

Where is the Limit?

*Effects of Different Operationalisations of
the Spatial System on Labour Market
Research in Germany*

Thorsten Euler

Joint Spring Meeting of BBSR, BTU &
SOEP RegioHub
Cottbus, March 1 2024

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German Centre for Higher Education Research
and Science Studies ■

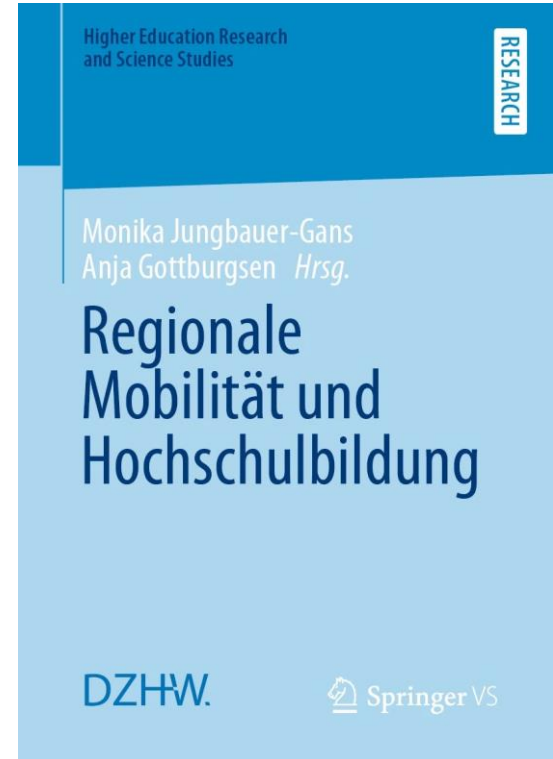
What brought me here?

1

Trommer, M., & Euler, T. (2022).

**Monetäre Erträge regionaler Mobilität:
Auswirkungen regionaler
Arbeitsplatzwechsel auf die Lohnentwicklung
von Hochschulabsolvent*innen in den ersten
zehn Jahren nach Studienabschluss.** In M.
Jungbauer-Gans & A. Gottburgsen (Eds.),
Regionale Mobilität und Hochschulbildung
(pp. 203-241). Wiesbaden: Springer VS

https://doi.org/10.1007/978-3-658-36156-3_8



What brought me here?

2

Dissertation paper:

*Wohin und wie weit? Differenzierung von individuellen und strukturellen Einflussfaktoren auf räumliche Arbeitsplatzmobilität bei Hochschulabsolvent*innen mit und ohne Promotion*

3



Why does it matter?

- Focus on returns on education of higher education graduates and PhDs
 - Education as investment in human capital (Mincer 1958)
 - Aim of (non-)monetary returns
 - Mobility as additional investment for higher occupational returns (Sjaastad 1962)
 - Specialised labour markets based on education and professions
 - Highly qualified persons especially mobile during initial career phases (Corcoran/Faggian 2017)
- Mobility as an important aspect in modelling mechanisms of returns on education

Different operationalisations of the spatial system in empirical studies

- districts (Lehmer/Ludsteck 2011)
- regional planning regions (Ganesch et al. 2019; Ganesch 2020; Krabel/Flöther 2014)
- labour market regions (Haas 2000; Maier/Sprietsma 2016)
- federal states (Fabian/Minks 2008; Haussen/Uebelmesser 2018)
- combinations of regions (Geis-Thöne 2020)
- no standardised interpretation (Faggian et al. 2017)

⇒ often driven by restrictions on available/linkable data

Principal question

What happens if we change the entities that define (regional) mobility in our models?

Models

- Regression models on the development of gross hourly wages between surveys*
 - base model (only mobility)
 - model with basic control variables**
 - model with basic control variables** and interaction mobility##education (PhD)

*ratio of latter wage to former wage

** (type of institution, study field, sex, job experience)

Data

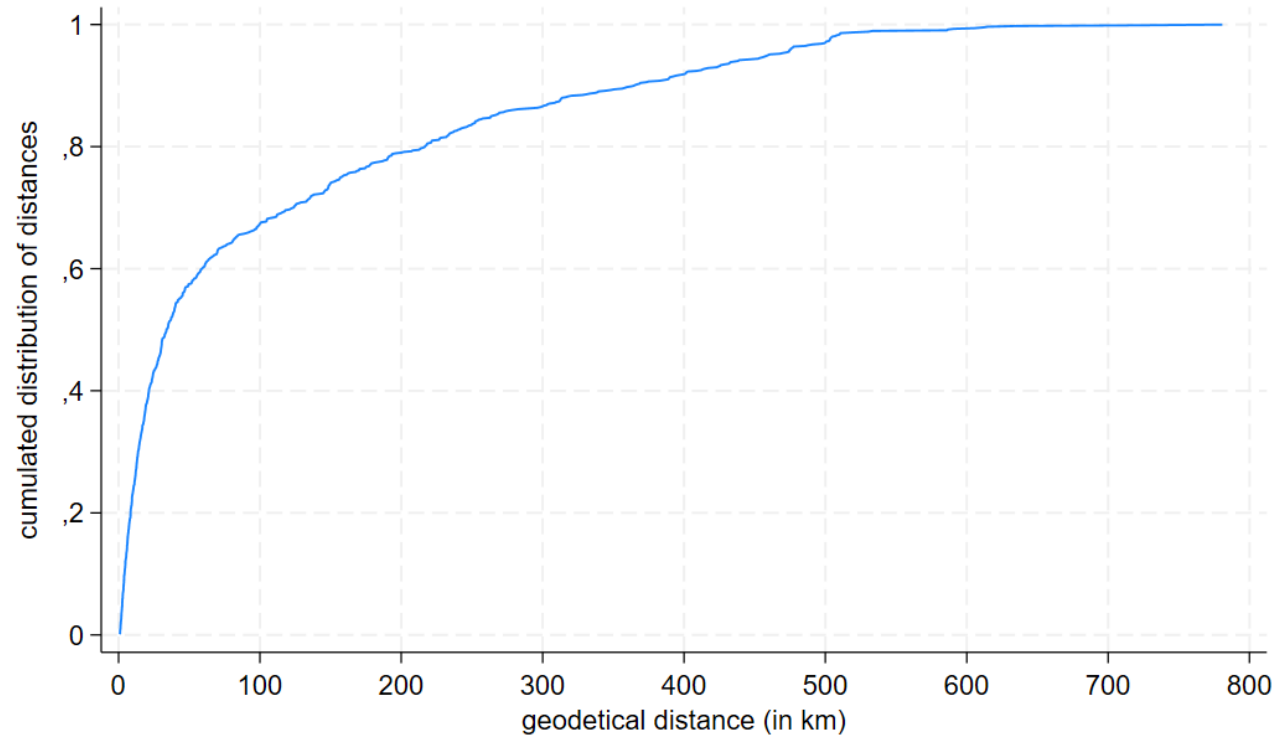
- DZHW Graduate Panel 2009
- Representative sample of German higher education graduates (first professionally recognised degree) from winter semester 2008/09 and summer semester 2009
 - Three surveys approx. one, five, and ten years after graduation
 - Information collected on personal, occupational, and scientific development
 - Focus on period between second and third survey
 - All mobility events based on self-reported postcodes of current main place of employment

Operationalisation of mobility

- Initial data
 - postcode (five digits)
 - postcode (first two digits)
 - postcode (first digit)
- Geodetical
 - distance between postcodes*
 - distance \geq 50 km
 - distance \geq 100 km
- Administrative
 - NUTS3
 - NUTS2
 - NUTS1
 - labour market region
 - regional planning region

*only used as basis

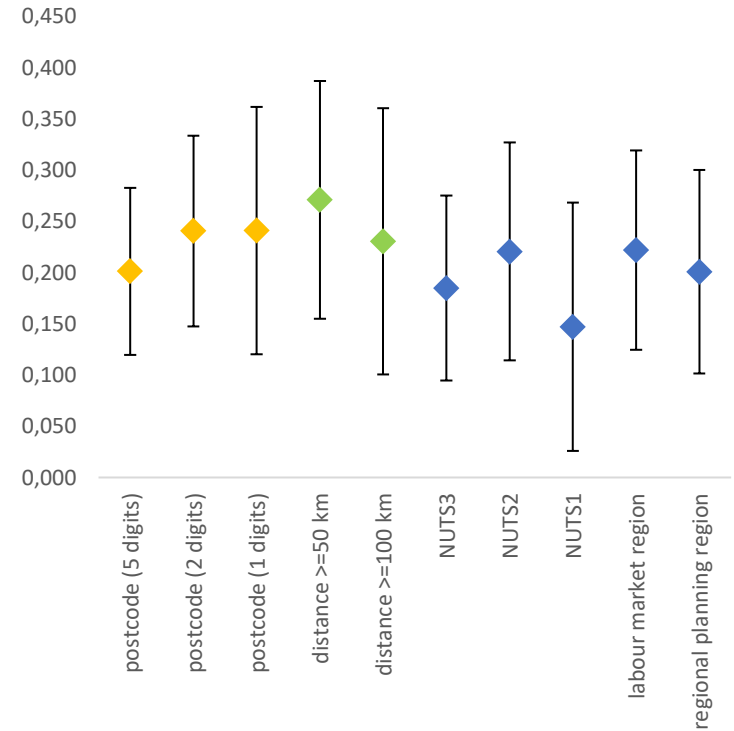
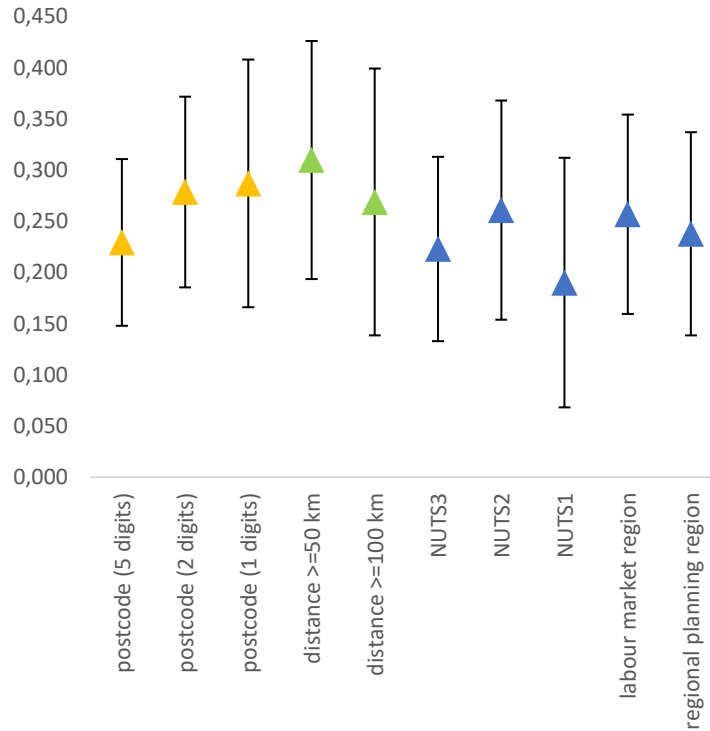
Distance distribution if >0



Shares of mobility events

	share of mobility (%)	n
postcode (5 digits)	30.4	2,964
postcode (2 digits)	20.2	2,964
postcode (1 digit)	10.8	2,964
distance >0 km	26.6	2,863
distance >=50 km	12.8	2,863
distance >=100 km	9.8	2,863
NUTS3	22.3	2,964
NUTS2	14.7	2,964
NUTS1	10.9	2,964
labour market region	18.2	2,964
regional planning region	17.3	2,964

base model vs. model with controls (incl. c.i.)



Model comparison

	Base model			Model with controls		
	Coeff.	SE	Sign.	Coeff.	SE	Sign.
postcode (5 digits)	0.230	0.042	***	0.201	0.042	***
postcode (2 digits)	0.279	0.047	***	0.241	0.047	***
postcode (1 digits)	0.287	0.062	***	0.241	0.062	***
distance >=50 km	0.310	0.059	***	0.271	0.059	***
distance >=100 km	0.269	0.066	***	0.231	0.066	**
NUTS3	0.223	0.046	***	0.185	0.046	***
NUTS2	0.261	0.054	***	0.221	0.054	***
NUTS1	0.190	0.062	**	0.147	0.062	*
labour market region	0.257	0.050	***	0.222	0.050	***
regional planning region	0.238	0.051	***	0.201	0.051	***

* = 0.05 ** = 0.01 *** = 0.001 n.s. = not significant

Interaction model mobility##education (with controls)

	Effect of mobility			Interaction mobility#PhD		
	Coeff.	SE	Sign.	Coeff.	SE	Sign.
postcode (5 digits)	0.134	0.045	**	0.304	0.112	**
postcode (2 digits)	0.160	0.053	**	0.306	0.120	*
postcode (1 digits)	0.126	0.070	n.s.	0.383	0.146	**
distance >=50 km	0.107	0.068	n.s.	0.564	0.140	***
distance >=100 km	0.120	0.077	n.s.	0.286	0.153	n.s.
NUTS3	0.072	0.051	n.s.	0.475	0.117	***
NUTS2	0.074	0.062	n.s.	0.487	0.128	***
NUTS1	0.056	0.072	n.s.	0.222	0.143	n.s.
labour market region	0.082	0.056	n.s.	0.544	0.122	***
regional planning region	0.053	0.057	n.s.	0.546	0.123	***

* = 0.05 ** = 0.01 *** = 0.001 n.s. = not significant

What happens if we change the entities that define (regional) mobility in our models?

- Models do not change completely
- Coefficients vary but do not differ significantly (base and control model)
- Arbitrary entities (postcodes, thresholds of distances) perform comparably to more obvious operationalisations (e.g. labour market regions) in the first models
- In the interaction model, postcodes and administrative entities perform differently
- NUTS1 and long distances showing no significant effect

What else?

- determinants on mobility treatments
- places of residence and occupation
- mobility events between surveys
- implementing comparison in more complex models
- looking at earlier mobility (initial career placement)
- general population instead of higher education graduates

Thank you for your attention

*German Centre for Higher Education
Research and Science Studies (DZHW)*

Thorsten Euler

Research Area Research Infrastructure
and Methods – Data Research Centre

E-Mail: euler@dzhw.eu



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