

dos Santos, Sascha; Dieckhoff, Martina; Ehlert, Martin; Mertens, Antje

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Does training beget training over the life course? Cumulative advantage in work-related non-formal training participation in Germany and the UK

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Online supplement to

Does training beget training over the life course?

Cumulative advantage in work-related non-formal training participation in Germany and the UK.

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Table A1. Descriptive statistics

	DE		UK	
	Mean	SD	Mean	SD
Training Participation				
Job-related Non-formal Training Participation	0.33	0.47	0.29	0.45
Education				
High Education	0.52	0.52	0.52	0.50
Medium Education	0.46	0.46	0.30	0.46
Low Education	0.02	0.03	0.18	0.39
Gender				
Female	0.52	0.52	0.55	0.50
Age				
Age	45.79	7.01	42.34	8.08
Partnership status				
No Partner	0.24	0.43	0.23	0.42
Cohabiting	0.03	0.18	0.15	0.36
Married	0.73	0.44	0.62	0.48
Number of children in the household				
Number of children in hh (DE: under 18y / UK: under 16y)	0.78	0.96	0.83	1.01
ISCO-88				
Legislators and senior officials	0.00	0.04	0.00	0.06
Corporate managers	0.06	0.24	0.15	0.36
General managers	0.00	0.05	0.02	0.13
Physical, mathematical and engineering science professionals	0.09	0.29	0.04	0.21
Life science and health professionals	0.02	0.14	0.02	0.13
Teaching professionals	0.08	0.26	0.08	0.27
Other professionals	0.07	0.26	0.04	0.20
Physical and engineering science associate professionals	0.05	0.21	0.03	0.18
Life science and health associate professionals	0.07	0.25	0.06	0.23
Teaching associate professionals	0.00	0.03	0.01	0.08
Other associate professionals	0.12	0.33	0.08	0.27
Office clerks	0.13	0.34	0.10	0.30
Customer services clerks	0.03	0.18	0.03	0.18
Personal and protective services workers	0.04	0.19	0.13	0.34
Models, salespersons and demonstrators	0.04	0.20	0.04	0.19
Market-oriented skilled agricultural and fishery workers	0.01	0.07	0.00	0.05
Extraction and building trades workers	0.02	0.14	0.01	0.12
Metal, machinery and related trades workers	0.06	0.23	0.02	0.16
Precision, handicraft, printing and related trades workers	0.01	0.09	0.00	0.05
Other craft and related trades workers	0.01	0.11	0.00	0.06
Stationary-plant and related operators	0.01	0.08	0.01	0.08
Machine operators and assemblers	0.02	0.15	0.02	0.14
Drivers and mobile-plant operators	0.02	0.12	0.02	0.15
Sales and services elementary occupations	0.03	0.17	0.05	0.23
Agricultural, fishery and related labourers	0.00	0.03	0.00	0.03
Labourers in mining, construction, manufacturing and transport	0.01	0.11	0.02	0.15
Change of occupation				
Change of Occupation	0.04	0.19	0.08	0.28
Working hours				
Part-time Contract	0.35	0.48	0.30	0.46

Contract type				
Fixed-term Contract	0.04	0.19	0.03	0.18
Sector (DE: WZ 2008 / UK: SIC 2007)				
Agriculture, Forestry and Fishing	0.01	0.09	0.00	0.06
Mining and Quarrying	0.00	0.06	0.00	0.06
Manufacturing	0.25	0.43	0.10	0.30
Electricity, Gas, Steam and Air Conditioning Supply	0.01	0.11	0.01	0.09
Water Supply; Sewerage, Waste Management and Remediation Activities	0.01	0.08	0.01	0.08
Construction	0.05	0.21	0.03	0.18
Wholesale and Retail Trade; Repair of Motor Vehicles and Motorcycles	0.07	0.26	0.11	0.31
Transportation and Storage	0.01	0.11	0.04	0.20
Accommodation and Food Service Activities	0.03	0.18	0.03	0.17
Information and Communication	0.04	0.21	0.04	0.20
Financial and Insurance Activities	0.06	0.24	0.04	0.20
Real Estate Activities	0.01	0.07	0.01	0.10
Professional, Scientific and Technical Activities	0.04	0.21	0.06	0.23
Administrative and Support Service activities	0.04	0.20	0.04	0.19
Public Administration and Defence; Compulsory Social Security	0.11	0.31	0.10	0.29
Education	0.09	0.28	0.15	0.36
Human Health and Social Work Activities	0.13	0.34	0.20	0.40
Arts, Entertainment and Recreation	0.01	0.09	0.01	0.12
Other Service Activities	0.03	0.16	0.01	0.12
Activities of Households as Employers; etc.	0.00	0.05	0.00	0.03
Activities of Extraterritorial Organisations and Bodies	0.00	0.02	0.00	0.02
Company size				
Small (DE: max 19 employees / UK: max 24 employees)	0.24	0.43	0.26	0.44
Medium (DE: min 20, max 199 employees / UK min 25, max 199 employees)	0.38	0.48	0.37	0.48
Large (min. 200 employees)	0.38	0.49	0.36	0.48
Number of persons	5760		13748	
Number of person-years	30616		65333	

Source: NEPS SC6 SUF 13 . 0.0, Wave 2 – Wave 13 (2010 – 2021) / UKHLS, Wave 2 – Wave 12 (2010 – 2021), authors' calculations.

Note: Statistics shown are mean values for unweighted data

Table A2. Dynamic random effects probit models: Average marginal effects Germany

	Average marginal effects (Std. Err.)
Job-related Non-formal Training Participation (t-1)	0.08*** (0.01)
<i>Education (ref. Medium)</i>	
High Education	0.04*** (0.01)
Low Education	-0.01 (0.02)
<i>Gender (ref.: Male)</i>	
Female	0.04*** (0.01)
<i>Age</i>	
Age	-0.00 (0.00)
<i>Partnership Status (ref.: No Partner)</i>	
Cohabiting	0.06** (0.03)
Married	0.08*** (0.01)
<i>Number of children in the household</i>	
Children under the age of 18y in hh	-0.01 (0.01)
<i>ISCO-88</i>	
Legislators and senior officials	0.07 (0.07)
Corporate managers	0.05*** (0.02)
General managers	-0.07 (0.06)
Physical, mathematical and engineering science professionals	0.06*** (0.02)
Life science and health professionals	0.04 (0.03)
Teaching professionals	0.07*** (0.02)
Other professionals	0.03* (0.02)
Physical and engineering science associate professionals	0.05*** (0.02)
Life science and health associate professionals	0.06*** (0.02)
Teaching associate professionals	0.08 (0.17)
Other associate professionals	0.06***

	(0.02)
Customer services clerks	0.05* (0.03)
Personal and protective services workers	0.09*** (0.02)
Models, salespersons and demonstrators	0.03 (0.02)
Market-oriented skilled agricultural and fishery workers	-0.09* (0.05)
Extraction and building trades workers	-0.07** (0.03)
Metal, machinery and related trades workers	-0.01 (0.02)
Precision, handicraft, printing and related trades workers	-0.07* (0.04)
Other craft and related trades workers	-0.13*** (0.03)
Stationary-plant and related operators	-0.01 (0.04)
Machine operators and assemblers	0.01 (0.03)
Drivers and mobile-plant operators	0.10*** (0.03)
Sales and services elementary occupations	-0.11*** (0.02)
Agricultural, fishery and related labourers	-0.24*** (0.03)
Labourers in mining, construction, manufacturing and transport	-0.13*** (0.03)
<i>Change of Occupation (ref.: No Change)</i>	
Change	0.08*** (0.02)
<i>Working Hours (ref.: Full-time Contract)</i>	
Part-time Contract	-0.04*** (0.01)
<i>Contract Type (ref.: permanent contract)</i>	
Fixed-term Contract	0.01 (0.02)
<i>Sector (WZ 2008, ref.: Manufacturing)</i>	
Agriculture, Forestry and Fishing	0.07 (0.05)
Mining and Quarrying	0.09 (0.06)
Electricity, Gas, Steam and Air Conditioning Supply	0.03 (0.04)
Water Supply; Sewerage, Waste Management and Remediation Activities	0.19*** (0.05)
Construction	-0.02

	(0.02)
Wholesale and Retail Trade; Repair of Motor Vehicles and Motorcycles	-0.02 (0.02)
Transportation and Storage	-0.07** (0.03)
Accommodation and Food Service Activities	-0.02 (0.02)
Information and Communication	0.02 (0.02)
Financial and Insurance Activities	0.03 (0.02)
Real Estate Activities	0.08 (0.06)
Professional, Scientific and Technical Activities	0.06*** (0.02)
Administrative and Support Service activities	-0.00 (0.02)
Public Administration and Defence; Compulsory Social Security	0.08*** (0.02)
Education	0.11*** (0.02)
Human Health and Social Work Activities	0.07*** (0.02)
Arts, Entertainment and Recreation	0.00 (0.04)
Other Service Activities	0.09*** (0.03)
Activities of Households as Employers; etc.	-0.10 (0.09)
Activities of Extraterritorial Organisations and Bodies	-0.20*** (0.05)
<i>Firm size (ref.: max. 19 employees)</i>	
Min. 20 and max. 199 employees	0.03 (0.02)
Min. 200 employees	0.07*** (0.03)
Initial Conditions	
Job-related Non-formal Training Participation	0.18*** (0.01)
Cohabiting	0.04 (0.03)
Married	0.02 (0.02)
Number of children in hh	0.01 (0.01)
Occupational change	-0.01 (0.01)
Fixed-term Contract	0.02

	(0.02)
Part-time Work	0.04** (0.02)
Min. 20 and max. 199 employees	-0.01 (0.03)
Min. 200 employees	0.01 (0.03)
Individual Time-means	
Cohabiting	-0.14*** (0.05)
Married	-0.08*** (0.03)
Number of children	0.00 (0.01)
Occupational change	-0.07 (0.05)
Part-time contract	-0.03 (0.03)
Fixed-term contract	-0.09* (0.05)
Min. 20 and max. 199 employees	-0.00 (0.04)
Min. 200 employees	-0.05 (0.05)
Number of persons	5760
Number of person-years	30,616

Notes: Standard errors in parentheses. * p < 0.10, ** p < 0.05, *** p < 0.01. Original probit model includes age as a linear and a squared specification.

Source: NEPS SC6 SUF 13.0.0, Wave 2 – Wave 13 (2009/2010 – 2020/21), authors' calculations.

Table A3. Dynamic random effects Probit models: Average marginal effects United Kingdom

	Average marginal effects (Std. Err.)
Job-related Non-formal Training Participation (t-1)	0.13*** (0.01)
<i>Education (ref.: Medium)</i>	
High Education	0.04*** (0.01)
Low Education	-0.01 (0.01)
<i>Gender (ref.: Male)</i>	
Female	-0.00 (0.01)
<i>Age</i>	
Age	-0.00 (0.00)
<i>Partnership Status (ref.: No Partner)</i>	
Cohabiting	0.00 (0.01)
Married	-0.02 (0.01)
<i>Number of children in the household</i>	
Number of children under the age of 16y in hh	0.02*** (0.01)
<i>ISCO-88</i>	
Legislators and senior officials	0.05 (0.03)
Corporate managers	0.05*** (0.01)
General managers	0.02 (0.02)
Physical, mathematical and engineering science professionals	0.06*** (0.01)
Life science and health professionals	0.10*** (0.02)
Teaching professionals	0.06*** (0.01)
Other professionals	0.06*** (0.01)
Physical and engineering science associate professionals	0.07*** (0.01)
Life science and health associate professionals	0.13*** (0.01)
Teaching associate professionals	0.09*** (0.03)

Other associate professionals	0.04*** (0.01)
Customer services clerks	0.01 (0.01)
Personal and protective services workers	0.11*** (0.01)
Models, salespersons and demonstrators	-0.03** (0.01)
Market-oriented skilled agricultural and fishery workers	-0.00 (0.04)
Extraction and building trades workers	0.07*** (0.02)
Metal, machinery and related trades workers	0.09*** (0.02)
Precision, handicraft, printing and related trades workers	-0.01 (0.04)
Other craft and related trades workers	-0.07** (0.04)
Stationary-plant and related operators	0.03 (0.03)
Machine operators and assemblers	0.01 (0.02)
Drivers and mobile-plant operators	0.09*** (0.02)
Sales and services elementary occupations	0.00 (0.01)
Agricultural, fishery and related labourers	-0.09* (0.05)
Labourers in mining, construction, manufacturing and transport	0.04** (0.02)
<i>Change of Occupation (ref.: No Change)</i>	
Change	0.07*** (0.01)
<i>Working Hours (ref.: Full-time Contract)</i>	
Part-time Contract	-0.00 (0.01)
<i>Contract Type (ref.: permanent contract)</i>	
Fixed-term Contract	-0.02 (0.01)
<i>Sector (SIC 2007, ref.: Manufacturing)</i>	
Agriculture, Forestry and Fishing	0.02 (0.04)
Mining and Quarrying	0.13*** (0.04)
Electricity, Gas, Steam and Air Conditioning Supply	0.04 (0.03)
Water Supply; Sewerage, Waste Management and Remediation Activities	0.02 (0.02)

Construction	0.02 (0.01)
Wholesale and Retail Trade; Repair of Motor Vehicles and Motorcycles	-0.03*** (0.01)
Transportation and Storage	0.01 (0.01)
Accommodation and Food Service Activities	-0.07*** (0.01)
Information and Communication	-0.03** (0.01)
Financial and Insurance Activities	0.03** (0.01)
Real Estate Activities	0.06** (0.03)
Professional, Scientific and Technical Activities	0.01 (0.01)
Administrative and Support Service activities	0.01 (0.01)
Public Administration and Defence; Compulsory Social Security	0.06*** (0.01)
Education	0.06*** (0.01)
Human Health and Social Work Activities	0.10*** (0.01)
Arts, Entertainment and Recreation	-0.00 (0.02)
Other Service Activities	0.00 (0.02)
Activities of Households as Employers; etc.	-0.14** (0.06)
Activities of Extraterritorial Organisations and Bodies	0.04 (0.11)
<i>Firm size (ref.: max 24 employees)</i>	
Min. 25 and max. 199 employees	0.03 (0.02)
Min. 200 employees	0.07 (0.03)
Initial Conditions	
Job-related Non-formal Training Participation	0.13*** (0.01)
Cohabiting	-0.01 (0.01)
Married	0.01 (0.01)
Children under the age of 16y in hh	0.01** (0.01)
Occupational change	-0.04*** (0.01)

Fixed-term Contract	-0.00 (0.01)
Part-time Work	0.01 (0.01)
Min. 25 and max. 199 employees	-0.02 (0.01)
Min. 200 employees	-0.03** (0.01)
Individual Time-means	
Cohabiting	0.01 (0.02)
Married	0.03 (0.02)
Number of children	-0.03*** (0.01)
Occupational change	0.05** (0.02)
Fixed-term contract	-0.01 (0.03)
Part-time contract	-0.04*** (0.02)
Min. 25 and max. 199 employees	0.02 (0.02)
Min. 200 employees	0.03 (0.02)
Number of persons	13748
Number of person-years	65333

Notes: Standard errors in parentheses. * p < 0.10, ** p < 0.05, *** p < 0.01. Original probit model includes age as a linear and a squared specification.

Source: UKHLS Wave 2 – Wave 12 (2010 – 2021), authors' calculations.

Table A4. Dynamic random effects probit Models: Average marginal effects Germany: Educational levels

	Average marginal effects (Std. Err.)		
	High edu	Medium edu	Low edu
Job-related Non-formal Training Participation (t-1)	0.09*** (0.01)	0.07*** (0.01)	0.02 (0.04)
<i>Gender (ref.: Male)</i>			
Female	0.07 (0.01)	0.02 (0.01)	0.04 (0.06)
<i>Age</i>			
Age	-0.00* (0.00)	0.00 (0.00)	-0.00 (0.00)
<i>Partnership Status (ref.: No Partner)</i>			
Cohabiting	0.05 (0.03)	0.07* (0.04)	-0.22*** (0.02)
Married	0.08*** (0.02)	0.07*** (0.02)	0.12 (0.08)
<i>Number of children in the household</i>			
Number of children under the age of 18y in hh	-0.03*** (0.01)	0.01 (0.01)	-0.01 (0.04)
<i>ISCO-88</i>			
Legislators and senior officials	0.07 (0.11)	0.05 (0.08)	
Corporate managers	0.03*** (0.02)	0.08*** (0.03)	0.00 (0.12)
General managers	-0.01 (0.11)	0.10** (0.05)	
Physical, mathematical and engineering science professionals	0.06*** (0.02)	0.04 (0.03)	-0.02 (0.13)
Life science and health professionals	0.04 (0.04)	0.03 (0.09)	
Teaching professionals	0.06** (0.03)	0.06 (0.07)	
Other professionals	0.03 (0.02)	0.03 (0.03)	0.22*** (0.06)
Physical and engineering science associate professionals	0.07** (0.03)	0.03 (0.02)	-0.08 (0.12)
Life science and health associate professionals	0.04 (0.03)	0.06** (0.03)	0.14 (0.17)
Teaching associate professionals	0.48** (0.19)	-0.05 (0.04)	
Other associate professionals	0.03 (0.02)	0.07*** (0.02)	0.12 (0.09)
Customer services clerks	0.03 (0.04)	0.04 (0.03)	0.06 (0.11)
Personal and protective services workers	0.04	0.10***	0.11

	(0.04)	(0.03)	(0.09)
Models, salespersons and demonstrators	0.02 (0.06)	0.04* (0.03)	0.00 (0.10)
Market-oriented skilled agricultural and fishery workers	0.01 (0.16)	-0.06 (0.05)	-0.22***
Extraction and building trades workers	-0.07 (0.06)	-0.06* (0.03)	0.11 (0.14)
Metal, machinery and related trades workers	-0.01 (0.05)	-0.01 (0.02)	-0.16* (0.08)
Precision, handicraft, printing and related trades workers	-0.02 (0.07)	-0.07* (0.04)	-0.22*** (0.06)
Other craft and related trades workers	-0.19** (0.08)	0.11*** (0.03)	0.35 (0.22)
Stationary-plant and related operators	-0.02 (0.08)	-0.00 (0.05)	-0.11 (0.12)
Machine operators and assemblers	0.07 (0.04)	-0.03 (0.03)	0.02 (0.13)
Drivers and mobile-plant operators	0.21** (0.09)	0.07* (0.04)	0.12 (0.12)
Sales and services elementary occupations	-0.12** (0.05)	-0.09*** (0.02)	0.14** (0.06)
Agricultural, fishery and related labourers	-	0.20*** (0.02)	-0.22*** (0.06)
Labourers in mining, construction, manufacturing and transport	-0.15** (0.07)	0.11*** (0.03)	-0.10 (0.10)
<i>Change of Occupation (ref.: No Change)</i>			
Change	0.08*** (0.03)	0.09*** (0.02)	0.02 (0.07)
<i>Working Hours (ref.: Full-time Contract)</i>			
Part-time Contract	-0.03* (0.02)	0.05*** (0.02)	-0.08 (0.06)
<i>Contract Type (ref.: permanent contract)</i>			
Fixed-term Contract	-0.02 (0.03)	0.04 (0.03)	0.17 (0.11)
<i>Sector (SIC 2007, ref.: Manufacturing)</i>			
Agriculture, Forestry and Fishing	-0.01 (0.07)	0.09* (0.06)	0.26* (0.15)
Mining and Quarrying	0.08 (0.11)	0.08 (0.09)	0.26 (0.17)
Electricity, Gas, Steam and Air Conditioning Supply	0.00 (0.05)	0.05 (0.05)	-0.03 (0.14)
Water Supply; Sewerage, Waste Management and Remediation Activities	0.22** (0.10)	0.18*** (0.06)	0.27 (0.20)
Construction	-0.01 (0.04)	-0.03 (0.02)	0.14 (0.10)
Wholesale and Retail Trade; Repair of Motor Vehicles and Motorcycles	-0.07** (0.03)	0.01 (0.02)	-0.07 (0.07)
Transportation and Storage	-0.16***	-0.03	-0.03

	(0.06)	(0.04)	(0.09)
Accommodation and Food Service Activities	-0.02 (0.04)	-0.02 (0.03)	0.02 (0.09)
Information and Communication	-0.03 (0.03)	0.08** (0.03)	0.07 (0.12)
Financial and Insurance Activities	-0.00 (0.03)	0.07*** (0.03)	0.08 (0.15)
Real Estate Activities	0.10 (0.10)	0.06 (0.06)	0.32** (0.15)
Professional, Scientific and Technical Activities	-0.00 (0.03)	0.13*** (0.03)	-0.02 (0.08)
Administrative and Support Service activities	-0.02 (0.03)	0.01 (0.03)	0.01 (0.07)
Public Administration and Defence; Compulsory Social Security	0.08*** (0.02)	0.08*** (0.02)	0.06 (0.08)
Education	0.09*** (0.03)	0.14*** (0.04)	0.41 (0.17)
Human Health and Social Work Activities	0.03*** (0.02)	0.11*** (0.03)	0.05 (0.09)
Arts, Entertainment and Recreation	0.01 (0.06)	-0.01 (0.04)	-0.18*** (0.06)
Other Service Activities	0.10*** (0.03)	0.07* (0.04)	-0.00 (0.12)
Activities of Households as Employers; etc.	-0.35*** (0.01)	-0.07 (0.09)	0.38** (0.18)
Activities of Extraterritorial Organisations and Bodies		-0.14*** (0.04)	
<i>Firm size (ref: max. 19).</i>			
Min. 20 and max. 199 employees	0.05 (0.04)	-0.00 (0.03)	-0.09 (0.14)
Min. 200 employees	0.11*** (0.04)	0.02 (0.04)	0.01 (0.18)
Initial Conditions			
Job-related Non-formal Training Participation	0.18*** (0.01)	0.16*** (0.01)	0.10 (0.07)
Cohabiting	0.03 (0.04)	0.04 (0.04)	0.70*** (0.05)
Married	0.01 (0.03)	0.02 (0.03)	0.08 (0.09)
Children under the age of 16y in hh	0.02* (0.01)	0.00 (0.01)	0.02 (0.04)
Occupational change	-0.02 (0.02)	-0.01 (0.02)	-0.05 (0.07)
Fixed-term Contract	0.03 (0.03)	0.01 (0.04)	0.10 (0.12)
Part-time Work	0.04* (0.02)	0.03 (0.02)	0.05 (0.09)
Min. 20 and max. 199 employees	-0.05	0.04	-0.15

	(0.03)	(0.04)	(0.17)
Min. 200 employees	-0.05 (0.04)	0.07 (0.04)	-0.10 (0.26)
Individual Time-means			
Cohabiting	-0.12* (0.07)	0.14** (0.07)	-1.73*** (0.64)
Married	-0.06* (0.04)	0.09** (0.04)	-0.24 (0.16)
Number of children	0.01 (0.02)	0.01 (0.02)	-0.02 (0.06)
Occupational change	-0.08 (0.07)	0.09 (0.06)	0.08 (0.24)
Fixed-term contract	-0.05 (0.06)	0.08 (0.07)	-0.50** (0.25)
Part-time contract	-0.04 (0.04)	0.02 (0.04)	-0.01 (0.12)
Min. 20 and max. 199 employees	0.00 (0.05)	-0.01 (0.05)	0.35 (0.28)
Min. 200 employees	-0.05 (0.07)	-0.05 (0.06)	0.16 (0.37)
Number of persons	2907	2664	189
Number of person-years	15768	14019	829

Notes: Standard errors in parentheses. * p < 0.10, ** p < 0.05, *** p < 0.01. Original probit models include age as a linear and a squared specification.

Source: NEPS SC6 SUF 13.0.0, Wave 2 – Wave 13 (2009/2010 – 2020/21), authors' calculations.

**Table A5. Dynamic random effects probit models: Average marginal effects UK:
Educational levels**

	Average marginal effects (Std. Err.)		
	High edu	Medium edu	Low edu
Job-related Non-formal Training Participation (t-1)	0.13*** (0.01)	0.12*** (0.01)	0.12*** (0.01)
<i>Gender (ref.: Male)</i>			
Female	0.01 (0.01)	-0.00 (0.01)	-0.03* (0.01)
<i>Age</i>			
Age	-0.00 (0.00)	0.00 (0.00)	-0.00 (0.00)
<i>Partnership Status (ref.: No Partner)</i>			
Cohabiting	-0.00 (0.02)	-0.01 (0.02)	0.05 (0.03)
Married	-0.02 (0.02)	-0.04* (0.02)	-0.03 (0.03)
<i>Number of children in the household</i>			
Number of children under the age of 18y in hh	0.02*** (0.01)	0.01 (0.01)	0.01 (0.01)
<i>ISCO-88</i>			
Legislators and senior officials	0.06 (0.04)	0.05 (0.06)	-0.08 (0.07)
Corporate managers	0.05*** (0.01)	0.06*** (0.01)	0.03 (0.02)
General managers	-0.01 (0.03)	0.05** (0.03)	-0.01 (0.04)
Physical, mathematical and engineering science professionals	0.06*** (0.02)	0.10*** (0.02)	-0.02 (0.03)
Life science and health professionals	0.12*** (0.02)	-0.12*** (0.02)	0.12 (0.12)
Teaching professionals	0.07*** (0.02)	0.03 (0.03)	-0.01 (0.04)
Other professionals	0.06*** (0.02)	0.06** (0.03)	0.07* (0.04)
Physical and engineering science associate professionals	0.08*** (0.02)	0.04* (0.02)	0.04 (0.04)
Life science and health associate professionals	0.14*** (0.02)	0.12*** (0.04)	0.06* (0.04)
Teaching associate professionals	0.09** (0.04)	0.11*** (0.04)	0.03 (0.07)
Other associate professionals	0.03** (0.01)	0.06*** (0.02)	0.02 (0.03)
Customer services clerks	0.01 (0.02)	0.02 (0.02)	-0.00 (0.03)
Personal and protective services workers	0.09***	0.11***	0.09***

	(0.02)	(0.01)	(0.02)
Models, salespersons and demonstrators	-0.04 (0.03)	0.00 (0.02)	-0.03 (0.03)
Market-oriented skilled agricultural and fishery workers	-0.01 (0.09)	0.07 (0.06)	-0.08* (0.05)
Extraction and building trades workers	0.06 (0.04)	0.07*** (0.03)	0.03 (0.03)
Metal, machinery and related trades workers	0.06* (0.03)	0.13*** (0.03)	0.05* (0.03)
Precision, handicraft, printing and related trades workers	0.09 (0.10)	0.01 (0.07)	-0.09** (0.04)
Other craft and related trades workers	-0.21*** (0.04)	0.01 (0.06)	-0.07 (0.05)
Stationary-plant and related operators	-0.05 (0.07)	0.07* (0.04)	0.01 (0.04)
Machine operators and assemblers	0.02 (0.04)	0.02 (0.02)	-0.00 (0.03)
Drivers and mobile-plant operators	0.03 (0.04)	0.11*** (0.02)	0.05 (0.03)
Sales and services elementary occupations	-0.00 (0.02)	0.00 (0.01)	0.00 (0.02)
Agricultural, fishery and related labourers	0.03 (0.21)	-0.08* (0.04)	-0.11 (0.10)
Labourers in mining, construction, manufacturing and transport	0.09** (0.04)	0.06*** (0.02)	-0.02 (0.03)
<i>Change of Occupation (ref.: No Change)</i>			
Change	0.07*** (0.01)	0.06*** (0.01)	0.05*** (0.02)
<i>Working Hours (ref.: Full-time Contract)</i>			
Part-time Contract	-0.01 (0.01)	-0.00 (0.02)	0.03 (0.02)
<i>Contract Type (ref.: permanent contract)</i>			
Fixed-term Contract	-0.04** (0.02)	-0.01 (0.03)	0.01 (0.03)
<i>Sector (SIC 2007, ref.: Manufacturing)</i>			
Agriculture, Forestry and Fishing	0.02 (0.07)	0.10 (0.07)	-0.07 (0.05)
Mining and Quarrying	0.06 (0.05)	0.22*** (0.08)	0.19** (0.08)
Electricity, Gas, Steam and Air Conditioning Supply	-0.00 (0.04)	0.03 (0.04)	0.16** (0.07)
Water Supply; Sewerage, Waste Management and Remediation Activities	-0.05 (0.04)	0.06 (0.04)	0.06 (0.05)
Construction	-0.00 (0.02)	0.02 (0.02)	0.05* (0.02)
Wholesale and Retail Trade; Repair of Motor Vehicles and Motorcycles	-0.03* (0.02)	-0.02* (0.01)	-0.01 (0.02)
Transportation and Storage	-0.02	0.02	0.04

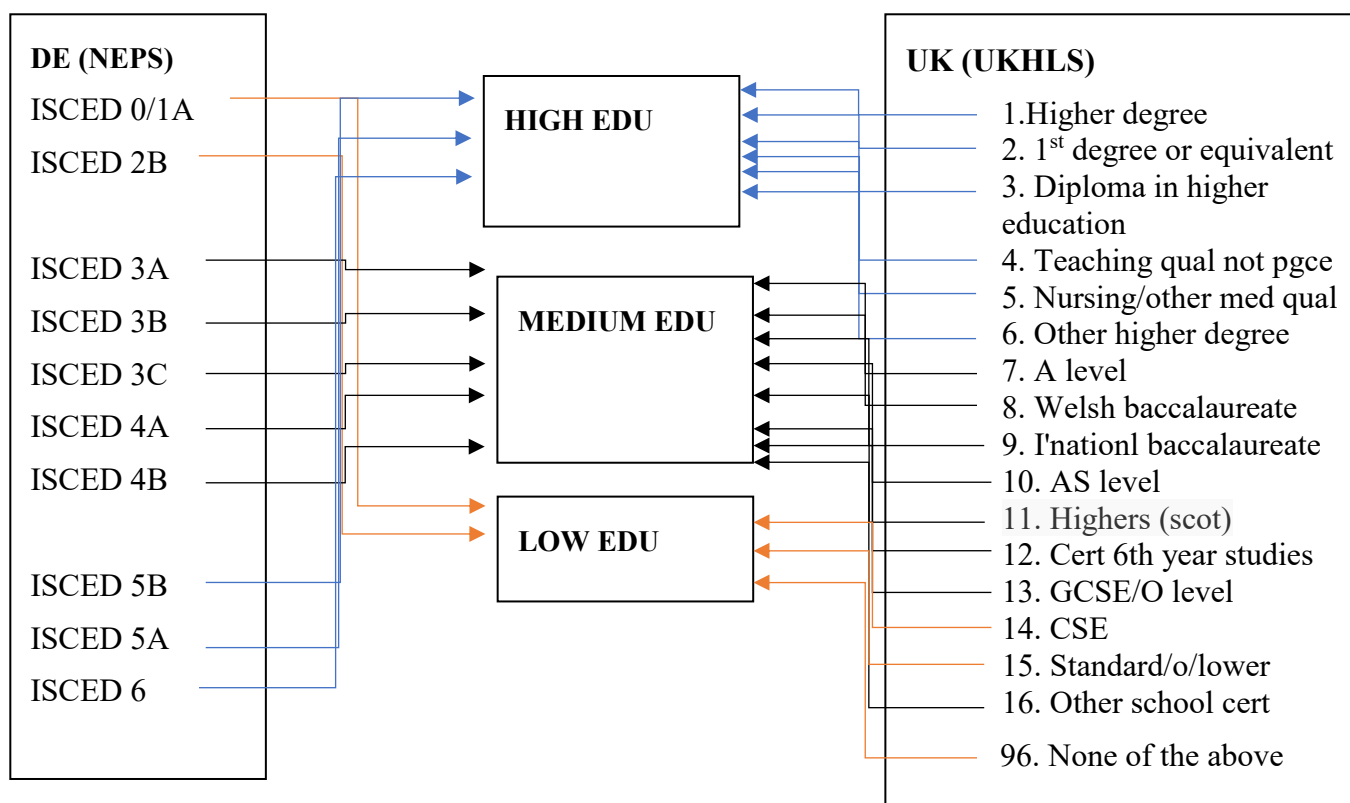
	(0.02)	(0.02)	(0.03)
Accommodation and Food Service Activities	-0.07** (0.03)	-0.05*** (0.02)	-0.04* (0.02)
Information and Communication	-0.05*** (0.02)	-0.03 (0.02)	0.00 (0.04)
Financial and Insurance Activities	0.01 (0.02)	0.02 (0.02)	0.09** (0.04)
Real Estate Activities	-0.01 (0.03)	0.10** (0.04)	0.13* (0.07)
Professional, Scientific and Technical Activities	-0.02 (0.02)	0.03 (0.02)	0.12*** (0.05)
Administrative and Support Service activities	0.01 (0.02)	0.00 (0.02)	0.05* (0.03)
Public Administration and Defence; Compulsory Social Security	0.03 (0.02)	0.09*** (0.02)	0.07*** (0.03)
Education	0.02 (0.02)	0.09*** (0.02)	0.09*** (0.03)
Human Health and Social Work Activities	0.05*** (0.02)	0.11*** (0.02)	0.15*** (0.02)
Arts, Entertainment and Recreation	-0.00 (0.03)	-0.01 (0.02)	0.02 (0.04)
Other Service Activities	-0.04 (0.03)	0.01 (0.03)	0.08* (0.04)
Activities of Households as Employers; etc.	-0.30*** (0.01)	-0.03 (0.16)	-0.11*** (0.04)
Activities of Extraterritorial Organisations and Bodies	0.04 (0.14)	0.04 (0.17)	-0.18*** (0.02)
<i>Firm size (ref: max. 24).</i>			
Min. 25 and max. 199 employees	0.01 (0.02)	0.02 (0.02)	-0.02 (0.02)
Min. 200 employees	-0.01 (0.02)	0.03 (0.02)	0.03 (0.03)
Initial Conditions			
Job-related Non-formal Training Participation	0.14*** (0.01)	0.11*** (0.01)	0.12*** (0.01)
Cohabiting	-0.00 (0.02)	-0.00 (0.02)	-0.01 (0.03)
Married	-0.01 (0.02)	0.02 (0.02)	0.04 (0.03)
Children under the age of 16y in hh	0.02 (0.01)	-0.00 (0.01)	0.01 (0.01)
Occupational change	-0.03* (0.02)	-0.03 (0.02)	-0.05 (0.04)
Fixed-term Contract	-0.01 (0.02)	-0.01 (0.02)	0.04 (0.03)
Part-time Work	-0.00 (0.01)	0.03* (0.02)	-0.01 (0.02)
Min. 25 and max. 199 employees	-0.00	-0.01	-0.06***

	(0.02)	(0.02)	(0.02)
Min. 200 employees	-0.03 (0.02)	-0.01 (0.02)	-0.05* (0.03)
Individual Time-means			
Cohabiting	0.02 (0.03)	0.02 (0.03)	-0.03 (0.05)
Married	0.03 (0.03)	0.02 (0.03)	0.00 (0.05)
Number of children	-0.04*** (0.01)	-0.01 (0.01)	-0.02 (0.02)
Occupational change	0.01 (0.03)	0.09*** (0.03)	0.06 (0.05)
Fixed-term contract	0.02 (0.04)	-0.04 (0.05)	-0.12* (0.07)
Part-time contract	-0.01 (0.02)	-0.08*** (0.03)	-0.08** (0.03)
Min. 25 and max. 199 employees	0.00 (0.03)	0.01 (0.03)	0.11*** (0.04)
Min. 200 employees	0.05 (0.03)	0.00 (0.04)	0.03 (0.05)
Number of persons	6,893	4,197	2,658
Number of person-years	33,677	19,664	11,992

Notes: Standard errors in parentheses. * p < 0.10, ** p < 0.05, *** p < 0.01. Original probit models include age as a linear and a squared specification.

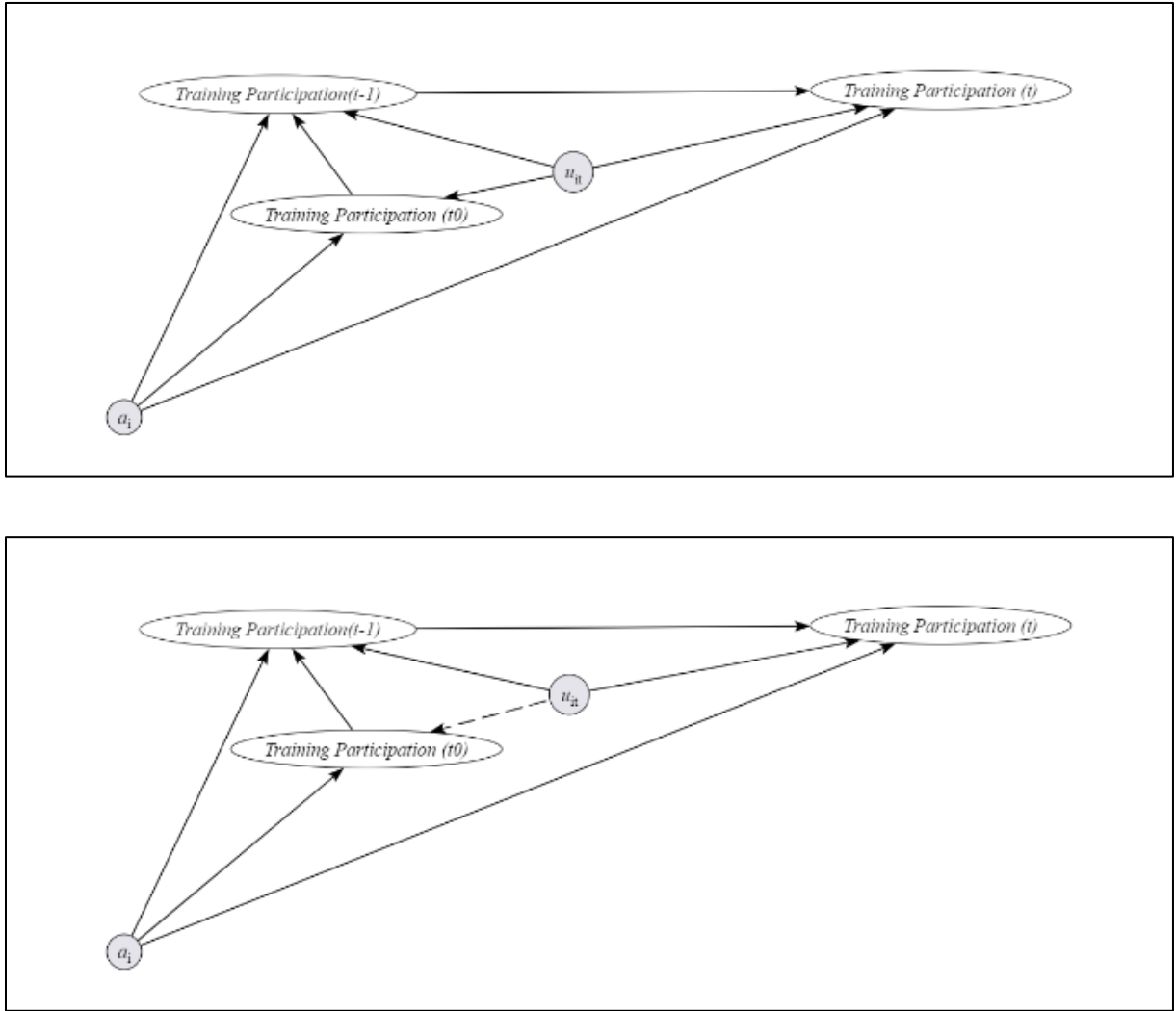
Source: UKHLS Wave 2 – Wave 12 (2010 – 2021), authors' calculations.

Figure A1. Coding of the Educational Groups



Coding of educational groups is based on Turek (2020).

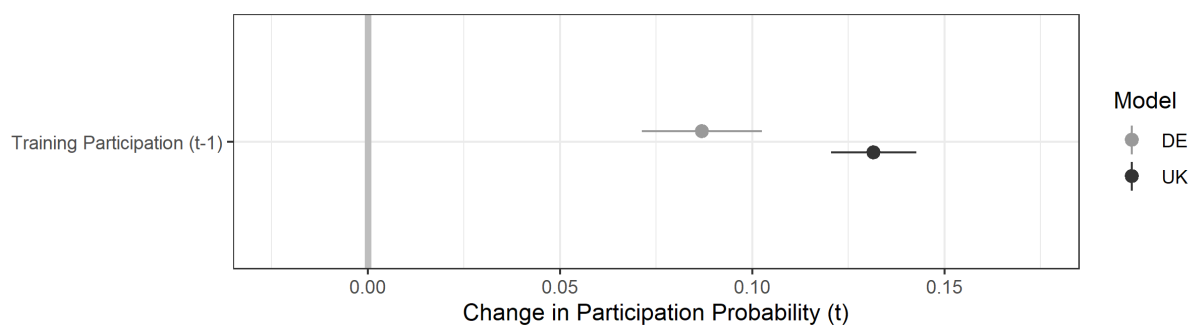
Figure A2. DAG initial condition



While controlling for the initial training condition is essential for taking unobserved heterogeneity into account, it can also be problematic. The previously mentioned benefits come at the cost of potentially causing an endogenous selection bias like most lagged dependent variable models (Morgan and Winship, 2015: 111). Figure A2 is an attempt to illustrate why the initial condition might be a collider if both our exogeneity assumptions do not hold and there is residual confounding via a_i and u_{it} . Both error terms might be parents of the initial training condition, thereby opening the following backdoor path: $\text{train (t-1)} \leftarrow a_i \rightarrow \text{train(t0)} \leftarrow u_{it} \rightarrow \text{train(t)}$ (see upper part of Figure A2). While the association between a_i and training participation should be constant over time, we assume that the relationship between u_{it} and train (t0) is stronger the closer the measurement time point of u_{it} is to t_0 . Thus, we

expected that the endogenous selection bias shown above would weaken the longer individuals are observed in our analysis sample (see lower part of Figure A2).

Figure A3. Robustness Check 1: NEPS training variable based on logical imputation



The data collection procedures employed in the NEPS and UKHLS differ slightly. The UKHLS collects information on up to three training spells between interviews, while the NEPS asks respondents about training course participation since the last interview, with detailed data obtained for two randomly selected courses. Grüttgen et al. (2023) have developed a logical imputation approach that allows for the analysis of all courses occurring between two waves. We employ this measure to examine whether the observed differences between countries in our main analysis are attributable to variations in data collection procedures.

Using the non-formal job-related training variable based on logical imputation does not alter the results of our analysis in Germany. In our main analysis, we find that previous training participation increases the likelihood of subsequent training participation by 8 percentage points. In our robustness check, the effect becomes slightly stronger, at 9 percentage points. Therefore, our results appear to be robust.

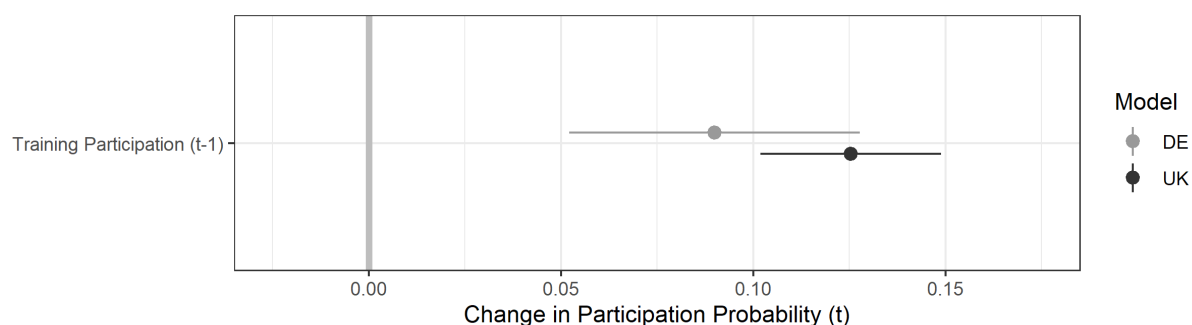
Table A6. Robustness Check 1: Training variable based on logical imputation (DE)

	Average marginal effects (Std. Err.)
Job-related Non-formal Training Participation (t-1)	0.09*** (0.01)
<i>Education (ref. Medium)</i>	
High Education	0.05*** (0.01)
Low Education	-0.02 (0.02)
<i>Gender (ref.: Male)</i>	
Female	0.05*** (0.01)
<i>Age</i>	
Age	0.00 (0.00)
<i>Partnership Status (ref.: No Partner)</i>	
Cohabiting	0.08*** (0.03)
Married	0.08*** (0.01)
<i>Number of children in the household</i>	
Children under the age of 18y in hh	-0.01 (0.01)
<i>ISCO-88</i>	YES
<i>Change of Occupation (ref.: No Change)</i>	
Change	0.09*** (0.02)
<i>Working Hours (ref.: Full-time Contract)</i>	
Part-time Contract	-0.03** (0.01)
<i>Contract Type (ref.: permanent contract)</i>	
Fixed-term Contract	0.01 (0.02)
<i>Firmsize (ref.: max. 19 employees)</i>	
Min. 20 and max. 199 employees	0.04*

	(0.02)
Min. 200 employees	0.09***
	(0.03)
Initial Conditions	
Job-related Non-formal Training Participation	0.16***
	(0.01)
Cohabiting	0.03
	(0.03)
Married	0.01
	(0.02)
Number of children in hh	0.02*
	(0.01)
Occupational change	0.01
	(0.01)
Fixed-term Contract	0.03
	(0.02)
Part-time Work	0.04**
	(0.02)
Min. 20 and max. 199 employees	0.00
	(0.02)
Min. 200 employees	0.00
	(0.03)
Individual Time-means	
Cohabiting	-0.13**
	(0.05)
Married	-0.07***
	(0.03)
Number of children	-0.01
	(0.01)
Occupational change	-0.02
	(0.05)
Part-time contract	-0.05*
	(0.03)
Fixed-term contract	-0.06
	(0.04)
Min. 20 and max. 199 employees	-0.03
	(0.04)
Min. 200 employees	-0.06
	(0.05)

Number of persons	5,760
Number of person-years	30,616

Figure A4. Robustness Check 2: Sectors with high share of highly educated workers



In our main analysis, we focused on estimating the mean effect for each country. However, we recognize that there may be significant heterogeneity within each country, particularly across different sectors. We assumed that country differences would be smaller in sectors with a high proportion of highly educated workers, while they would be more pronounced in sectors with a very low proportion of highly educated workers because sectors that require higher education have demonstrated convergence within the European higher education area.

To further investigate this, we specifically examined sectors that had a share of over 50 percent of highly educated workers in both countries. These sectors included "Information and Communication", "Professional, Scientific and Technical Activities" and "Education". Importantly, when analyzing these sectors, we found that the coefficients did not change substantially compared to our main analysis. This suggests that the observed effects of training participation remained consistent even when considering sectors with a high proportion of highly educated workers in both Germany and the UK.

Table A7. Robustness Check 2: Sectors with high share of highly educated workers (DE)

	Average marginal effects (Std. Err.)
Job-related Non-formal Training Participation (t-1)	0.09*** (0.02)
<i>Education (ref. Medium)</i>	
High Education	0.02 (0.03)
Low Education	0.02 (0.12)
<i>Gender (ref.: Male)</i>	
Female	0.06** (0.02)
<i>Age</i>	
Age	0.00 (0.00)
<i>Partnership Status (ref.: No Partner)</i>	
Cohabiting	0.02 (0.06)
Married	0.04 (0.03)
<i>Number of children in the household</i>	
Children under the age of 18y in hh	-0.03 (0.02)
<i>ISCO-88</i>	YES
<i>Change of Occupation (ref.: No Change)</i>	
Change	0.09* (0.05)
<i>Working Hours (ref.: Full-time Contract)</i>	
Part-time Contract	-0.02 (0.03)
<i>Contract Type (ref.: permanent contract)</i>	
Fixed-term Contract	-0.05 (0.05)
<i>Firmsize (ref.: max. 19 employees)</i>	
Min. 20 and max. 199 employees	-0.11

	(0.08)
Min. 200 employees	-0.10
	(0.12)
Initial Conditions	
Job-related Non-formal Training Participation	0.21***
	(0.02)
Cohabiting	-0.03
	(0.06)
Married	-0.01
	(0.05)
Number of children in hh	0.03
	(0.02)
Occupational change	-0.03
	(0.04)
Fixed-term Contract	0.03
	(0.05)
Part-time Work	0.04
	(0.04)
Min. 20 and max. 199 employees	0.06
	(0.11)
Min. 200 employees	0.06
	(0.13)
Individual Time-means	
Cohabiting	-0.09
	(0.11)
Married	-0.02
	(0.06)
Number of children	0.01
	(0.03)
Occupational change	0.02
	(0.14)
Part-time contract	-0.04
	(0.06)
Fixed-term contract	-0.01
	(0.10)
Min. 20 and max. 199 employees	0.03
	(0.14)
Min. 200 employees	0.00
	(0.19)

Number of persons	1,044
Number of person-years	5,234

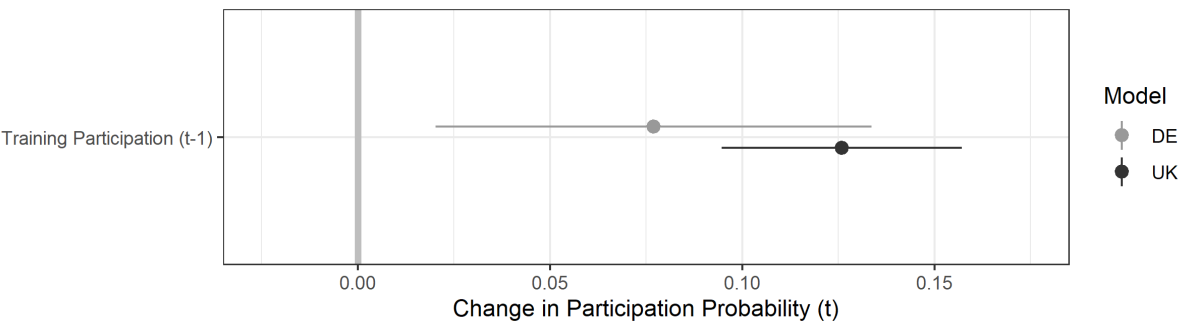
Table A8. Robustness Check 2: Sectors with high share of highly educated workers (UK)

	Average marginal effects (Std. Err.)
Job-related Non-formal Training Participation (t-1)	0.12*** (0.01)
<i>Education (ref. Medium)</i>	
High Education	0.04*** (0.01)
Low Education	-0.01 (0.02)
<i>Gender (ref.: Male)</i>	
Female	0.04*** (0.01)
<i>Age</i>	
Age	0.00 (0.00)
<i>Partnership Status (ref.: No Partner)</i>	
Cohabiting	0.00 (0.03)
Married	-0.02 (0.03)
<i>Number of children in the household</i>	
Children under the age of 16y in hh	0.03** (0.01)
<i>ISCO-88</i>	YES
<i>Change of Occupation (ref.: No Change)</i>	
Change	0.06*** (0.02)
<i>Working Hours (ref.: Full-time Contract)</i>	
Part-time Contract	-0.01 (0.02)
<i>Contract Type (ref.: permanent contract)</i>	
Fixed-term Contract	-0.03 (0.03)
<i>Firmsize (ref.: max. 24 employees)</i>	
Min. 25 and max. 199 employees	0.01

	(0.03)
Min. 200 employees	0.00
	(0.03)
Initial Conditions	
Job-related Non-formal Training Participation	0.16***
	(0.01)
Cohabiting	-0.01
	(0.03)
Married	0.00
	(0.03)
Number of children in hh	0.02
	(0.01)
Occupational change	-0.10***
	(0.04)
Fixed-term Contract	-0.02
	(0.02)
Part-time Work	0.02
	(0.02)
Min. 25 and max. 199 employees	0.00
	(0.03)
Min. 200 employees	-0.03
	(0.03)
Individual Time-means	
Cohabiting	0.04
	(0.05)
Married	0.06
	(0.05)
Number of children	-0.04**
	(0.02)
Occupational change	0.00
	(0.06)
Part-time contract	-0.05
	(0.03)
Fixed-term contract	-0.01
	(0.05)
Min. 25 and max. 199 employees	0.01
	(0.04)
Min. 200 employees	0.04
	(0.05)

Number of persons	3,362
Number of person-years	15,584

Figure A5. Robustness Check 3: Sectors with low share of highly educated workers



To further explore the potential heterogeneity across sectors, we also examined sectors with a share of less than 30 percent highly educated workers in both Germany and the UK. These sectors included "Water Supply; Sewerage, Waste Management and Remediation Activities", "Wholesale and Retail Trade; Repair of Motor Vehicles and Motorcycles", and "Transportation and Storage". Upon analyzing these sectors, we found that the coefficients remained relatively stable and did not show substantial changes compared to our main analysis. This suggests that the relationship between training participation and its impact on subsequent participation was consistent even in sectors with a lower proportion of highly educated workers in both countries.

By examining sectors with different proportions of highly educated workers, we aimed to capture potential variations in the effects of training participation across different occupational contexts. Our findings indicate that the observed patterns of training accumulation and its influence on future participation were robust across sectors with both high and low proportions of highly educated workers in Germany and the UK.

Table A9. Robustness Check 3: Sectors with low share of highly educated workers (DE)

	Average marginal effects (Std. Err.)
Job-related Non-formal Training Participation (t-1)	0.08*** (0.03)
<i>Education (ref. Medium)</i>	
High Education	-0.06** (0.03)
Low Education	-0.08 (0.05)
<i>Gender (ref.: Male)</i>	
Female	0.02 (0.03)
<i>Age</i>	
Age	0.00 (0.00)
<i>Partnership Status (ref.: No Partner)</i>	
Cohabiting	0.21** (0.08)
Married	0.08** (0.04)
<i>Number of children in the household</i>	
Children under the age of 18y in hh	0.01 (0.03)
<i>ISCO-88</i>	YES
<i>Change of Occupation (ref.: No Change)</i>	
Change	0.13* (0.07)
<i>Working Hours (ref.: Full-time Contract)</i>	
Part-time Contract	-0.18*** (0.05)
<i>Contract Type (ref.: permanent contract)</i>	
Fixed-term Contract	0.00 (0.10)
<i>Firmsize (ref.: max. 19 employees)</i>	
Min. 20 and max. 199 employees	0.02

	(0.10)
Min. 200 employees	-0.10
	(0.11)
Initial Conditions	
Job-related Non-formal Training Participation	0.17***
	(0.03)
Cohabiting	-0.05
	(0.09)
Married	-0.12*
	(0.07)
Number of children in hh	0.05*
	(0.03)
Occupational change	-0.10**
	(0.04)
Fixed-term Contract	0.11
	(0.09)
Part-time Work	-0.03
	(0.06)
Min. 20 and max. 199 employees	-0.07
	(0.08)
Min. 200 employees	0.01
	(0.12)
Individual Time-means	
Cohabiting	-0.17
	(0.18)
Married	0.06
	(0.08)
Number of children	-0.05
	(0.04)
Occupational change	0.22
	(0.19)
Part-time contract	0.83
	(0.18)
Fixed-term contract	1.06
	(0.08)
Min. 20 and max. 199 employees	0.95
	(0.04)
Min. 200 employees	1.22
	(0.19)

Number of persons	560
Number of person-years	2,591

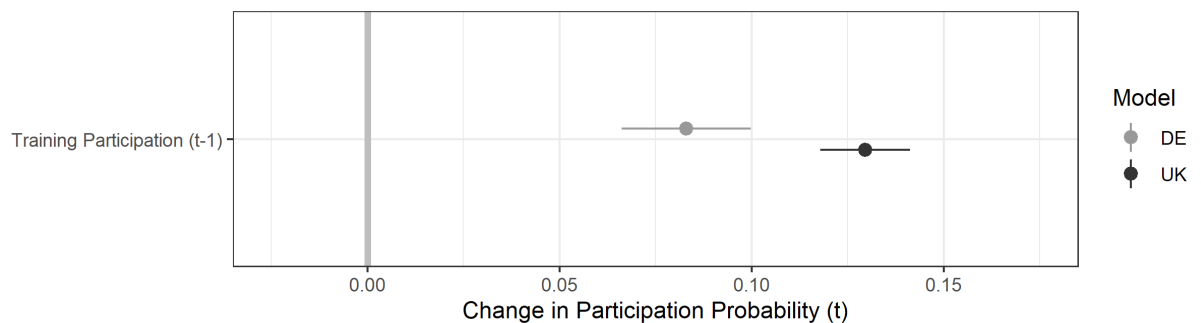
Table A10. Robustness Check 3: Sectors with low share of highly educated workers (UK)

	Average marginal effects (Std. Err.)
Job-related Non-formal Training Participation (t-1)	0.13*** (0.02)
<i>Education (ref. Medium)</i>	
High Education	0.03*** (0.01)
Low Education	-0.01 (0.01)
<i>Gender (ref.: Male)</i>	
Female	-0.01 (0.01)
<i>Age</i>	
Age	0.00 (0.00)
<i>Partnership Status (ref.: No Partner)</i>	
Cohabiting	-0.01 (0.03)
Married	-0.03 (0.03)
<i>Number of children in the household</i>	
Children under the age of 16y in hh	0.01 (0.01)
<i>ISCO-88</i>	YES
<i>Change of Occupation (ref.: No Change)</i>	
Change	0.08*** (0.02)
<i>Working Hours (ref.: Full-time Contract)</i>	
Part-time Contract	0.01 (0.02)
<i>Contract Type (ref.: permanent contract)</i>	
Fixed-term Contract	0.11* (0.06)
<i>Firmsize (ref.: max. 24 employees)</i>	

Min. 25 and max. 199 employees	0.04 (0.03)
Min. 200 employees	0.07** (0.03)
Initial Conditions	
Job-related Non-formal Training Participation	0.11*** (0.01)
Cohabiting	0.07** (0.03)
Married	0.04* (0.03)
Number of children in hh	-0.01 (0.01)
Occupational change	-0.04 (0.03)
Fixed-term Contract	0.02 (0.04)
Part-time Work	0.01 (0.02)
Min. 25 and max. 199 employees	-0.02 (0.03)
Min. 200 employees	-0.02 (0.03)
Individual Time-means	
Cohabiting	-0.03 (0.05)
Married	-0.01 (0.04)
Number of children	-0.00 (0.02)
Occupational change	0.06 (0.05)
Part-time contract	-0.09** (0.03)
Fixed-term contract	-0.12 (0.10)
Min. 25 and max. 199 employees	-0.01 (0.04)
Min. 200 employees	-0.01

	(0.05)
Number of persons	2,314
Number of person-years	10,003

Figure A6. Robustness Check 4: Excluding the public sector



In order to further explore the potential impact of the public sector on our findings, we conducted an additional analysis by excluding the public sector from our sample. This was done to investigate whether the inclusion of public sector workers may have influenced the observed relationship between training participation and subsequent participation. Upon conducting this analysis, we found that the coefficients remained robust and did not show substantial changes compared to our main analysis that included the public sector. This suggests that the presence of public sector workers did not significantly alter the relationship between training participation and its impact on future participation in our study. By excluding the public sector, we aimed to assess the generalizability of our findings to a broader range of occupational contexts. Our results indicate that the observed patterns of training accumulation and its influence on subsequent participation were consistent across both the public and private sectors in Germany and the UK.

Table A11. Robustness Check 4: Excluding public sector (DE)

	Average marginal effects (Std. Err.)
Job-related Non-formal Training Participation (t-1)	0.08*** (0.01)
<i>Education (ref. Medium)</i>	
High Education	0.04*** (0.01)
Low Education	-0.02 (0.03)
<i>Gender (ref.: Male)</i>	
Female	0.04*** (0.01)
<i>Age</i>	
Age	0.00 (0.00)
<i>Partnership Status (ref.: No Partner)</i>	
Cohabiting	0.07** (0.03)
Married	0.07*** (0.01)
<i>Number of children in the household</i>	
Children under the age of 18y in hh	-0.01 (0.01)
<i>ISCO-88</i>	YES
<i>Change of Occupation (ref.: No Change)</i>	
Change	0.09*** (0.02)
<i>Working Hours (ref.: Full-time Contract)</i>	
Part-time Contract	-0.04*** (0.01)
<i>Contract Type (ref.: permanent contract)</i>	
Fixed-term Contract	0.01 (0.02)
Sectors (WZ 2008)	YES

Firmsize (ref.: max. 19 employees)

Min. 20 and max. 199 employees	0.04 (0.02)
Min. 200 employees	0.10*** (0.03)

Initial Conditions

Job-related Non-formal Training Participation	0.18*** (0.01)
Cohabiting	0.04 (0.03)
Married	0.01 (0.02)
Number of children in hh	0.01 (0.01)
Occupational change	-0.01 (0.01)
Fixed-term Contract	0.01 (0.02)
Part-time Work	0.03* (0.02)
Min. 20 and max. 199 employees	0.00 (0.03)
Min. 200 employees	0.01 (0.03)

Individual Time-means

Cohabiting	-0.17*** (0.05)
Married	-0.08*** (0.03)
Number of children	-0.00** (0.01)
Occupational change	-0.11** (0.05)
Part-time contract	-0.04 (0.03)
Fixed-term contract	-0.06 (0.05)
Min. 20 and max. 199 employees	-0.02 (0.04)

Min. 200 employees	-0.07 (0.05)
Number of persons	5,163
Number of person-years	27,170

Table A12. Robustness Check 4: Excluding public sector (UK)

	Average marginal effects (Std. Err.)
Job-related Non-formal Training Participation (t-1)	0.13*** (0.01)
<i>Education (ref. Medium)</i>	
High Education	0.05*** (0.01)
Low Education	0.00 (0.01)
<i>Gender (ref.: Male)</i>	
Female	0.02** (0.01)
<i>Age</i>	
Age	0.00 (0.00)
<i>Partnership Status (ref.: No Partner)</i>	
Cohabiting	0.01 (0.01)
Married	-0.02 (0.02)
<i>Number of children in the household</i>	
Children under the age of 16y in hh	0.02*** (0.01)
<i>ISCO-88</i>	YES
<i>Change of Occupation (ref.: No Change)</i>	
Change	0.07*** (0.01)
<i>Working Hours (ref.: Full-time Contract)</i>	
Part-time Contract	-0.01 (0.01)
<i>Contract Type (ref.: permanent contract)</i>	
Fixed-term Contract	-0.01 (0.01)
Sectors (WZ 2008)	YES

Firmsize (ref.: max. 24 employees)

Min. 25 and max. 199 employees	0.01 (0.01)
Min. 200 employees	0.02 (0.01)

Initial Conditions

Job-related Non-formal Training Participation	0.14*** (0.01)
Cohabiting	0.00 (0.01)
Married	0.01 (0.01)
Number of children in hh	0.01** (0.01)
Occupational change	-0.05*** (0.01)
Fixed-term Contract	0.00 (0.01)
Part-time Work	0.00 (0.01)
Min. 25 and max. 199 employees	-0.02** (0.01)
Min. 200 employees	-0.04*** (0.01)

Individual Time-means

Cohabiting	0.01 (0.02)
Married	0.04 (0.02)
Number of children	-0.03*** (0.01)
Occupational change	0.03 (0.02)
Part-time contract	-0.04** (0.02)
Fixed-term contract	0.00 (0.03)
Min. 25 and max. 199 employees	0.04* (0.02)

Min. 200 employees	0.04* (0.02)
Number of persons	12,592
Number of person-years	58,939

References

- Grüttgen, I., Helbig, A., and Ehlert, M. (2023). NEPS-data on non-formal learning activities - Structure and specifications and linking of the data of the starting cohort 6. NEPS Survey Paper No. 101.
- Morgan, S. L. and Winship, C. (2015). *Counterfactuals and causal inference. Second edition.* Cambridge: Cambridge University Press.
- Turek, K. (2020). Comparative Panel File: Codebook for CPF v.1.0. Netherlands Interdisciplinary Demographic Institute