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Improving Formal Qualifications or Firm Linkages- What Supports Successful School-to-Work Transitions among Low-Achieving School Leavers in Germany?

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**Improving formal qualifications or firm linkages -
what supports successful school-to-work transitions
among low-achieving school leavers in Germany?**

Anne Christine Holtmann, Martin Ehlert, Laura Menze, Heike Solga

Supplementary materials

Table S1: Results without including programme participants twice: Effect of prevocational programme participation on the probability to enter an apprenticeship position, by school-leaving certificate at time of leaving general schooling (t_0)

	M1 All	M2 No cert.	M3 Low. Sec.	M4 Ext. Low. Sec
Pre-voc.	0.204*** (0.0232)	0.398*** (0.0372)	0.153*** (0.0324)	0.0791 (0.0507)
Constant	0.291*** (0.0167)	0.0541** (0.0208)	0.341*** (0.0235)	0.473*** (0.0367)
<i>N individuals</i>	1,825	399	951	475

Standard errors in parentheses

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Table S2: Oster's method to estimate the possible influence of unobserved characteristics: Effect of prevocational programme participation on the probability to enter an apprenticeship position

	Reduced model	Full model	Proportionality (δ)
<i>Family Background</i>			
Prevocational programme participation	0.166*** (0.015)	0.167*** (0.015)	-3.263
R ²	0.159	0.164	
Rmax (=2.2*R ²)		0.368	
<i>Personality traits</i>			
Prevocational programme participation	0.114*** (0.019)	0.115*** (0.019)	-1.778
R ²	0.134	0.138	
Rmax (=2.2*R ²)		0.304	

Standard errors in parentheses. * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$
Source: NEPS SC4, SUF 9.0.0, own calculations

Table S3: Probability to enter an apprenticeship by level of municipal youth unemployment

	(1) All	(2) Low youth unemployment	(3) Medium youth unemployment	(4) High youth unemployment
Prevocational participation	0.178*** (0.016)	0.197*** (0.023)	0.174*** (0.031)	0.149*** (0.031)
Constant	0.314*** (0.009)	0.354*** (0.013)	0.299*** (0.016)	0.255*** (0.016)
<i>N individuals</i>	3347	1702	830	815
<i>N total</i>	4656	2328	1164	1164

Standard errors in parentheses
* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Table S4: Effect of prevocational programme participation on the probability to enter an apprenticeship position, by school-leaving certificate at time of leaving general schooling (t_0)

	M1 All	M2 No certificate	M3 Lower secondary certificate	M4 Extended lower secondary certificate
Panel A: only school leavers who applied for apprenticeships				
Prevocational participation	0.101*** (0.025)	0.378*** (0.072)	0.075* (0.033)	0.029 (0.046)
Constant	0.496*** (0.013)	0.226*** (0.035)	0.490*** (0.017)	0.641*** (0.020)
<i>N individuals</i>	1,900	159	1,014	727
<i>N total</i>	2,394	222	1,315	857
Panel B: additionally adjusted for age at t_1				
Prevocational participation	0.178*** (0.026)	0.281*** (0.043)	0.146*** (0.036)	0.133* (0.056)
Constant	0.314*** (0.022)	0.130*** (0.034)	0.360*** (0.030)	0.429*** (0.048)
<i>N individuals</i>	3,367	585	1,713	1,069
<i>N total</i>	4,683	931	2,402	1,350
Panel C: control group only apprenticeship dropouts¹				
Prevocational participation	0.086 (0.052)	sample size insufficient	0.140* (0.059)	-0.0476 (0.092)
Constant	0.436*** (0.049)		0.365*** (0.056)	0.610*** (0.087)
<i>N prevocational participants</i>	970		689	281
<i>N apprenticeship drop-outs</i>	149		101	48
<i>N total</i>	1,119		790	329
Panel D: without school leavers from special-needs schools				
Prevocational participation	0.121*** (0.019)	0.219** (0.066)	0.127*** (0.025)	0.0865* (0.035)
Constant	0.393*** (0.010)	0.098*** (0.027)	0.382*** (0.013)	0.482*** (0.017)
<i>N individuals</i>	2,607	119	1,463	1,025
<i>N total</i>	3,485	179	2,017	1,289
Panel E: without programme drop-outs				
Prevocational participation	0.216*** (0.017)	0.377*** (0.032)	0.185*** (0.024)	0.081* (0.037)
Constant	0.310*** (0.008)	0.093*** (0.012)	0.357*** (0.012)	0.480*** (0.017)
<i>N individuals</i>	3,367	585	1,713	1,069
<i>N total</i>	4,407	870	2,256	1,281

¹ Not balanced for age (at t_0), application behaviour, and plan to start an apprenticeship because of convergence problems, control group is very small; school leavers without certificates omitted because of low number of cases.

N total includes prevocational participants twice, except Panel C (see Analytical strategy, Section 5). Standard errors in parentheses; * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Source: NEPS SC4, SUF 9.0.0, own calculations

Table S5: Effect of prevocational programme participation with the possibility to upgrade the school-leaving certificate on the probability to enter an apprenticeship position, by school-leaving certificate at time of leaving general schooling (t_0)

	Certificate possible and attained				Certificate possible and not attained			
	M1 All	M2 No	M3 Low	M4 Ext	M5 All	M6 No	M7 Low	M8 Ext
Prevocational participation	0.188*** (0.030)	0.364*** (0.068)	0.174*** (0.041)	0.091 (0.060)	0.161*** (0.022)	0.353*** (0.039)	0.090** (0.031)	0.053 (0.046)
Constant	0.339*** (0.011)	0.110*** (0.017)	0.361*** (0.015)	0.460*** (0.022)	0.314*** (0.009)	0.104*** (0.014)	0.367*** (0.013)	0.493*** (0.018)
<i>N individuals</i>	3158	510	1,615	1,033	3158	510	1,615	1,033
<i>N total</i>	3463	567	1,785	1,111	3772	696	1,911	1,165

Abbreviations: No = no certificate; Low = lower secondary certificate, Ext = extended lower secondary certificate

N total includes prevocational participants twice (see Analytical strategy, Section 5). Standard errors in parentheses; * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Source: NEPS SC4, SUF 9.0.0, own calculations

Table S6: Effect of prevocational programme participation with the possibility to upgrade the school-leaving certificate on the ISEI of the training occupation, by school-leaving certificate at time of leaving general schooling (t_0)

	Certificate possible and attained				Certificate possible and not attained			
	M1 All	M2 No	M3 Low	M4 Ext	M5 All	M6 No	M7 Low	M8 Ext
Prevocational participation	5.467*** (1.160)	4.334 (3.165)	5.967*** (1.522)	5.217* (2.022)	0.776 (0.837)	-0.976 (1.968)	1.179 (0.849)	2.172 (1.580)
Constant	31.27*** (0.529)	28.39*** (2.069)	31.47*** (0.621)	32.76*** (0.513)	29.40*** (0.616)	27.07*** (1.872)	29.23*** (0.367)	32.66*** (0.488)
<i>N total</i>	1307	64	682	561	1435	119	731	585

Abbreviations: No = no certificate; Low = lower secondary certificate, Ext = extended lower secondary certificate

Standard errors in parentheses; * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Source: NEPS SC4, SUF 9.0.0, own calculations