RISIS

DZHW
Deutsches Zentrum für
Hochschul- und Wissenschaftsforschung

Organizational Publication Output and Job-Placement and Individual Output of Doctorate Holders

Paris, September 2017
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Academic Prestige & Careers

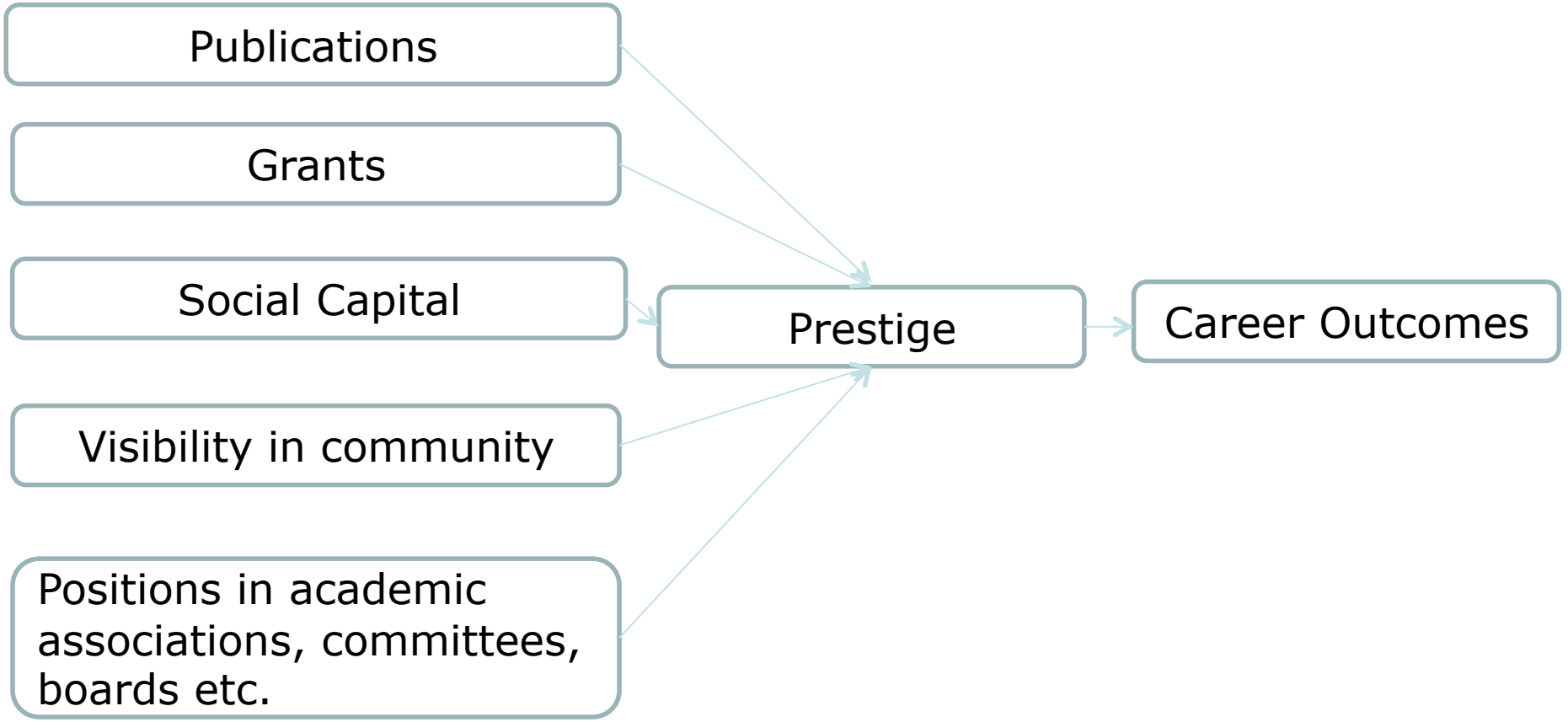
1. To what extent do academic prestige and it‘s components have an impact on careers of PhD holders?
   a) What‘s the specific role of the PhD-granting faculty‘s publications and citation impact for faculty‘s prestige and career outcomes of their graduates?

2. What is academic prestige?

Today: first results on effect of PhD-granting faculty‘s scientific performance on job-placement after the PhD

Academic Prestige

- .. is a form of symbolic capital, ascribed, highly subjective but increasingly "objectified" through rankings etc.



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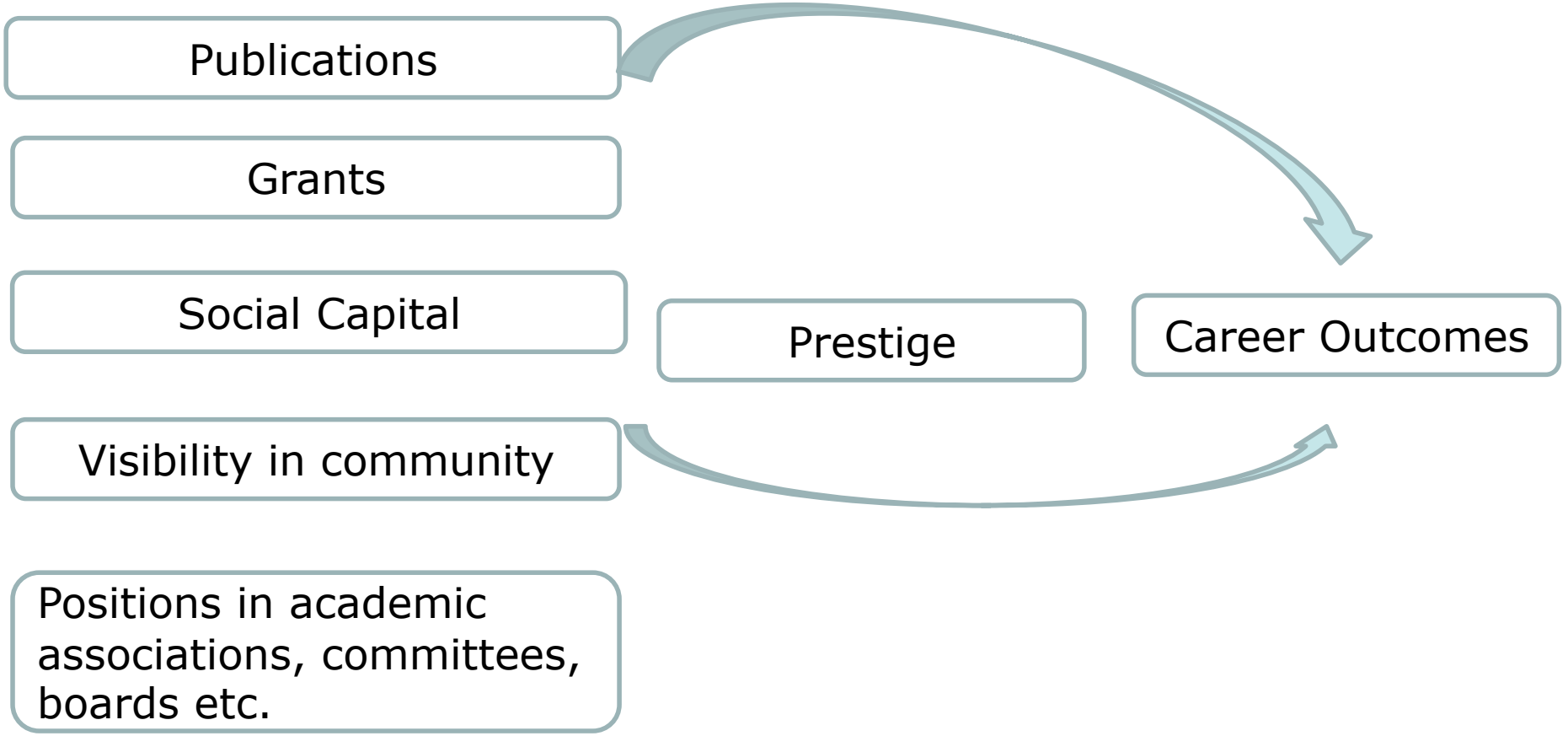


Prestige and Academic Careers

- Department prestige affects placement of PhD graduates (Burris 2014, Headworth & Freese 2016)

- Power distribution between number of professors and number of PhD-departments that these professors graduated from (large share of professors comes from few (elite) departments)

- Limited evidence in Germany

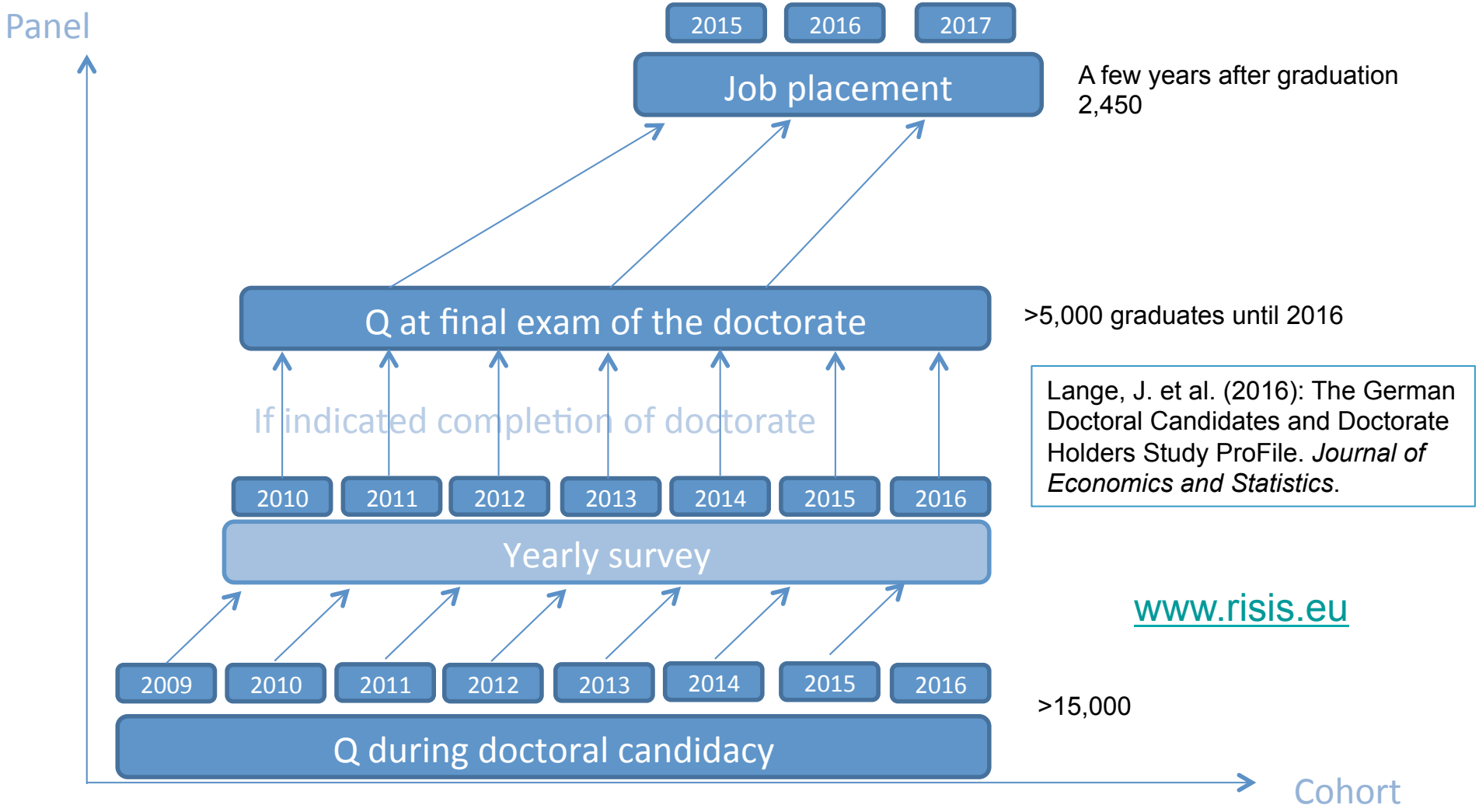
PhD networks (Münch 2014), Academic performance (Wollersheim et al. 2015), Tenure in Economics (Graber et al. 2008)

Effects of Prestige on Academic Careers

- Prestige effects
  - Selection effects
  - Training Effects
  - Prestige effects
- H_1 the higher the productivity of the faculty the more should graduates from these faculties be active in publishing themselves
- H_2 Graduates from prestigious faculties show better career outcomes, “prestige premium”

Data & Methods

The German Doctoral Candidates and Doctorate Holders Study *ProFile*



Lange, J. et al. (2016): The German Doctoral Candidates and Doctorate Holders Study ProFile. *Journal of Economics and Statistics*.

www.risis.eu

CWTS Leiden Ranking

- Collects publications and citations from Web of Science database, range of indicators available
- Author affiliation as basis for allocation to universities
- algorithm for classifying journal articles to scientific fields

- RISIS site visit: data for 2008-2015 for subset of German (doctoral degree granting) universities from LR

ProFile and Leiden Ranking

Match (Uni, Main Field, Year of graduation)

- 5 Main Fields (SSH, BioMed+H, Life&Earth S., Math +Comp S.)
- 78 universities, 187 Main fields at German universities (=level1 groups)
- 383 – 1 respondents per level1 groups
- Not matched: 63 doctorate holders from arts universities
- Year of graduation matched to end of observation period in LR

Matching with Leiden - Disciplines

Discipline of PhD (ProFile)
(Examples, based on open ends)

Mathematics
Computer Science
Physics, Astronomy
Chemistry
Earth Sciences (excluding Geography)
Geography
Biology
Pharmacy
Civil Engineering
Electrical Engineering
Mechanical and Process Engineering
Engineering in general
Mining, Metallurgy
….

Main Scientific Fields (Leiden)
(based on Publications)

- Biomedical and health sciences
- Life and earth sciences
- Mathematics and computer science
- Physical sciences and engineering
- Social sciences and humanities

Measures

Dependent Variables

Number of publications authored since beginning of the PhD (*training*)

Working in Academic R&D vs. Not working in Academic R&D (*prestige*)

Researchers vs. Non-Researchers (*prestige*)

Measures - Independent Variables

from Leiden Ranking

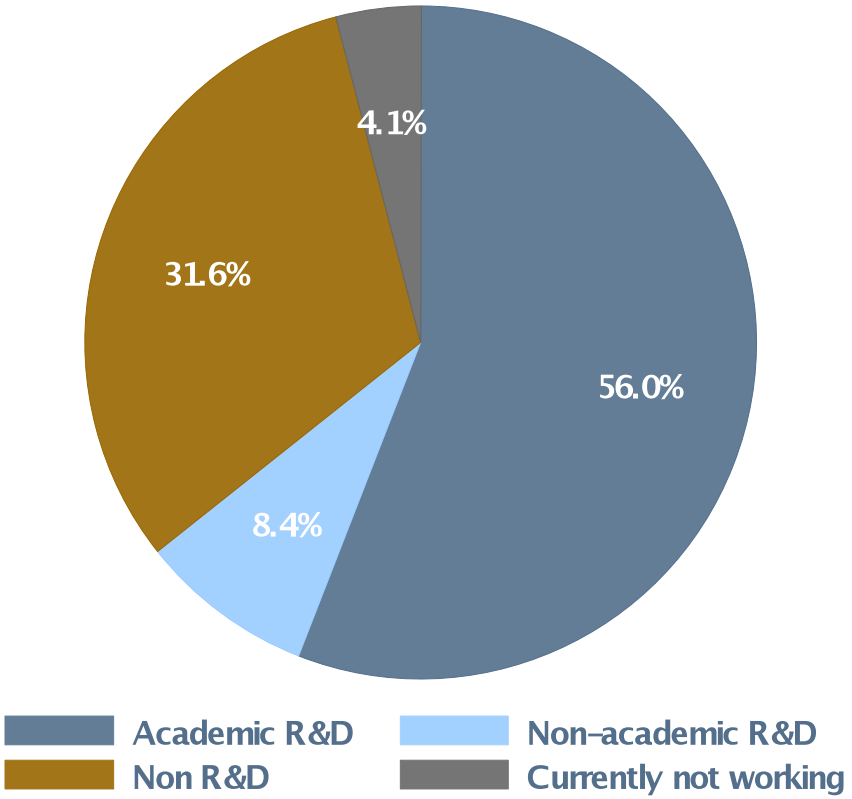
- total number of citations (visibility)
- fractional proportion of articles in top ten highly cited publications (impact)

from ProFile

- gender
- the time elapsed between graduation and participation in the Follow-up survey
- career preferences for research (assessed at graduation)

Results

Job Placement of Doctorate Holders



Sample Statistics

Variable	Mean	Standard Deviation	Minimum	Maximum
Individual Level (ProFile)				
Job-placement in academic R&D	.561	.496	0	1
Researchers	.642	.479	0	1
Number of publications	14.05	18.38	1	275
Career preferences for research	1.05	1.02	-2.43	3.57
Gender (Women=1)	.492	.500	0	1
Time between graduation and survey (in months)	43.00	22.27	1	130
Organizational Level (Leiden)				
Total number of citations	2999.43	4826.98	1	58400
Proportion of articles in top ten highly cited articles	.114	.035	0	.36

Results of Multi-Level Models

	Job-placement in academic R&D (logit, MFX)	**Researchers (logit, MFX)**	**Number of publications (GLS, MFX)**
Career preferences for research	.95*** (.05)	1.04*** (.05)	.08*** (.03)
Gender (Women=1)	-.09 (.09)	-.28*** (.09)	-.27*** (.05)
Time between graduation and survey	-.00** (.00)	-.00** (.00)	.01*** (.00)
Total number of Citations	.00 (.00)	.00 (.00)	.00** (.00)
Proportion of articles in top ten highly cited articles	.23 (1.31)	3.31** (1.39)	-.33 (.69)
Rho (ICC)	.00	.00	.02
N (level 1)	187	187	163
N (level 2)	2,450	2,450	1,440

N= 2,450 for full sample and 1,440 for number of publications (researchers only)

Conclusion & next steps

- Effects in the direction expected but
- intra-class correlation is close to zero suggesting that group setup can be improved

Next steps

- Include other rankings and more components of prestige
- Improve coding of scientific fields for Leiden

Thank you for your attention!