

Secondary Publication



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Date of secondary publication: 15.12.2023

Version of Record (Published Version), Article

Persistent identifier: urn:nbn:de:bvb:473-irb-924543

Primary publication

Patzina, Alexander; Dietrich, Hans; Barabasch, Anton (2021): „Health, Personality Disorders, Work Commitment, and Training-to-Employment Transitions“. In: Social Inclusion, Vol. 10, Nr. 2, pp. 369-382, Lisbon: Cogitatio Press, doi: 10.17645/si.v10i2.5103.

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Article

Health, Personality Disorders, Work Commitment, and Training-to-Employment Transitions

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Submitted: 15 November 2021 | Accepted: 21 March 2022 | Published: 9 June 2022

Abstract

School-to-work transition research has persistently provided empirical evidence for the theoretical predictions of human capital, signaling, and credentialing, thereby emphasizing the importance of school performance and degree attainment for labor market entries. However, hitherto, research in this tradition has paid less attention to noncognitive and socio-emotional factors. We address this gap by analyzing the influence of mental and physical health, coping abilities, cooperativeness, and work commitment on the transition from apprenticeship training to first job. For this purpose, this study draws on a unique dataset of 1,061 individuals from Germany, combining rich survey (i.e., information concerning baseline health, personality disorders, and work attitudes) and register (i.e., labor market information) data. The results of linear probability models reveal that only physical health is associated with finding a first job within six months. Physical and mental health are associated with a smooth transition into the labor market, i.e., a situation in which an individual transitions into regular employment without any job search gaps. Overall health and coping abilities are important to finding decent employment. However, after taking important preselection variables (i.e., educational outcomes and training firm characteristics) into account, these associations are weakened and become statistically nonsignificant. Overall, this study provides evidence that health and personality disorders have the potential to induce inequality at an important life course stage.

Keywords

anxiety and depression; apprenticeship; cooperativeness; coping; health; school-to-work transition; SF-12; work commitment

Issue

This article is a part of the issue “Challenges in School-To-Work Transition: Perspectives on Individual, Institutional, and Structural Inequalities” edited by Brigitte Schels (Institute for Employment Research / University of Erlangen-Nuremberg) and Veronika Wöhrer (University of Vienna).

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1. Introduction

School-to-work transition outcomes are crucial for status attainment (e.g., Müller & Gangl, 2003), adolescents’ mental development (e.g., Schoon & Mortimer, 2017), and the life course development of health and subjective well-being (e.g., Kratz & Patzina, 2020; Leopold & Leopold, 2018). A key explanation provided by labor mar-

ket research has consistently shown that labor market entry positions have long-lasting impacts on individuals’ careers (e.g., Scherer, 2004). Even in labor markets with strong apprenticeship systems, which typically provide smooth transitions into labor markets, entry positions are important because prolonged periods of job searches and youth unemployment also occur in such institutional settings (e.g., Kratz et al., 2019; Müller & Gangl, 2003).

Human capital theory (e.g., Becker, 1964), signaling theory (e.g., Spence, 1973), and credentialing theory (e.g., Collins, 1979) have provided the main theoretical explanations for differences in short- and long-term labor market outcomes for different educational groups. Empirical findings from the “school-to-work transition” literature have supported these theoretical notions since studies in this area have emphasized the fact that the attainment of signals and credentials is of pivotal importance for successful transitions into the labor market (e.g., Fossati et al., 2020; Jacob & Solga, 2015; Patzina & Wydra-Somaggio, 2020). Additionally, the literature has provided evidence for the notion of human capital and has indicated that school performance (i.e., good grades) in upper-secondary education predicts high wages at the time of labor market entry (e.g., Wydra-Somaggio & Seibert, 2010). An emerging body of research has supplemented the classical strand of school-to-work research and shown that certain personality facets, such as self-efficacy, have a direct effect on school-to-work transition outcomes (e.g., access to vocational education and training [VET] or labor market entry) that is independent of degree attainment and school performance (e.g., Ng-Knight & Schoon, 2017; Pinquart et al., 2003; Protsch & Dieckhoff, 2011).

Hitherto, the literature has not provided systematic evidence concerning the impact of noncognitive and socioemotional factors like mental and physical health, personality disorders, or work commitment on individuals’ starting positions during transitions from education into labor markets. In particular, research on noncognitive and socioemotional factors has mainly focused on within-school analyses (e.g., Cornaglia et al., 2015; Di Giunta et al., 2013; Duchesne & Ratelle, 2010) or educational dropout (e.g., McLeod & Fettes, 2007). Research in this area has also mainly relied on overall mental health assessments and has not distinguished between physical and mental health or between general and specific mental health domains. Additionally, research concerning the influence of personality disorders and work attitudes on transitions into the labor market has been scant. To address this research gap, we formulate our main research question as follows: Do mental and physical health, personality disorders, and work attitudes affect training-to-employment transitions?

To answer this research question, we use a novel dataset on young individuals from the apprenticeship system during their final year of training. At approximately 63% of the total, a majority of individuals within a birth cohort continue to enter training in Germany. Thus, apprenticeships still constitute the dominant pathway for school-to-work transitions despite educational expansion and increasing levels of university enrollment. Due to the firm-based nature of such training, retention rates are high after graduation, and youth unemployment risks are rather low (e.g., Wolter & Ryan, 2011). The data employed for our study combine both survey and register data (i.e., the Integrated Employment

Biographies [IEB]; see Frodermann et al., 2021) and have two key features that are required to answer our research question. First, the data allow us to distinguish among overall health, mental and physical health, and domain-specific mental health (i.e., anxiety and depression). Distinguishing among these health factors is important because research has indicated that depressive symptoms particularly influence individuals’ school performance and perceptions of the future (e.g., Leykin et al., 2011; Roepke & Seligman, 2016), both of which are factors that are highly important in school-to-work transitions. In other words, in distinguishing among different facets of health, personality, and attitudes, our study contributes to the scholarly understanding of largely overlooked factors in theoretical and empirical research on transitions into labor markets.

Second, our dataset allows for the investigation of the contributions of noncognitive and socioemotional factors to three interesting training-to-employment transition outcomes. First, we are able to determine whether individuals find a job within six months after completing training. Thus, we investigate whether noncognitive and socioemotional factors enable individuals to avoid long-term youth unemployment (e.g., Council Recommendation of 22 April 2013, 2013; Kelly et al., 2012). Second, our data allow us to investigate whether apprentices can enter the labor market without any interruption after completing training. Third, our detailed register data allow for the analysis of individuals’ transitions into decent first employment. Thus, we can contribute to a classic strand of sociological research analyzing horizontal inequalities in transitions to labor markets.

Based on rich linked survey and register data, linear probability models, and an analysis of the effect of individual resources that are typically not observed in conjunction (i.e., mental and physical health, personality disorders, and work attitudes) on training-to-employment transition outcomes, this study advances our knowledge concerning the role of noncognitive and socioemotional factors at a crucial life course stage. In so doing, our study investigates the influences of health, personality disorders, and work values net of the effects of learning environments and schooling outcomes. Analyzing the additional effects of these factors is important because the literature has unambiguously demonstrated that within-school health selection processes contribute to poor schooling outcomes. Thus, if we were to find additional adverse net effects of poor health, personality disorders, and low work attitudes, our findings would suggest a double disadvantage for individuals who already face disadvantages during labor market entry as a result of their poor performance at school. Moreover, investigating the processes that lead to inequality during a crucial period in individuals’ lives is important because inequalities are likely to accumulate over an individual’s life course (e.g., DiPrete & Eirich, 2006), and even small differences at early ages could lead to greater inequality at later life course stages (e.g., Dannefer, 2003).

2. Empirical Findings on Labor Market Entry

2.1. Grades, Formal Degrees, and Labor Market Entry

Research on labor market entry cohorts has provided evidence for the theoretical predictions of human capital theory (e.g., Becker, 1964), credentialing theory (e.g., Collins, 1979), and signaling theory (e.g., Spence, 1973), emphasizing the pivotal roles of degree attainment and educational performance. For instance, Scherer's (2005) findings indicated that not attaining vocational education (i.e., school dropouts or graduates with lower-secondary degrees) in Germany is associated with long durations between dropping out or graduating and finding a substantial first job. In addition, Becker and Blossfeld (2021) found that the quality of entry positions (as measured by occupational prestige) decreases only for the low-educated (i.e., for individuals without vocational degrees) in Germany across labor market entry cohorts (1950 to 2010). The analysis of transitions to first jobs is important because the quality of entry positions is crucial to the development of stable labor market careers (Scherer, 2004).

In addition to the effects of degrees, labor market research has also indicated that school performance (i.e., grades) during postsecondary education influences individuals' transitions into the labor market, thereby providing empirical evidence for the importance of human capital formation. Hoeschler and Backes-Gellner (2018) show that an increased grade point average (GPA) improves the likelihood of an apprentice receiving a job offer by his or her training firm at the end of training. Pinguart et al. (2003) demonstrated that, in the German context, even school grades influence school-to-work transition outcomes, as good students exhibit the lowest rates of youth unemployment at the age of 21. In addition to job offers and employment opportunities, research has also suggested that an increased GPA leads to an increase in wages at labor market entry (Wydra-Somaggio & Seibert, 2010). This GPA effect even persists in models that take into account training firm size, educational degree, and training occupation.

2.2. Health and Labor Market Entry

Although there is a sophisticated body of research concerning the causal relationship between (un)employment and (mental) health (e.g., Krug & Eberl, 2018) in the tradition of Jahoda et al. (1932/1971), research pertaining to the impact of (mental) health on labor market entry remains scarce. To understand the potential impact of (mental) health for our study, which focuses on transitions from the education system, research about the selection mechanism of health appears to be most important. In contrast to the causation literature, which mainly focuses on individuals who have already made the education-to-work transition and which mainly investigates the causal effect of (un)employment on (mental)

health, work concerning selection mechanisms primarily focuses on within-school processes.

The prominent research on health selection within educational systems stresses that childhood health conditions causally influence educational attainment and health during adolescence and adulthood. Based on longitudinal data from the US, McLeod and Fettes (2007) were among the first to show that poor mental health during childhood and adolescence has a negative effect on schooling outcomes (i.e., high school completion and college entry). Interestingly, the authors also found that the effect of mental health is mediated by educational expectations net of school performance and disruptive behavior (e.g., suspension from school). Thus, mental health appears to involve alternating perceptions about the future, which turns out to be important for actual educational behavior. Furthermore, individuals who exhibit mental health problems during childhood appear to perform worse in school than do those who develop mental health problems during adolescence (McLeod & Fettes, 2007). McLeod et al. (2012) also show that mental health is important for GPA. Their analyses indicated that while depression has no direct effect on GPA, attention problems (e.g., attention-deficit/hyperactivity disorder) predict poor GPA. However, depression appears to have only a proxy effect on schooling outcomes, as depressive symptoms have a negative and statistically significant effect on school outcomes when other mental health domains and behavioral variables are not included in the modeling (McLeod et al., 2012).

Evensen's (2019) study adds to these findings from the US by showing that poor mental health is associated with poor school achievement. In her study, the author further showed that the effects of poor mental health differ by grade, as mental health effects appear to have the most impact at the lower end of the distribution. In addition, Evensen found that mental health problems more often occur among low-achieving school students, which corroborates the earlier work by Haas (2006), who emphasized that socioeconomic differences in early childhood health exist and accumulate over an individual's life course. This process of accumulation leads to poor schooling and poor health in adolescence. Thus, poor health and schooling interact, thereby strongly influencing status attainment within a society.

2.3. Personality Disorders, Work Commitment, and Labor Market Entry

Regarding labor market entry, a study in Germany (Pinguart et al., 2003) indicated that particularly high academic self-efficacy beliefs between the ages of 12 and 15 years reduce unemployment risk and increase job satisfaction at the age of 21. For Swiss apprentices, Hoeschler and Backes-Gellner (2018) found that grit (a concept that is strongly related to self-efficacy) and Big Five personality traits constitute very important predictors of receiving job offers at the end of training.

For the United Kingdom, Ng-Knight and Schoon (2017) provided an analysis of the risk of being classified as “not in employment, education or training” (NEET) from ages 16 to 20 and the relevance of an internal locus of control (i.e., individuals’ believe that they have control over the outcomes of certain life events). One main finding by those authors was that as individuals’ levels of internal locus of control increase, the risk of labor market exclusion between the ages of 16 and 20 decreases. While the literature review showed that previous work has already provided some insights into the influences of certain personality facets on school-to-work transition outcomes, research on coping abilities and cooperativeness (i.e., the constructs used in this study) has been scarce.

In contrast to the literature concerning personality traits, research focused on the role of work commitment in the school-to-work transition has been scant. However, a seminal study by Bielby and Bielby (1984) on female college graduates in the US indicated that as levels of work commitment increase, women exhibit greater attachment to the labor market than do men. According to this empirical finding, we also expect that high levels of commitment ease the transition into the labor market for apprentices in Germany. Moreover, it is noteworthy that the measure employed in our study deviates from the standard sociological construct. While most sociological research on work commitment has focused on women and used measures that approximate “the subjective relative importance of work over family as a source of well-being and satisfaction” (Gangl & Ziefle, 2015, p. 531), our study relies on a psychological measure that aims to identify the general attitudes of individuals toward work (Warr et al., 1979).

2.4. Expectations for Empirical Analysis

Since findings from the literature concerning health and schooling have identified increased dropout risks and low school performance for individuals with mental health problems, we might expect that decreasing health leads to poor school-to-work transition outcomes. However, since research has indicated that individuals’ health constitutes a driving force underlying degree attainment and school performance, it is not clear a priori whether health is an important predictor in training-to-employment transitions. Particularly in the context of our empirical study, two important selection barriers have already been overcome: first, health selection within the general school system, and second, health selection during the transition from general schooling into training. Thus, if selection and sorting according to health occur for schooling outcomes and learning environments, we would not find any association between health outcomes and labor market entry after considering GPA, degrees attained, and training firm characteristics (e.g., firm size or training firm wage levels). Therefore, in terms of the importance of health, an inter-

esting question that emerges pertains to whether health has a net effect on transitions to first jobs, i.e., whether health continues to predict transitions to first jobs after selection by schooling outcomes and training environments has been taken into account.

Regarding personality disorders and work commitment, our literature review revealed only scarce examples of research that scrutinizes the role played by these factors in school-to-work transitions. In general, however, we might expect similar impacts from personality disorders and work commitment in the context of school-to-work transitions, as suggested by the health and education literature. Again, the interesting question that emerges pertains to whether personality disorders and work commitment continue to have predictive power after taking important preselection processes into account.

In summary, our study provides novel insights into an important life course transition for a large proportion of German school leavers. In scrutinizing the roles of health, personality disorders, and work commitment, we advance our current knowledge concerning the noncognitive and socioemotional dimensions of disadvantage in the field of transition research. Moreover, by investigating the direct effects of health, personality disorders, and work commitment (net of schooling outcomes and selection by the learning environment), our study scrutinizes a potential double disadvantage in labor market entry for individuals who already face disadvantages in the school-to-work transition based on their poor schooling outcomes.

3. Methods

3.1. The Jugalo Study and Sample

The Jugalo Study (youth unemployment, mental health, and labor market outcomes) focuses on a representative sample of apprentices from the dual apprenticeship system. The sample population (individuals in sample frame $N = 19,975$) consists of apprentices included in the IEB data (Frodermann et al., 2021) from 2015 who are assumed to have been in their third (and typically final) year of training during the spring of 2016, i.e., at the time of the interview. The sample frame was drawn from the IEB, which comprises the full population of dependent workers in Germany, including apprentices. The register data included the postal addresses of the selected sample. Selected individuals were either invited to respond to a multicolor, printed pencil-and-paper (PAPI) questionnaire or were granted computer-assisted web interview (CAWI) access: 43.5% opted for the PAPI mode and 56.5% opted for the CAWI mode. The interviews occurred from January to May 2016. Selectivity analysis revealed typical but weak bias in the final sample, based on education, social origin, citizenship, and gender.

The baseline survey consists of measures of respondents’ health, personality disorders, and work

commitment. These measures (see Section 3.2) constitute the key explanatory variables used in this research. In addition, the survey contains information about critical life events, health-related behavior, social support, schooling outcomes, and sociodemographics. In the final sample ($N = 1,801$), 1,259 individuals consented to match baseline information to register-based social security data, i.e., the IEB data. This situation enables us to observe aspects of the learning environment and various outcomes of the school-to-work transition for 69.9% of the full sample.

To produce our final analytical sample, we stipulate two limitations. We employ only data from individuals who provided consent for the data linkage, and we analyze only full cases. Selectivity analysis reveals that consent for data linkage depends on the coping abilities of individuals, school degree, and performance. Thus, individuals with better coping abilities, a high school diploma, and better grades are slightly overrepresented. However, the selection model explains only 2.6% of the variation in consent propensity, which is rather low and suggests that the analytic sample is not highly selective for the main explanatory variables or other observables. Furthermore, school degree and performance are controlled for in the final specifications of our model, which reduces the likelihood of potential bias. Regarding the decent job model, we perform a data-driven selection: For technical reasons, the register data do not contain information regarding the mean wage level of some training firms, leading to the exclusion of a further 162 cases. The final sample includes information on job transitions of 1,061 individuals from the register data.

3.2. Measures

3.2.1. Dependent Variables

Concerning dependent variables, this study employs three outcome measures that stem from the register data. First, we analyze whether an apprentice found a first job within six months of completing VET. We choose a cutoff point of six months because, after this unemployment period, young individuals enter long-term unemployment (e.g., Council Recommendation of 22 April 2013, 2013; Kelly et al., 2012). Second, we determine whether an apprentice found a first job without employment interruption, i.e., directly after completing training. In so doing, we examine whether young individuals have a smooth school-to-work transition. Additionally, in the German case, this outcome can often suggest that apprentices are retained by their training firms—a circumstance for which many apprentices strive (e.g., in our sample, approximately 50% of apprentices were retained by their training firm).

Figure 1 shows that over 75% of the sample experienced a gapless school-to-work transition (e.g., retention after training or no search time). This finding reflects the fact that from 2015 to 2018, entries into youth unemployment in Germany were rare, and almost every apprenticeship graduate found employment. Third, we investigated whether apprentices access a decent first job. We define a decent first job as employment that lasts longer than 182 days (i.e., longer than the probation period) and pays a greater-than-average wage. Here, we do not merely use an indicator to determine

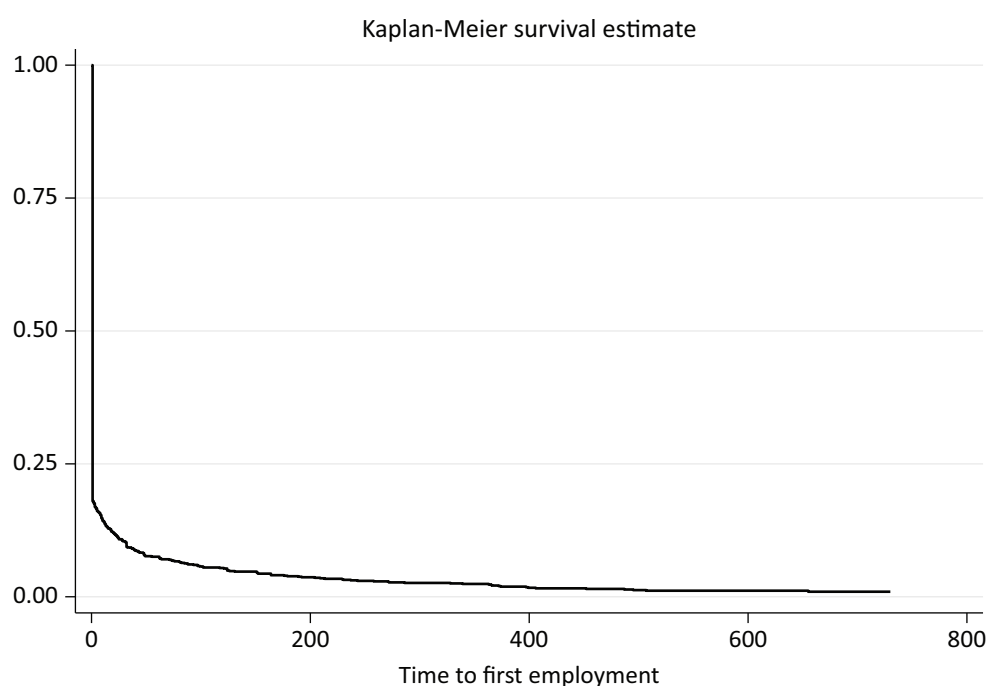


Figure 1. Time to first employment after completing training. Source: Own calculations based on the Jugalo Study (Dietrich, 2018).

whether individuals' wages are greater or less than the sample median. Instead, we investigate whether individuals from the same training occupations (roughly 300 in Germany) earn a greater-than-median wage in their current jobs. Comparing only within-training occupation medians has the advantage of accounting for the occupational structure of the German labor market. To identify what constitutes a greater-than-average wage, we rely on a full sample of all apprentices from the 2016 graduation cohort, which allows us to calculate the median wages of labor market entrants conditioned on their training occupation. We use the German classification of occupations, KLDB-1988, to retrieve median wages at a three-digit training occupation level. We merge this information with our analytic sample based on these codes.

3.2.2. Health

We employ indicators to approximate mental, physical, and overall *health*. To measure anxiety and depression risks, we employ the HSCL-10 scale, which constitutes a reduced form of the Hopkins symptom checklist (Derogatis et al., 1974). The ten items employed in our study demonstrate high internal validity, as indicated by a Cronbach's alpha of 0.856, and factor analysis indicates a one-factor solution (eigenvalue = 3.83). To measure overall health, we employ nine items from the well-established SF-12 scale, which constitutes a reduced form of the SF-36 (Radoschewski & Bellach, 1999). This measure also demonstrates high internal validity, as indicated by a Cronbach's alpha of 0.875 and a one-factor solution (eigenvalue = 4.00). We additionally employ the two subscales of the SF-12 that approximate the physical (pSF-12) and mental (mSF-12) health domains.

3.2.3. Personality Disorders

We employ a subscale (11 items) of the personality functioning scale developed by Parker et al. (2004), which measures two domains of *personality*. First, the scale includes a measure of cooperativeness. The scale approximates individuals' beliefs regarding problems in terms of their interactions with friends, colleagues, and strangers in general. Second, the Parker scale includes a measure of coping. This measure is highly related to other personality constructs, such as self-efficacy and internal locus of control. The internal validity of the constructs employed is only moderate. Cronbach's alpha for the cooperativeness subscale is 0.665, while that for the coping subscale is 0.630. Despite the low Cronbach's alpha values, factor analyses indicate a one-factor solution (the eigenvalues are 1.48 and 1.31 for the cooperativeness factor and the coping scale, respectively).

3.2.4. Work Commitment

We employ the Work Involvement Scale (Warr et al., 1979), which is based on six items. These items mea-

sure work commitment by asking individuals to evaluate statements concerning the importance of being employed, the mental burden of unemployment, and anxiousness during (potential) periods of unemployment. Furthermore, individuals rate items that ask whether working is the most important thing in life and whether they would work despite receiving high unemployment benefits or winning the lottery. Cronbach's alpha for the Warr scale in our data is 0.747, and factor analysis indicates a one-factor solution (eigenvalue = 1.90).

Since all internal validity measures indicate at least moderate internal consistency and factor analyses indicate one-factor solutions, we construct additive measures (i.e., sum scores). In the analyses, we use z-standardized measures, which have the advantage that their results are comparable across the different scales and models employed (Table A1 in the Supplementary File provides an overview of all dependent variables and all unstandardized distributions of explanatory variables).

3.2.5. Control Variables

Concerning control variables, we include two types of control variables in this study. First, we consider variables that structure individuals' integration into training. Second, we rely on a set of control variables that likely constitute preselection variables. As important structural variables, we consider gender, migration background as measured by a dummy variable indicating non-German citizenship, birth year, social origin (i.e., a dummy variable indicating whether an apprentice originates from a household receiving welfare benefits), and a dummy variable indicating apprentices located in East Germany. Research has provided evidence that all these variables are important for integration into training (e.g., Diehl et al., 2009; Dietrich et al., 2019; Hillmert et al., 2017; Kleinert & Jacob, 2013; Lindemann & Gangl, 2019; Seibert et al., 2009). Moreover, we include a dummy variable indicating whether the interview takes place via an online survey (the baseline is a paper-and-pencil survey).

Since our literature review revealed that health and personality influence educational performance and achievement (e.g., McLeod & Fettes, 2007; Piquart et al., 2003), we consider as preselection variables individuals' level of education, performance, and a dummy variable to indicate prior VET education. Moreover, research has indicated that educational performance and degree attainment within the upper-secondary educational system ease transitions into the labor market (e.g., Müller & Gangl, 2003). Furthermore, since health, personality, and work attitudes are also likely to influence transitions into certain training firms, we include firm size and median wage levels as preselection variables. These dimensions are important training environment characteristics because they influence the quality of first jobs (e.g., Dietrich et al., 2016).

3.3. Analytical Strategy

We analyze the impacts of health, personality disorders, and work commitment on all three outcomes individually. We employ linear probability models, in which we introduce the measures in question separately (refer to Tables A5 to A7 in the Supplementary File for the results of logistic regressions, which do not substantially differ from the results based on linear probability models). A final, full model always includes the significant coefficients of the partial models. We conduct this workaround twice for each outcome. We first present associations from models that adjust for structural variables (i.e., sociodemographics, region, and survey mode). Second, we present the net effect of the measures in question conditioned on important preselection variables. In further analyses, we also acknowledge the sequential nature of the second and third analysis steps (i.e., finding a first job without employment interruption and finding a decent first job). However, the results of the sequential logistic regression models do not substantially differ from those based on linear probability models. The results from this workaround are available upon request.

Additionally, we conduct a factor analysis to elaborate on the interdependence between the constructs used. This workaround revealed that the HSCL-10 and SF-12 approximate one latent construct of health. This finding has three implications. First, concerning our modeling, if we were to find statistically significant correlations of the HSCL-10 and SF-12 in the partial models, the full model should only include one of these two variables. Second, regarding our young population, the SF-12 construct appears to be dominated by mental health. Third, at young ages, mental health problems appear to be more prevalent than physical health issues.

We furthermore provide a correlation matrix for all independent variables in the Supplementary File (refer to Table A8). While the table mainly shows moderate correlations between the constructs employed, it indicates that the mental health dimension of the SF-12 construct strongly correlates (0.65) with the HSCL-10 measure. Thus, both measures approximate anxiety and depression risks. Moreover, this result suggests that we should not include both measures in one regression model.

4. Results

4.1. Finding a First Job Within Six Months

Table 1 shows the results of the linear regression models. While Panel A shows associations of health, personality disorders, and work involvement in finding a first job within six months from models conditional on structural variables (i.e., sociodemographics, region, and survey mode), Panel B displays the results from regressions that adjust for educational outcomes and the learning environment. Panel A shows that mental health, person-

ality traits, and work involvement are not associated with finding a first job within six months. The likelihood of finding a job increases only with increasing levels of physical health (see Model 3 of Table 1). Panel B indicates that this association holds when we condition our models on schooling outcomes and learning environment. Thus, individuals with poor physical health experience difficulties finding employment under very prosperous labor market conditions. Since the literature also indicates that individuals with health problems are likely to be low-performing school students, these results hint at a double disadvantage for low-achieving youth.

4.2. Finding a First Job Without Employment Interruption

Table 2 shows the results of the linear regression models. The associations depicted in Panel A indicate statistically significant correlations among the constructs in question. Only work commitment is not statistically significantly associated with gapless transitions to first jobs. The results indicate that as overall (mental or physical) health increases, the likelihood of transitions to first jobs without employment interruption also increases. Additionally, the associations presented indicate that as levels of cooperativeness and coping abilities increase, the likelihood of gapless transitions also increases. When we test for overall health and personality traits jointly, however, the model indicates that only overall health remains statistically significant, and the coefficient barely changes, indicating that overall health, rather than personality disorders, is an important factor in gapless transitions.

Panel B of Table 2 shows the regression results, taking into account educational outcomes and the learning environment. While the results indicate that the health measures are only weakly affected by the inclusion of these variables, associations among personality disorders become statistically nonsignificant. The full model suggests that there is almost no association between personality disorders and gapless transitions, while overall health is directly associated with gapless transitions to a first job. Again, this finding hints at a double disadvantage for low-achieving youth in the school-to-work transition.

4.3. Finding a Decent First Job

Table 3 shows the results of linear regression models that investigate the associations between health, personality disorders, work commitment, and the likelihood of finding a decent first job. Panel A depicts associations from models that account for sociodemographics, region, and mode effects and shows that physical health, overall health, and coping abilities are statistically significantly associated with the outcome. Panel A shows that as levels of physical or overall health increase, the likelihood of finding a decent first job also increases.

Table 1. Finding a first job within six months.

	(1)	(2)	(3)	(4)	(5)	(6)
Panel A						
Anxiety and depression	0.005 (0.006)					
Mental health		0.002 (0.006)				
Physical health			0.014** (0.006)			
Overall health				0.009 (0.006)		
Work Commitment Scale					0.003 (0.006)	
Coping ability						-0.002 (0.006)
Cooperativeness						-0.000 (0.007)
Adj.-R ²	0.006	0.006	0.011	0.008	0.006	0.005
F value	1.522	1.477	1.874	1.632	1.482	1.367
Panel B						
Anxiety and depression	0.006 (0.006)					
Mental health		0.002 (0.006)				
Physical health			0.012** (0.006)			
Overall health				0.008 (0.006)		
Work Commitment Scale					0.002 (0.006)	
Coping ability						-0.004 (0.007)
Cooperativeness						-0.001 (0.007)
N persons	1,061	1,061	1,061	1,061	1,061	1,061
Adj.-R ²	0.003	0.002	0.005	0.003	0.002	0.001
F value	1.123	1.081	1.243	1.144	1.083	1.050

Notes: Results from linear probability models; coefficients of z-standardized variables; standard errors in parentheses; constant not shown; significance levels: * $p < 0.10$, ** $p < 0.05$, and *** $p < 0.01$. The results from logistic and sequential logistic regression do not differ substantially (Table A5 in the Supplementary File shows results from logistic regressions; results from sequential logistic regressions are available upon request); full regression results appear in Table A2 of the Supplementary File. Panel A controls for sociodemographics (social origin, birth year, gender, migration background, and East Germany dummy variable) and mode effects. Panel B additionally controls for educational level, educational performance, second VET, and learning environment (training firm size and mean wage level training firm). Source: Jugalo Study (Dietrich, 2018).

Table 2. Finding a first job without employment interruption.

	(1)	(2)	(3)	(4)	(5)	(6)	Full
Panel A							
Anxiety and depression	-0.049*** (0.013)						
Mental health		0.057*** (0.012)					
Physical health			0.047*** (0.012)				
Overall health				0.063*** (0.012)			0.058*** (0.013)
Work Commitment Scale					0.018 (0.012)		
Coping ability						0.023* (0.013)	0.007 (0.014)
Cooperativeness						0.022* (0.013)	0.017 (0.013)
Adj.-R ²	0.042	0.048	0.042	0.052	0.030	0.035	0.053
F Value	4.593	5.088	4.563	5.513	3.523	3.786	4.950
Panel B							
Anxiety and depression	-0.047*** (0.013)						
Mental health		0.055*** (0.012)					
Physical health			0.041*** (0.012)				
Overall health				0.059*** (0.012)			0.056*** (0.013)
Work Commitment Scale					0.015 (0.012)		
Coping ability						0.016 (0.013)	0.001 (0.014)
Cooperativeness						0.020 (0.013)	0.015 (0.013)
N persons	1,061	1,061	1,061	1,061	1,061	1,061	1,061
Adj.-R ²	0.053	0.059	0.050	0.061	0.041	0.044	0.060
F value	3.452	3.749	3.326	3.863	2.902	2.963	3.621

Notes: Results from linear probability models; coefficients of z-standardized variables; standard errors in parentheses; constant not shown; significance levels: * $p < 0.10$, ** $p < 0.05$, and *** $p < 0.01$. The results from logistic and sequential logistic regression do not differ substantially (Table A6 in the Supplementary File shows results from logistic regressions; results from sequential logistic regressions are available upon request); full regression results appear in Table A3 of the Supplementary File. Panel A controls for sociodemographics (social origin, birth year, gender, migration background, and East Germany dummy variable) and mode effects. Panel B additionally controls for educational level, educational performance, second VET, and learning environment (training firm size and mean wage level training firm). Source: Jugalo Study (Dietrich, 2018).

Table 3. Finding a decent first job.

	(1)	(2)	(3)	(4)	(5)	(6)	Full
Panel A							
Anxiety and depression	-0.019 (0.014)						
Mental health		0.011 (0.014)					
Physical health			0.034** (0.014)				
Overall health				0.025* (0.014)			0.015 (0.015)
Work Commitment Scale					0.021 (0.014)		
Coping ability						0.037** (0.015)	0.034** (0.015)
Cooperativeness						0.005 (0.015)	
Adj.-R ²	0.024	0.023	0.028	0.026	0.025	0.029	0.030
F value	3.022	2.931	3.374	3.152	3.071	3.259	3.327
Panel B							
Anxiety and depression	-0.013 (0.014)						
Mental health		0.006 (0.014)					
Physical health			0.020 (0.014)				
Overall health				0.015 (0.014)			0.009 (0.014)
Work Commitment Scale					0.018 (0.014)		
Coping ability						0.022 (0.015)	0.020 (0.015)
Cooperativeness						0.002 (0.015)	
N persons	1,061	1,061	1,061	1,061	1,061	1,061	1,061
Adj.-R ²	0.064	0.064	0.066	0.065	0.065	0.065	0.066
F value	4.040	4.014	4.097	4.056	4.084	3.961	3.975

Notes: Results from linear probability models; coefficients of z-standardized variables; standard errors in parentheses; constant not shown; significance levels: * $p < 0.10$, ** $p < 0.05$, and *** $p < 0.01$. The results from logistic and sequential logistic regression do not differ substantially (Table A7 in the Supplementary File shows results from logistic regressions; results from sequential logistic regressions are available upon request); full regression results appear in Table A4 of the Supplementary File. Panel A controls for sociodemographics (social origin, birth year, gender, migration background, and East Germany dummy variable) and mode effects. Panel B additionally controls for educational level, educational performance, second VET, and learning environment (training firm size and mean wage level training firm). Source: Jugalo Study (Dietrich, 2018).

Regarding personality disorders, only coping abilities are positively related to finding a decent first job. When investigating the joint predictive power of overall health and coping abilities (Table 3, full model), the findings suggest that only coping abilities are statistically significantly associated with transitions to a decent first job. While

the coefficient of overall health is reduced by almost half, that of coping ability is only slightly affected.

Panel B of Table 3 shows the results of models considering educational outcomes and training firm characteristics. This part of Table 3 indicates that after additionally accounting for school performance, educational

degree, and training firm characteristics, the coefficients of all constructs are significantly reduced and are no longer statistically significant. Given the empirical evidence that good training firms (i.e., firms that invest in the human capital of their apprentices) lead to high wages after graduation (see, for instance, Dietrich et al., 2016), these findings strongly suggest that individuals with good overall health and high levels of coping ability exhibit good schooling outcomes and are selected into firms that provide a smooth transition into the labor market. Thus, since starting points in the labor market are crucial for career development (e.g., Scherer, 2004), selection based on health and coping abilities after individuals finish general schooling has the potential to introduce long-term inequality within labor markets.

5. Discussion and Conclusions

This study uses a novel dataset that combines both survey and register data to investigate how noncognitive and socioemotional factors relate to training-to-employment outcomes among graduates of apprenticeships. The study reveals the following main results.

First, while mental and overall health, personality disorders, and work commitment are not associated with finding a first job within six months, physical health does appear to be important for such transitions. Second, the overall health of individuals is positively correlated with finding a first job without employment interruptions even in models conditioned on preselection variables (i.e., schooling outcomes and training firm characteristics). Moreover, our results indicate that the association between personality traits and gapless transitions appears to be mediated by individuals' schooling outcomes and firm characteristics. For gapless training-to-employment transitions, work commitment appears to be unimportant. Third, while mental health, cooperativeness, and work commitment are not associated with transitions to decent first jobs, overall health and coping abilities appear to be important. However, models that include overall health and coping abilities suggest that only coping abilities demonstrate a statistically significant association in this context. Additionally, preselection variables mediate the association between coping abilities and transitions to a decent first job.

In sum, our findings provide hints regarding a double disadvantage for low-achieving youth (Jacob & Solga, 2015) in the German apprenticeship system. A potential double disadvantage occurs because of the independent effects of health and personality measures on training-to-employment transition outcomes even when we condition on preselection variables. If the disadvantage-generating process was solely the result of selection into training, we would not find any statistically significant associations at the time of labor market entry. However, since we continue to find independent effects, particularly in the cases of physical and overall health, in models that are conditioned on selection into educational

outcomes and training firms, these findings suggest a double disadvantage for individuals with health impairments. Thus, future work should investigate the interaction effects among schooling outcomes, firms, and noncognitive and socioemotional factors further. In general, our findings imply that since starting points in labor markets are crucial for career development (e.g., Scherer, 2004), selection based on noncognitive and socioemotional factors after individuals finish their general schooling has the potential to introduce long-term inequalities.

Overall, our results suggest that noncognitive and socioemotional constructs have the potential to shed new light on school-to-work transitions. Moreover, our findings indicate that job centers should acknowledge these factors. In addition, officers from job centers, policy makers, and other practitioners should become more aware of young people's mental health issues and provide needs-oriented guidance and counseling activities. Moreover, more findings from the research focused on noncognitive and socioemotional factors in training-to-work transitions should be acknowledged when designing new labor market schemes to support adolescents' integration into training and employment (Reissner et al., 2014).

A shortcoming of our study is that we cannot control for preselection in early childhood or during general schooling. Research has shown that both factors are highly important in explaining health selection (e.g., McLeod & Fettes, 2007). However, we continue to find associations even when controlling for school grades and educational degrees, which indicates that some of the constructs used by our study have additional explanatory power. Moreover, we consider only a short-term perspective. Future work should adopt a medium- and long-term perspective. Additionally, future work should incorporate individuals from school-based training and higher education to validate the study's main findings further.

Acknowledgments

We would like to thank Teresa Friedrich, the two anonymous reviewers, and the editors of this thematic issue for valuable feedback on earlier versions of this article. Furthermore, we thank participants of the Annual Conference of the Society for the Advancement of Socio-Economics (SASE), the Transition in Youth Conference, and the TREE conference for their valuable comments.

Conflict of Interests

The authors declare no conflict of interests.

Supplementary Material

Supplementary material for this article is available online in the format provided by the author (unedited).

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