0.01 | 0.04 |
| Openness | | 0.00 | -0.06 | -0.02 | -0.07 |
| Agreeableness | | -0.048 | -0.134 | -0.061 | -0.133 |
| Risk tolerance | On a Likert scale (0-10) | 4.799 | 5.067 | 4.843 | 5.208 |
| Locus of control | Metric factor scores | 0.030 | -0.084 | 0.036 | -0.079 |
| Age | In years | 44.044 | 43.825 | 44.647 | 44.681 |
| University | Dummy for having a university degree | 0.266 | 0.044 | 0.279 | 0.053 |
| Vocational training | Dummy for individuals who finished an apprenticeship | 0.739 | 0.839 | 0.701 | 0.811 |
| Full-time work | Dummy for full-time work | 0.581 | 0.685 | 0.566 | 0.682 |
| Part-time work | Dummy for part-time work | 0.211 | 0.142 | 0.242 | 0.156 |
| Female | Dummy for females | 0.572 | 0.336 | 0.588 | 0.351 |
| Unemployed | Dummy for individuals not in paid work | 0.154 | 0.087 | 0.141 | 0.081 |
| Foreigner | Dummy for non-German nationality | 0.075 | 0.108 | 0.087 | 0.120 |
| Experience work | Full-time work experience prior to the year of observation | 14.816 | 17.103 | 14.378 | 17.223 |
| Experience unemployed | Years of unemployment experience prior to the year of observation | 1.188 | 1.401 | 1.321 | 1.491 |
| High school | Dummy for individuals who received a diploma from a secondary school qualifying for university entrance | 0.255 | 0.040 | 0.265 | 0.040 |
| Disability | Degree of disability in percent | 3.108 | 3.097 | 3.187 | 3.523 |
| Father self-employed | Dummy for having a father who was self-employed when the respondent was 15 years old | 0.092 | 0.096 | 0.099 | 0.097 |
| North | Dummy for individuals living in the North of Germany | 0.164 | 0.149 | 0.174 | 0.149 |
| East | Dummy for individuals living in the East Germany | 0.230 | 0.264 | 0.221 | 0.256 |
| West | Dummy for individuals living in the West Germany | 0.331 | 0.328 | 0.328 | 0.330 |
| South | Dummy for individuals living in the South Germany | 0.274 | 0.260 | 0.277 | 0.265 |
| Capital income | Household income from asset flows, Euros per year | 0.024 | 0.012 | 0.021 | 0.010 |
| N | | 98183 | 13376 | 46879 | 7279 |

Table A 3. Marginal effects after logit regression (dep. var. self-employed)

| | (1) | (2) | (3) | (4) |
|-------------------------|------------------------|------------------------|--------------------------|------------------------|
| | Full Sample | | Fewer than ten employees | |
| | Non-crafts | Crafts | Non-crafts | Crafts |
| Extraversion | 0.0133*** (0.0012) | 0.0215*** (0.0035) | 0.0082*** (0.0017) | 0.0197*** (0.0051) |
| Conscientiousness | -0.0040*** (0.0014) | 0.0093** (0.0041) | -0.0026 (0.0018) | 0.0132** (0.0057) |
| Emotional stability | -0.0048*** (0.0013) | -0.0117*** (0.0038) | -0.0044** (0.0018) | -0.0041 (0.0057) |
| Openness | 0.0228*** (0.0014) | 0.0194*** (0.0039) | 0.0239*** (0.0020) | 0.0264*** (0.0058) |
| Agreeableness | 0.0017 (0.0013) | -0.0079** (0.0036) | 0.0014 (0.0019) | 0.0017 (0.0051) |
| Risk tolerance | 0.0108*** (0.0005) | 0.0070*** (0.0013) | 0.0089*** (0.0006) | 0.0058*** (0.0017) |
| Locus of control | 0.0169*** (0.0013) | 0.0239*** (0.0033) | 0.0130*** (0.0018) | 0.0284*** (0.0045) |
| Age | 0.0140*** (0.0010) | 0.0346*** (0.0032) | 0.0106*** (0.0014) | 0.0315*** (0.0045) |
| Age squared | -0.0001*** (0.0000) | -0.0003*** (0.0000) | -0.0001*** (0.0000) | -0.0003*** (0.0000) |
| University | 0.0268*** (0.0024) | 0.0354*** (0.0103) | 0.0231*** (0.0033) | 0.0269** (0.0136) |
| Vocational training | -0.0092*** (0.0022) | 0.0161* (0.0086) | -0.0119*** (0.0031) | 0.0343*** (0.0112) |
| Full-time work | 0.0353*** (0.0042) | 0.0979*** (0.0134) | 0.0003 (0.0051) | 0.0486*** (0.0180) |
| Part-time work | -0.0229*** (0.0045) | -0.0086 (0.0151) | -0.0345*** (0.0055) | -0.0298 (0.0189) |
| Female | -0.0126*** (0.0021) | -0.0209** (0.0094) | -0.0061** (0.0030) | -0.0366*** (0.0131) |
| Unemployed (Lag) | -0.0724*** (0.0056) | -0.0079 (0.0136) | -0.0679*** (0.0070) | 0.0159 (0.0192) |
| Foreigner | 0.0001 (0.0037) | -0.0092 (0.0105) | 0.0049 (0.0046) | 0.0076 (0.0129) |
| Experience work | -0.0010*** (0.0001) | -0.0011* (0.0006) | -0.0006*** (0.0002) | -0.0005 (0.0007) |
| Experience unemployment | 0.0002 (0.0004) | -0.0057*** (0.0015) | -0.0002 (0.0005) | -0.0064*** (0.0017) |
| High school | 0.0335*** (0.0023) | 0.1050*** (0.0093) | 0.0316*** (0.0030) | 0.1101*** (0.0132) |
| Disability | -0.0007*** (0.0001) | -0.0018*** (0.0003) | -0.0006*** (0.0001) | -0.0023*** (0.0005) |
| Father self-employed | 0.0344*** (0.0028) | 0.0527*** (0.0086) | 0.0267*** (0.0039) | 0.0304** (0.0124) |
| Capital income | 0.0594*** (0.0118) | 0.5044*** (0.0615) | 0.0245*** (0.0062) | 0.5061*** (0.0757) |
| <i>N</i> | 98183 | 13376 | 40308 | 6260 |
| <i>Region dummies</i> | Yes | Yes | Yes | Yes |
| <i>Year dummies</i> | Yes | Yes | Yes | Yes |

Notes: Robust standard errors clustered at the individual level are given in parentheses * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table A 4. List of artisan trades

| | | | |
|--------------|--------------------------|----------------------|-------------------|
| Baker | Plasterer | Turner | Photographer |
| Shipwright | Carpenter | Toymaker | Porcelain painter |
| Roofer | Cabinetmaker | Weaver | Saddler |
| Butcher | Musical instrument maker | Potter | Metal caster |
| Hairdresser | Brewer | Clockmaker | Bellmaker |
| Confectioner | Bookbinder | Engraver | Miller |
| Painter | Lacquerer | Silversmith | Upholsterer |
| Bricklayer | Stonemason | Goldsmith | Sailmaker |
| Rope maker | Printer | Mosaic Layer | Embroiderer |
| Stone setter | Tailor | Tiler | Basketmaker |
| Winemaker | Furrier | Grinder and polisher | Stone carver |
| Wood-carver | Maltster | Joiner | |

Notes: For a list of occupations for the entire craft sample, see Runst et al. (2019) and Runst & Wyrwich (2022).

Table A 5. OLS regression results (dep. var. self-employed, artisan craftspeople only)

| | (1) Full sample | | Difference of coeff. | (3) Fewer than ten employees | | Difference of coeff. |
|-------------------------|------------------------|------------------------|-------------------------|---------------------------------|------------------------|-------------------------|
| | Non-crafts | Crafts | | Non-crafts | Crafts | |
| Extraversion | 0.0129*** (0.0012) | 0.0509*** (0.0112) | *** | 0.0080*** (0.0017) | 0.0506** (0.0212) | ** |
| Conscientiousness | -0.0042*** (0.0013) | 0.0183 (0.0124) | * | -0.0032* (0.0019) | 0.0425* (0.0231) | ** |
| Emotional stability | -0.0045*** (0.0013) | -0.0280** (0.0118) | * | -0.0041** (0.0019) | -0.0265 (0.0233) | |
| Openness | 0.0217*** (0.0014) | -0.0032 (0.0134) | * | 0.0234*** (0.0020) | 0.0171 (0.0256) | |
| Agreeableness | 0.0020 (0.0013) | -0.0303** (0.0128) | ** | 0.0015 (0.0020) | -0.0009 (0.0247) | |
| Risk tolerance | 0.0112*** (0.0004) | 0.0044 (0.0041) | | 0.0085*** (0.0006) | 0.0057 (0.0078) | |
| Locus of control | 0.0162*** (0.0011) | 0.0391*** (0.0107) | ** | 0.0120*** (0.0017) | 0.0522** (0.0211) | ** |
| Age | 0.0110*** (0.0008) | 0.0465*** (0.0077) | | 0.0067*** (0.0013) | 0.0402** (0.0159) | |
| Age squared | -0.0001*** (0.0000) | -0.0005*** (0.0001) | | -0.0000*** (0.0000) | -0.0003 (0.0002) | |
| University | 0.0355*** (0.0025) | 0.1730*** (0.0485) | | 0.0274*** (0.0036) | 0.1319 (0.0868) | |
| Vocational training | -0.0166*** (0.0023) | 0.0321 (0.0328) | | -0.0167*** (0.0034) | 0.0721 (0.0560) | |
| Full-time work | 0.0332*** (0.0032) | 0.1312*** (0.0455) | | 0.0011 (0.0048) | 0.1262 (0.0883) | |
| Part-time work | -0.0184*** (0.0032) | -0.0232 (0.0480) | | -0.0295*** (0.0047) | -0.0309 (0.0950) | |
| Female | -0.0124*** (0.0021) | 0.0328 (0.0252) | | -0.0050 (0.0032) | -0.0356 (0.0470) | |
| Unemployed (Lag) | -0.0351*** (0.0031) | 0.0161 (0.0342) | | -0.0435*** (0.0048) | -0.0280 (0.0834) | |
| Foreigner | -0.0000 (0.0034) | 0.0122 (0.0339) | | 0.0041 (0.0047) | 0.0888 (0.0560) | |
| Experience work | -0.0007*** (0.0001) | -0.0046** (0.0020) | | -0.0004* (0.0002) | -0.0119*** (0.0041) | |
| Experience unemployment | 0.0005 (0.0004) | -0.0076 (0.0048) | | 0.0000 (0.0005) | -0.0170** (0.0078) | |
| High school | 0.0431*** (0.0024) | 0.3232*** (0.0454) | | 0.0401*** (0.0035) | 0.3134*** (0.0762) | |
| Disability | -0.0004*** (0.0001) | -0.0001 (0.0008) | | -0.0004*** (0.0001) | 0.0008 (0.0016) | |
| Father self-employed | 0.0416*** (0.0031) | 0.0999*** (0.0270) | | 0.0277*** (0.0044) | 0.0825 (0.0506) | |
| Capital income | 0.1083*** (0.0044) | 0.9094*** (0.1284) | | 0.0598*** (0.0061) | 1.6796*** (0.3696) | |
| Constant | -0.2565*** (0.0178) | -1.1857*** (0.1733) | | -0.1510*** (0.0279) | -1.1044*** (0.3550) | |
| <i>N</i> | 98183 | 13376 | | 40308 | 6260 | |
| <i>Region dummies</i> | Yes | Yes | | Yes | Yes | |
| <i>Year dummies</i> | Yes | Yes | | Yes | Yes | |

Notes: Robust standard errors, clustered on the individual level, are given in parentheses * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$