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## Personality traits and the evaluation of start-up subsidies

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### A R T I C L E I N F O

Available online 28 December 2015

- JEL classification: C14 L26 H43 J68
- Keywords: Start-up subsidies Evaluation Self-employment Personality Treatment effects

### ABSTRACT

Many countries support business start-ups to spur economic growth and reduce unemployment with different programmes. Evaluation studies of such programmes commonly rely on the conditional independence assumption (CIA), allowing a causal interpretation of the results only if all relevant variables affecting participation and success are accounted for. While the entrepreneurship literature has emphasised the important role of personality traits as predictors for start-up decisions and business success, these variables were neglected in evaluation studies so far due to data limitations. In this paper, we evaluate a new start-up subsidy for unemployed individuals in Germany using propensity score matching under the CIA. Having access to rich administrative-survey data allows us to incorporate usually unobserved personality measures in the evaluation and investigate their impact on the estimated effects. We find strong positive effects on labour market reintegration and earned income for the new programme. Most importantly, results including and excluding individuals' personalities do not differ significantly, implying that concerns about potential overestimation of programme effects in the absence of personality measures might be less justified if the set of other control variables is rich enough.

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### 1. Introduction

It has been shown that entrepreneurship induces economic growth and lowers unemployment by increasing competition and hence firm productivity, inducing innovation and new technologies and transmitting knowledge spillovers (see Koellinger and Thurik, 2012; Fritsch, 2008; Audretsch and Thurik, 2001; Storey, 1994, for theoretical concepts and empirical evidence). Therefore, many countries provide various support measures to remove existing barriers for nascent entrepreneurs with the goal of increasing the overall start-up rate in their economies. The support ranges from soft measures such as counselling, coaching, training, or technical advice to direct financial support such as subsidised loans, grants, or start-up subsidies for the unemployed. In order to understand whether these programmes indeed achieve their main goal – i.e. fostering successful start-ups – causal empirical evidence is needed. In the past, many evaluation studies have been conducted investigating the effectiveness of soft (e.g. Fairlie et al., 2015; Rotger et al., 2012; Wren and Storey, 2002, among others) as well as hard support measures (e.g. Desiage et al., 2015; Caliendo and Künn, 2011; Tokila et al., 2008; Rodriguez-Planas and Jacob, 2010, among others). Since experimental evidence is very limited, in particular for industrialised countries,

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http://dx.doi.org/10.1016/j.euroecorev.2015.11.008 0014-2921/© 2015 Elsevier B.V. All rights reserved.

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most of the studies rely on a comparison of a treated and a non-treated group under the conditional independence assumption (CIA). This is a very strong assumption as it only allows a causal interpretation of the estimated outcome difference between the two groups if all information relevant for the decision to start a business and/or receive support as well as business development and labour market outcomes in general are observed by the researcher. Although the quantity and quality of data have significantly been improved in recent years, in particular due to the better availability of administrative data, there still exist substantial concerns about the justification of using the CIA in the context of the evaluation of start-up support programmes and hence the causal interpretation of treatment effects.

One of the reasons for this scepticism is based on the recent entrepreneurship literature that emphasises the key role of an individual's personality in affecting not only (i) the decision to become an entrepreneur but also (ii) the business development/success over time (for two metaanalytical surveys on this topic, see Rauch and Frese, 2007; Zhao et al., 2010). In a similar vein, it has been shown that personality also affects other labour market outcomes – such as wages (Heckman et al., 2006), search intensity (Caliendo et al., 2015a; McGee, 2015) and unemployment duration (Uysal and Pohlmeier, 2011) – which are relevant for the estimation of programme effects.

Hence, one major aim of our paper is to bring together these two strands of literature and investigate the role that individuals' personalities play for the estimation of causal programme effects under the CIA. This is especially relevant for our empirical analysis of a new start-up subsidy programme for unemployed individuals in Germany ("*Gründungszuschuss*"). The programme, which was introduced in August 2006 and has replaced two already existing programmes ("*Überbrückungsgeld*" and "*Existenz-gründungszuschuss*"), financially supports start-ups from previously unemployed potential entrepreneurs for up to 15 months. While the former programmes have been evaluated extensively (using the aforementioned identifying assumption, see e.g. Caliendo and Künn, 2011, 2015), no evidence for the new programme exists so far. One important advantage for our purpose is the availability of very informative data. In addition to administrative records on programme participants using the start-up subsidy and a comparison group of other unemployed job seekers, we have access to extensive information collected in a survey. Besides information on individuals' family backgrounds and intergenerational transmissions, the survey added specific information on individuals' personalities such as the "big-five", locus of control, and risk preferences. Since this type of data is (usually) not observable in administrative sources, it is ideally suited for our research purpose.

We contribute to the existing literature in three important dimensions: (i) we provide the first empirical evidence on the short- and long-run effectiveness of the new subsidy programme and assess whether the high effectiveness of the former programmes can be confirmed. (ii) Most importantly, we examine the sensitivity of the treatment effects with respect to the inclusion of usually unobserved personality variables in the estimation procedure. Although we do not claim that personality is the only component that was unobserved in earlier studies and, thus, might have biased the results under the CIA, it can be argued, based on the evidence stemming from the entrepreneurship literature, that it plays a significant role. Therefore, this study is of high relevance to the literature as our results will contribute to the discussion of whether earlier results estimated without explicit consideration of individuals' personalities are reliable or not, and it will investigate the necessity to collect personality characteristics. While earlier studies revealed heterogeneity regarding education, age, gender, and the regional economic situation, the personality component has yet to be examined due to data limitations. This is especially interesting as the expected relationship between the effectiveness of the start-up subsidy and higher degrees of particular personality characteristics (e.g., is the programme more effective for risk-averse or risk-loving individuals) is ambiguous from a theoretical point of view.

Based on an extensive propensity score specification – including not only a standard set of control variables similar to other studies, such as socio-demographics, labour market history, regional characteristics, and intergenerational determinants of self-employment, but in addition also personality traits – we find positive employment and income effects for the new subsidy programme over the entire 40 month observation period after start-up. We further find that the inclusion of personality variables in addition to the standard set of control variables leads to only small and mostly insignificant changes in the treatment effects. This indicates that the large set of control variables in the estimation of the propensity score, even when not directly controlling for personality, already sufficiently captures individuals' personalities. The analysis on effect heterogeneity reveals that there is only limited interaction between programme effectiveness and personality.

The paper is organised as follows. In Section 2, we provide a summary of the economic rationale behind start-up subsidies for the unemployed, take a closer look at the entrepreneurship literature by discussing recent theoretical concepts and empirical findings about the importance of individuals' personalities on the start-up decision and business development, introduce the institutional setting in Germany, summarise the previous empirical findings and outline the research questions of our study. Section 3 presents the data and some descriptive results. Section 4 discusses the estimation strategy, the potential occurrence of a hidden bias, and the implementation of the propensity score matching approach. In Section 5, we present the main estimation results and robustness analyses before Section 6 concludes. Download English Version:

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