

# **Another world is possible**

**The gap between academia & industry & the world to come**

# About me

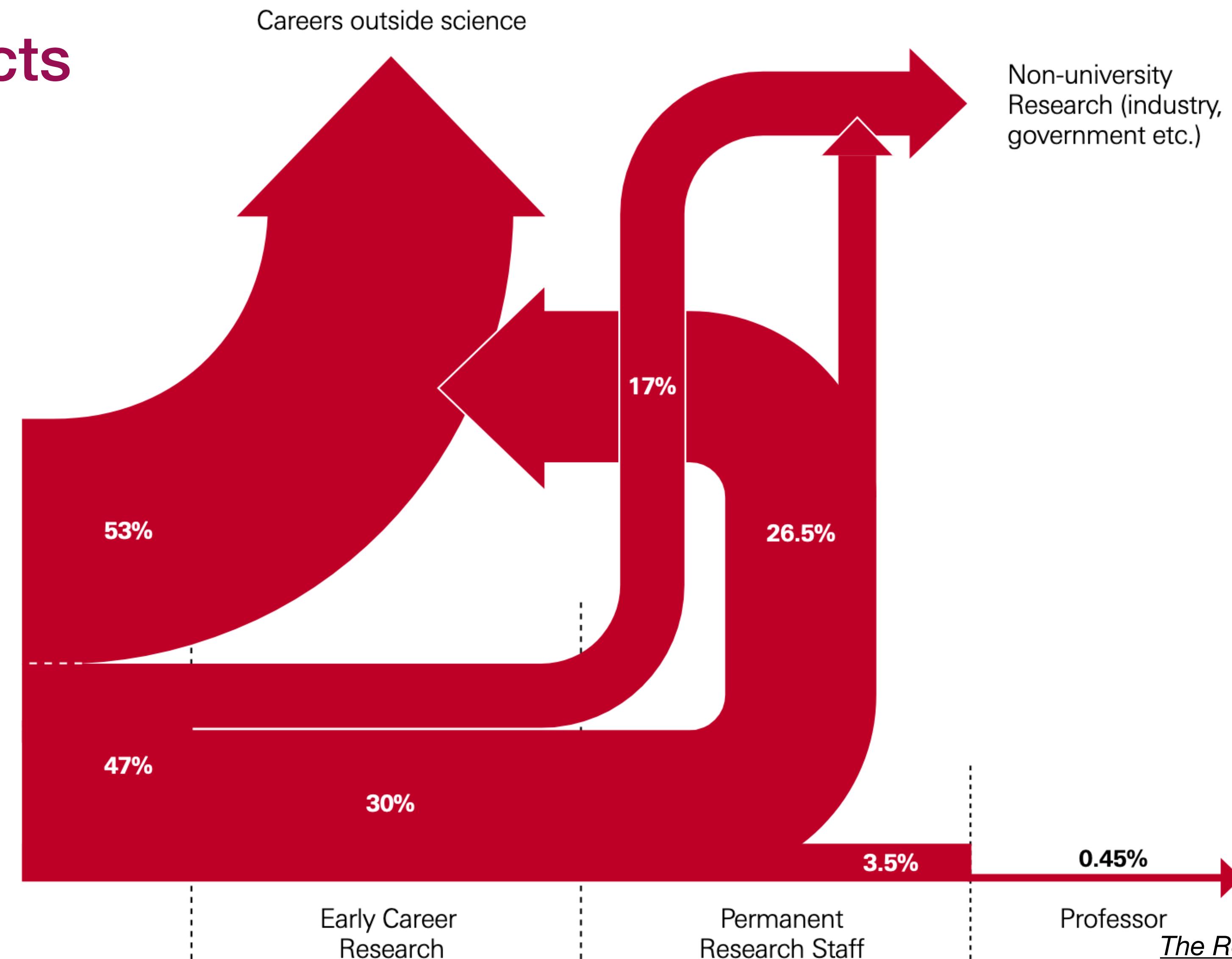
@psrmx

- Neuroscience - *UNAM*
- 2016 Master's cohort - *BCCN*
- Data consultant - *Charité*
- Developer & Data Scientist -  
*Thoughtworks*
- I like to bake & ferment things



# Academia is in crisis

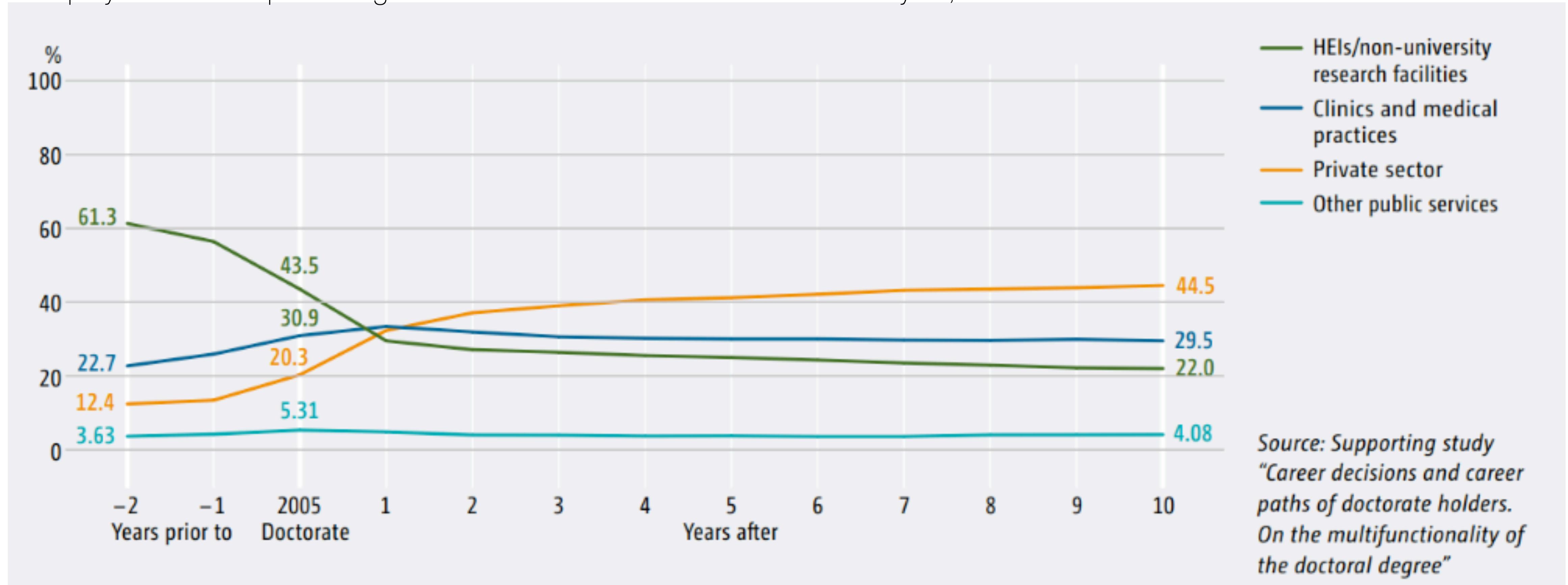
## Job prospects



# Academia is in crisis

## Job prospects - Germany

Employment sector percentage of doctorate holders as of 30 June each year, 2005 cohort.



# THE PLANS:



THE PLAN YOU  
TELL YOUR  
ADVISOR

• "I'M GOING TO BE A  
PROFESSOR AT A MAJOR  
RESEARCH UNIVERSITY  
AFTER I GRADUATE."



THE REAL  
PLAN

• LOOK FOR CAREER  
ALTERNATIVES.



THE SECRET  
PLAN

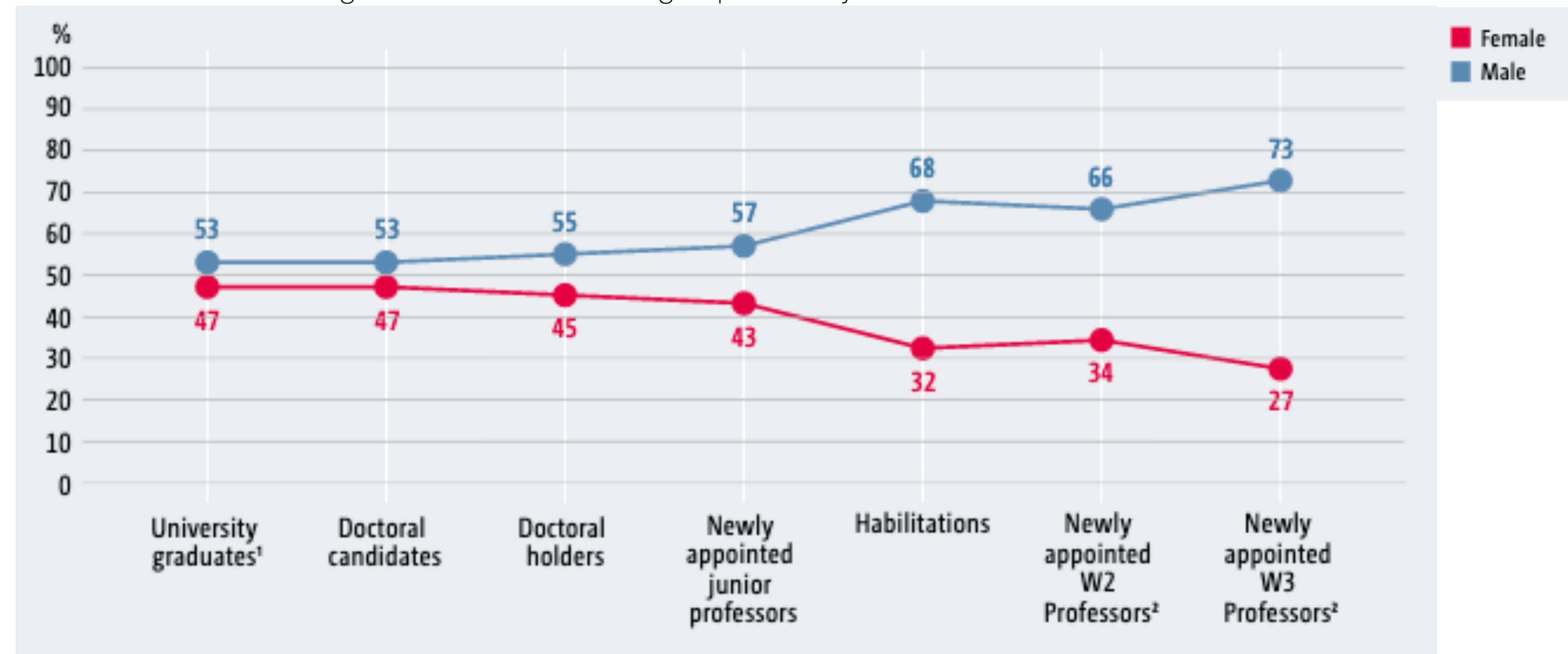
• BECOME A  
BAKER/ROCKSTAR/WRITER.

- ▶ **Academia is a competitive environment**

# Academia is in crisis

## Diversity - Germany

Percentage of women in various groups of early career researchers in 2018.



- ▶ **Academia is not very diverse**

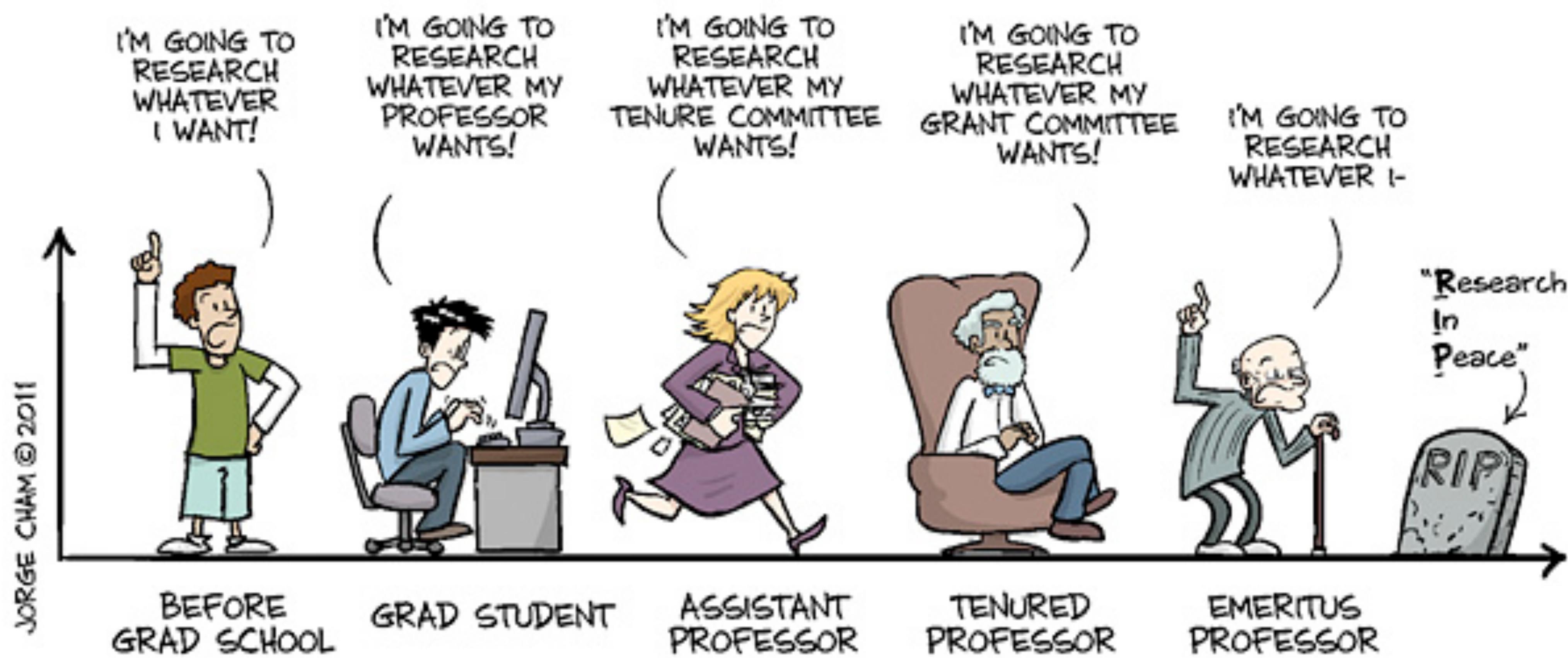
# Academia is in crisis

## Publish or be ethical

- Scientific misconduct:
  - Hunt for statistical significance (p-hacking, fMRI correlations)
  - Honorary authorships
- Scientific integrity - unsatisfactory knowledge is concealed
- Editorial journals act as gatekeepers of knowledge
- Intellectual freedom - funding focuses on hot, profitable topics, leaving other important topics unstudied

Various sources on publication pressure

# THE EVOLUTION OF INTELLECTUAL FREEDOM



- ▶ **Publication pressure has severe negative consequences**

**So what do a lot of people do?**

# Hurdles when changing careers

## Have we wasted our time?

- Industry's lingo is unknown
- Academic code has a bad reputation
- Years of academic experience are not always well recognised

# What can scientist bring to the table?

## Problem-solving mindset

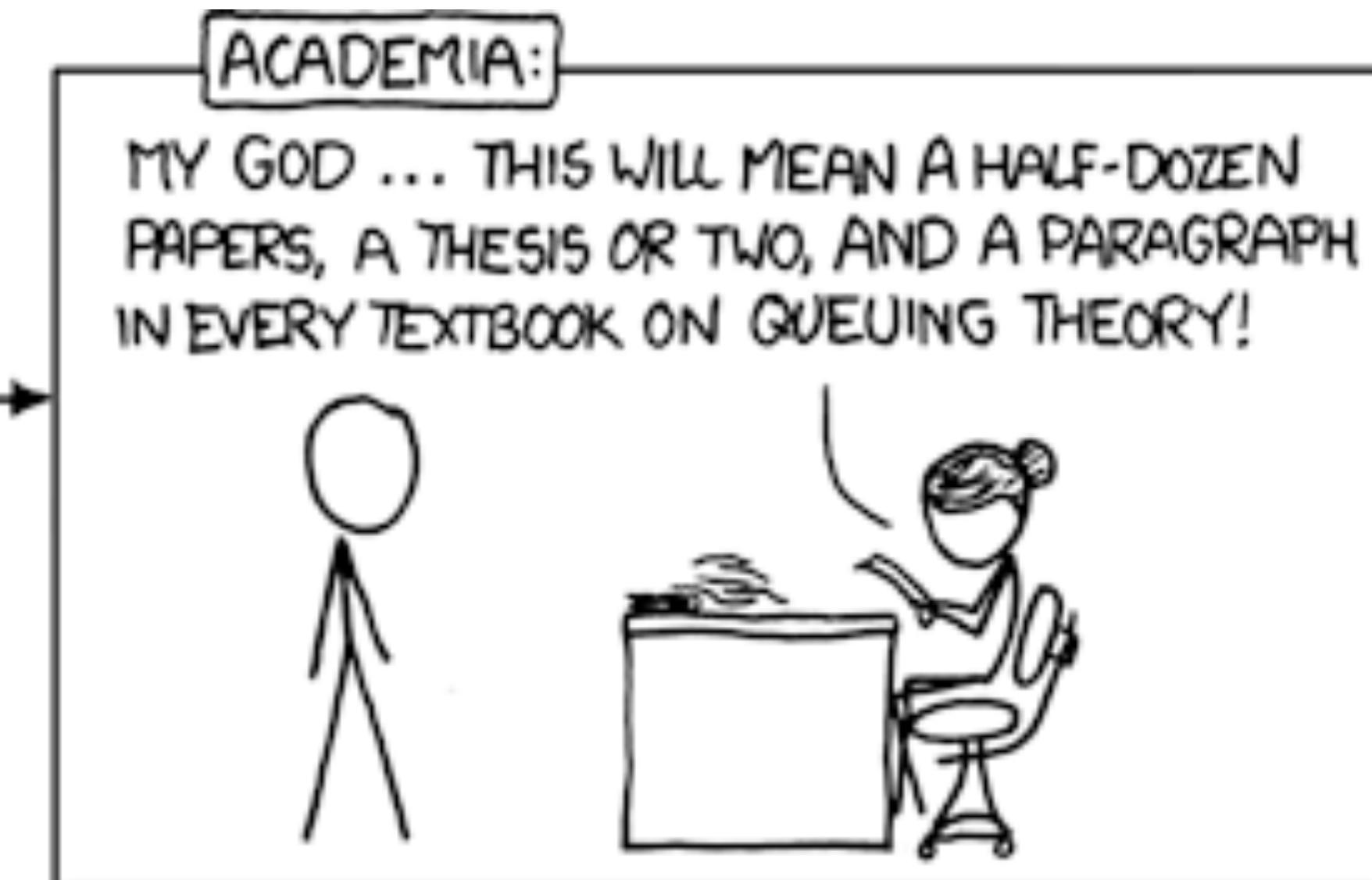
- As graduate students, we have experience in:
  - Analysis of value & prioritisation of work
  - Quality assessments
  - Project management - defining clear goals & the project's scope
  - Stakeholder management - coordinating and communicating across several layers of hierarchy & incentives

# Industry's best practices

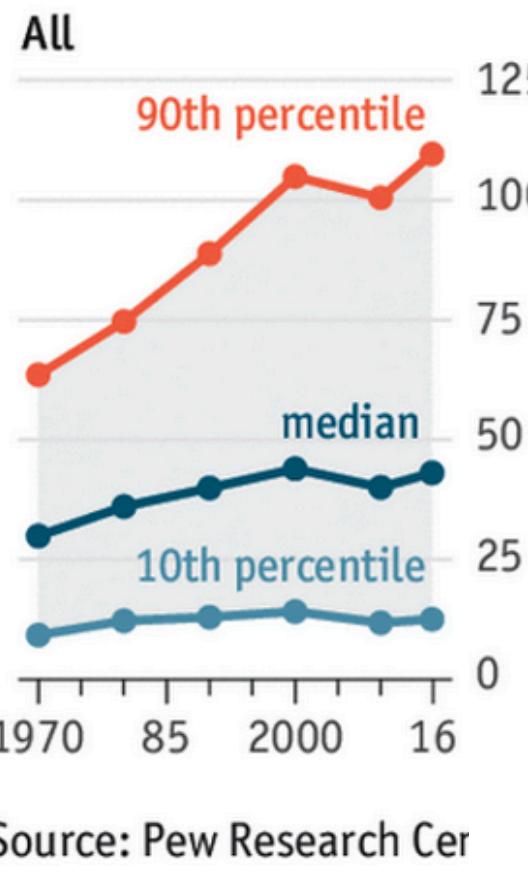
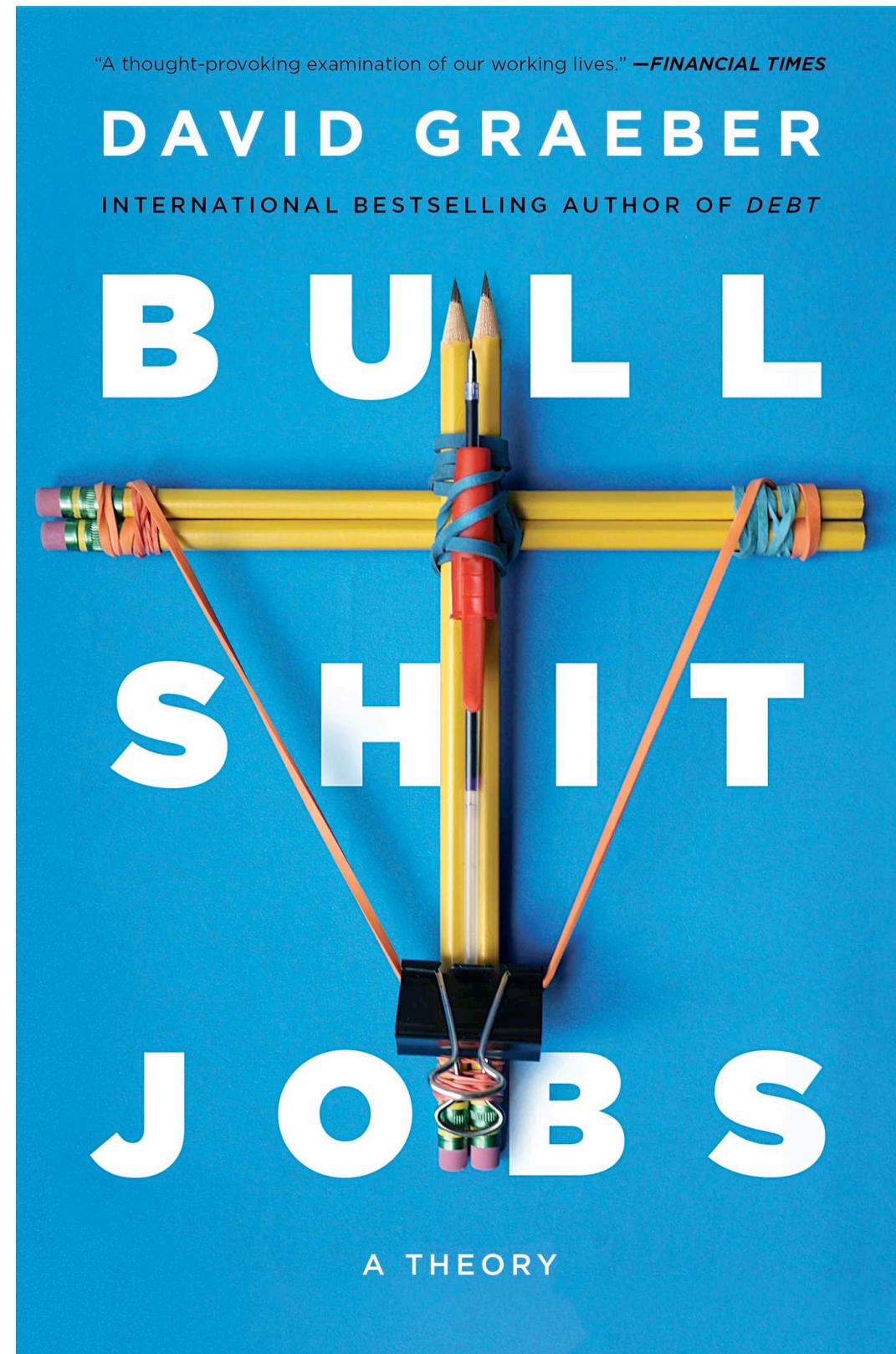
## Standards & tools

- Iterative - experiment, adapt, transform
- Collaborative environment - people are more important than processes
- Aims for extendible, scalable, repeatable, simple code
- Version control
- Tests
- Refactoring
- CI/CD - CD4ML
- Business analysis
- User centric

- ▶ Sounds great, doesn't it?



# The tech industry is in crisis too



# **So... now what?**

# Academia

## The good & the bad

- Supply of skilled and very smart people
- Space to create new scientific methods, technologies
- Provision of social knowledge
- Problem-solving capacity
- Competitive
- Hierarchical
- Not scalable
- Enforced scarcity leads to scientific misconduct
  - What gets published
  - Making up findings

# Industry

## The good & the bad

- Cooperative - shared responsibility, working and learning in teams
- Pretends to be based on self-organising principles
- Can be really diverse
- More accessible
- Provides financial security
- Ungrateful (or even boring)
- Meaningless (or even perverse) incentives
- Can be hierarchical & bureaucratic
- Adds up to increasing inequality

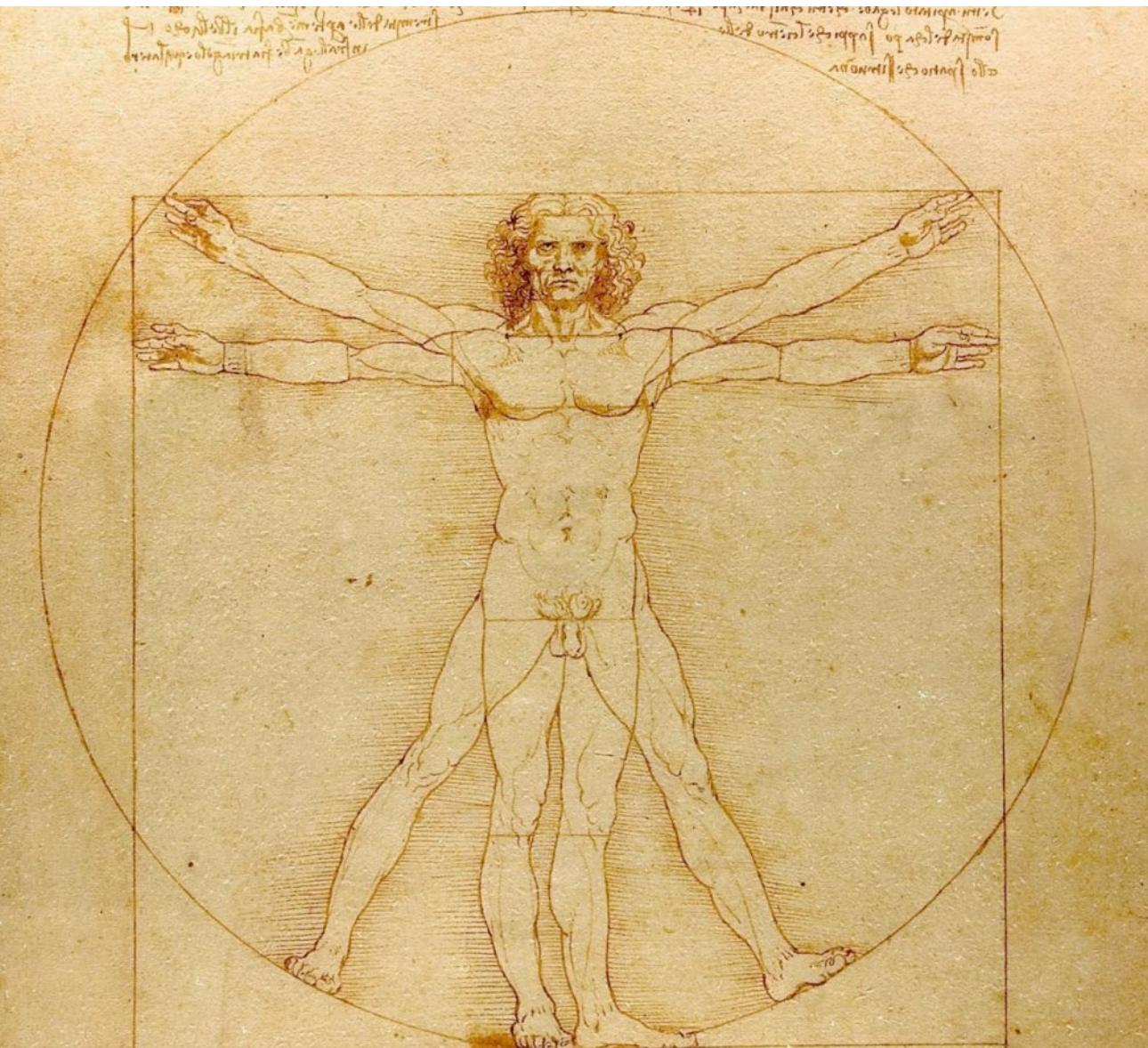
# Some reflections

## Does it have to be that way?

- Why is competition a necessity?
- Why hasn't there been revolutionary change?
  - Is it that scientist believe there is nothing to improve?
- Science is not a scarce resource - there are so many things to know and so many smart, motivated people!
  - The system creates harsh material conditions for researchers
- Is it possible to focus on responsible research practices?
  - For individuals, communities & the world!

# Another world is possible

## Examples of the best of both worlds



# The world to come

Let's imagine the world we want to live in

- Abundance
- No competition & no hierarchies
- Accessibility for EVERYONE
- Freedom to study and invent what we want!

Fully automated luxury communism

**Thank you!**



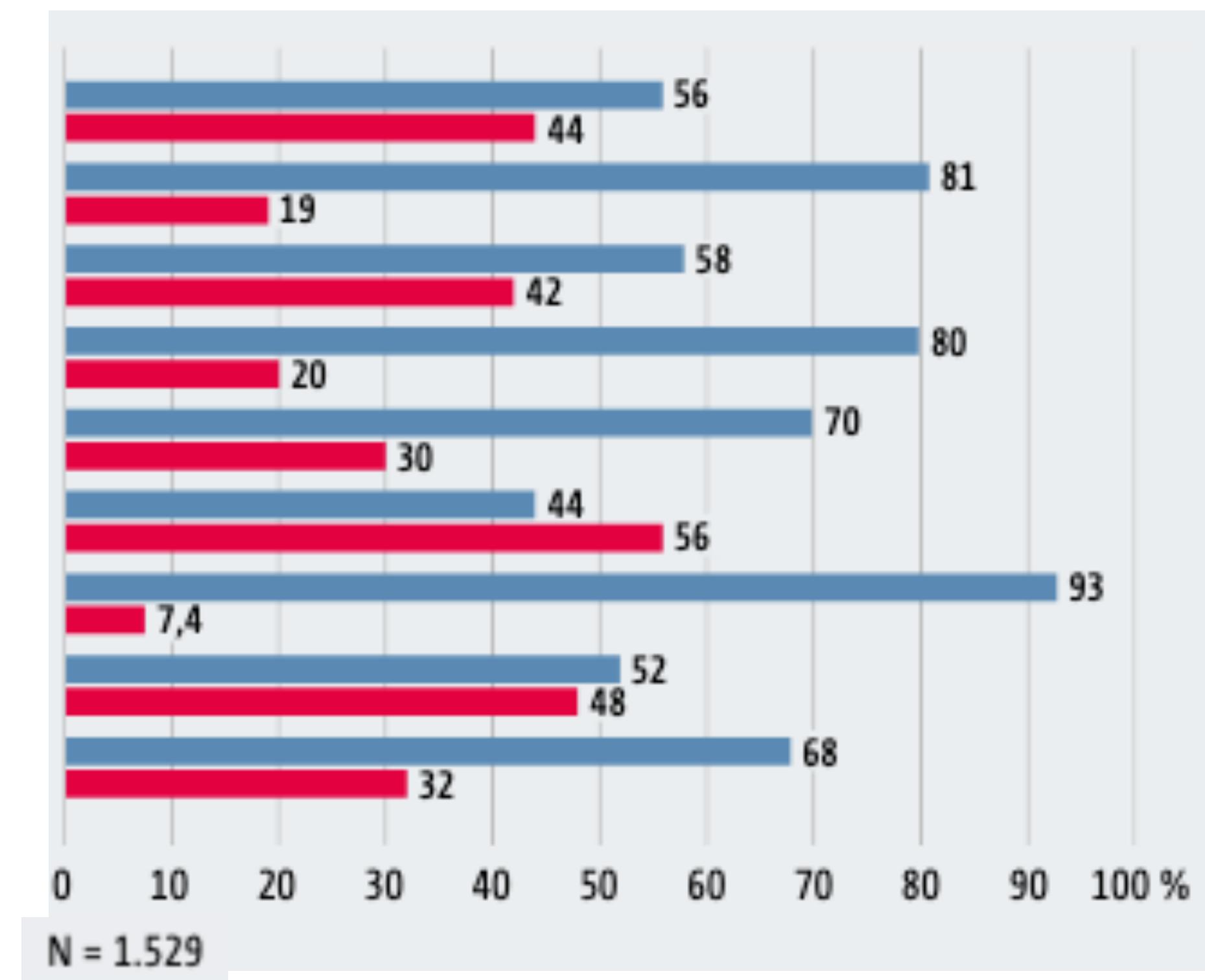
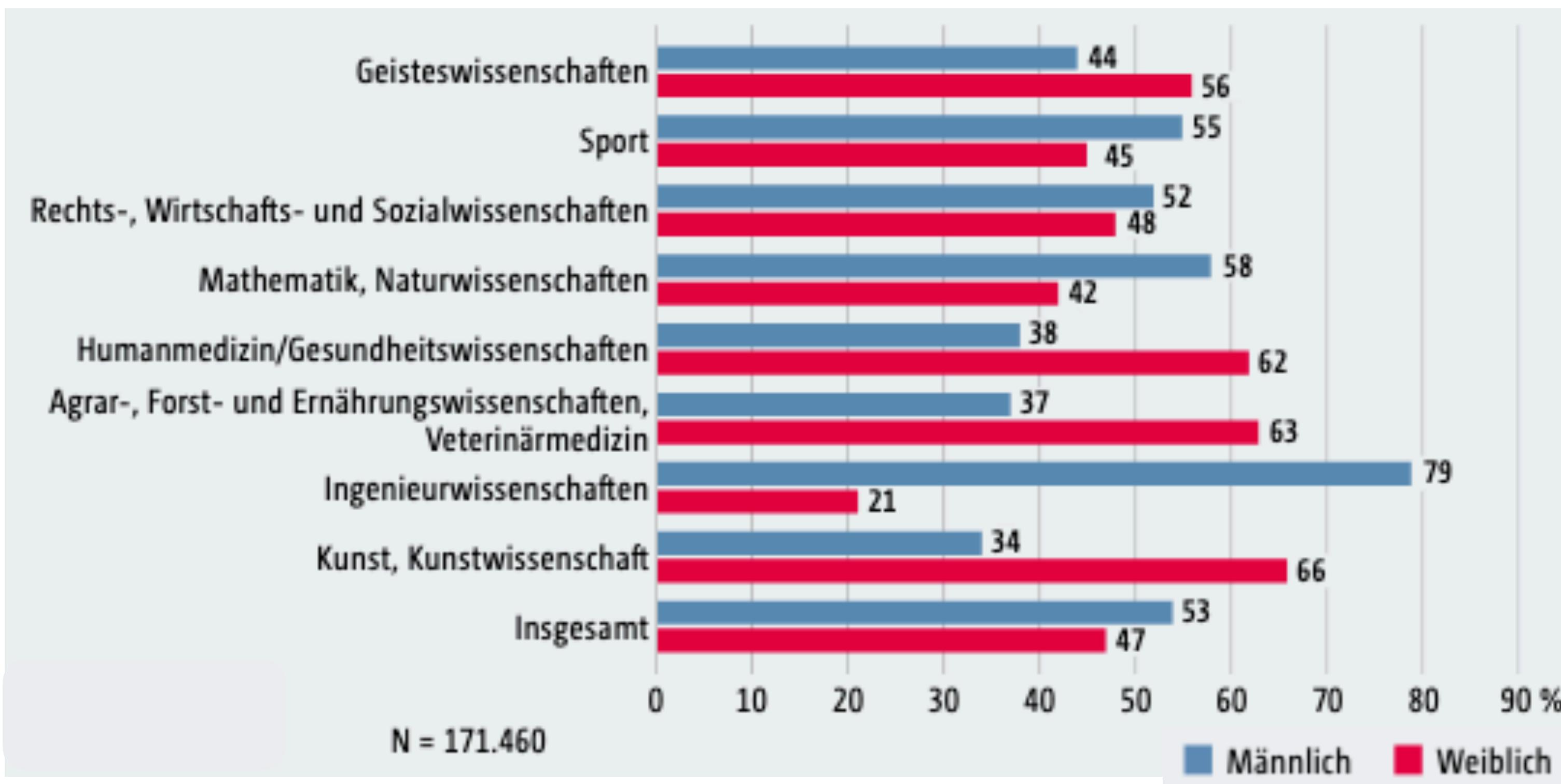
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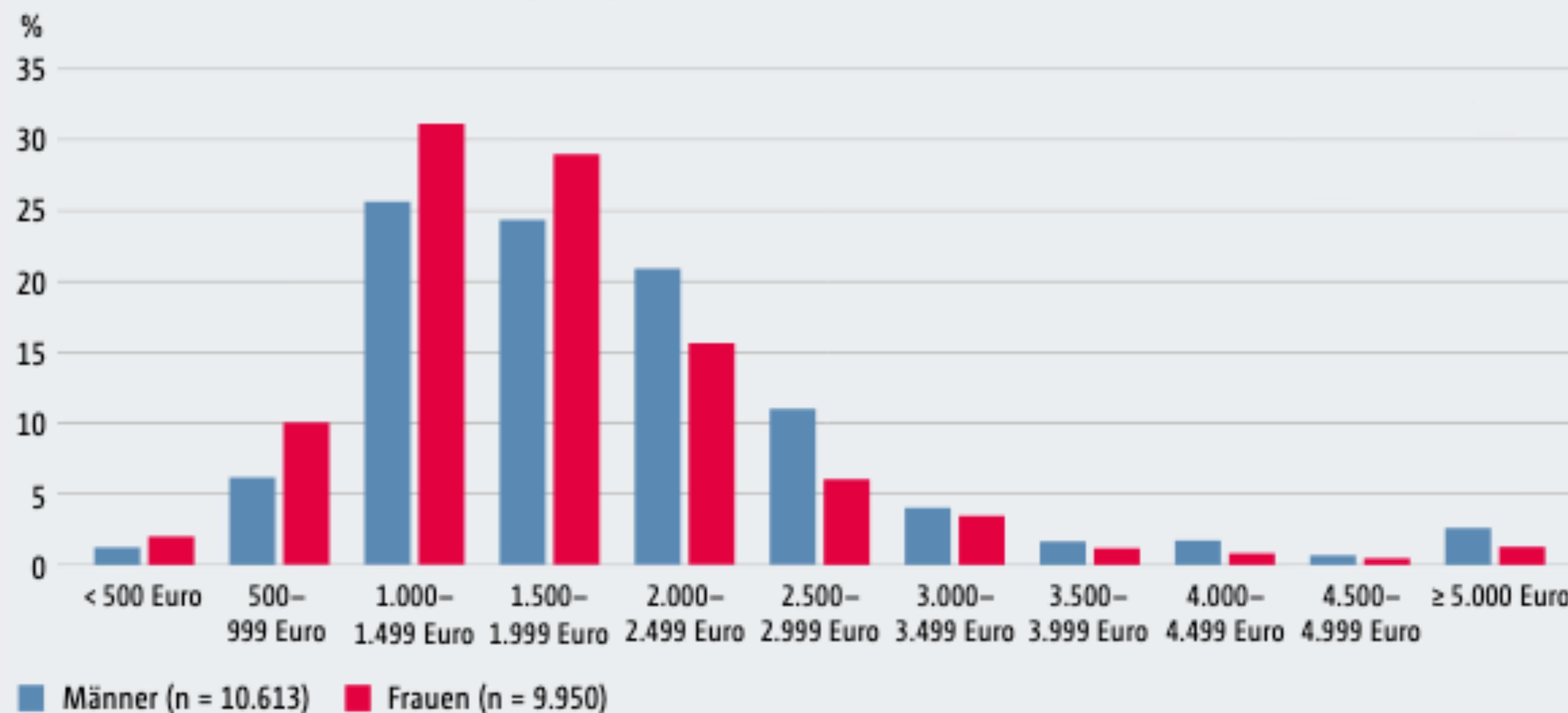
# Academia is in crisis

## Diversity - Germany

Percentage of 2018 post-graduate students vs. completed post-docs in different sectors per gender

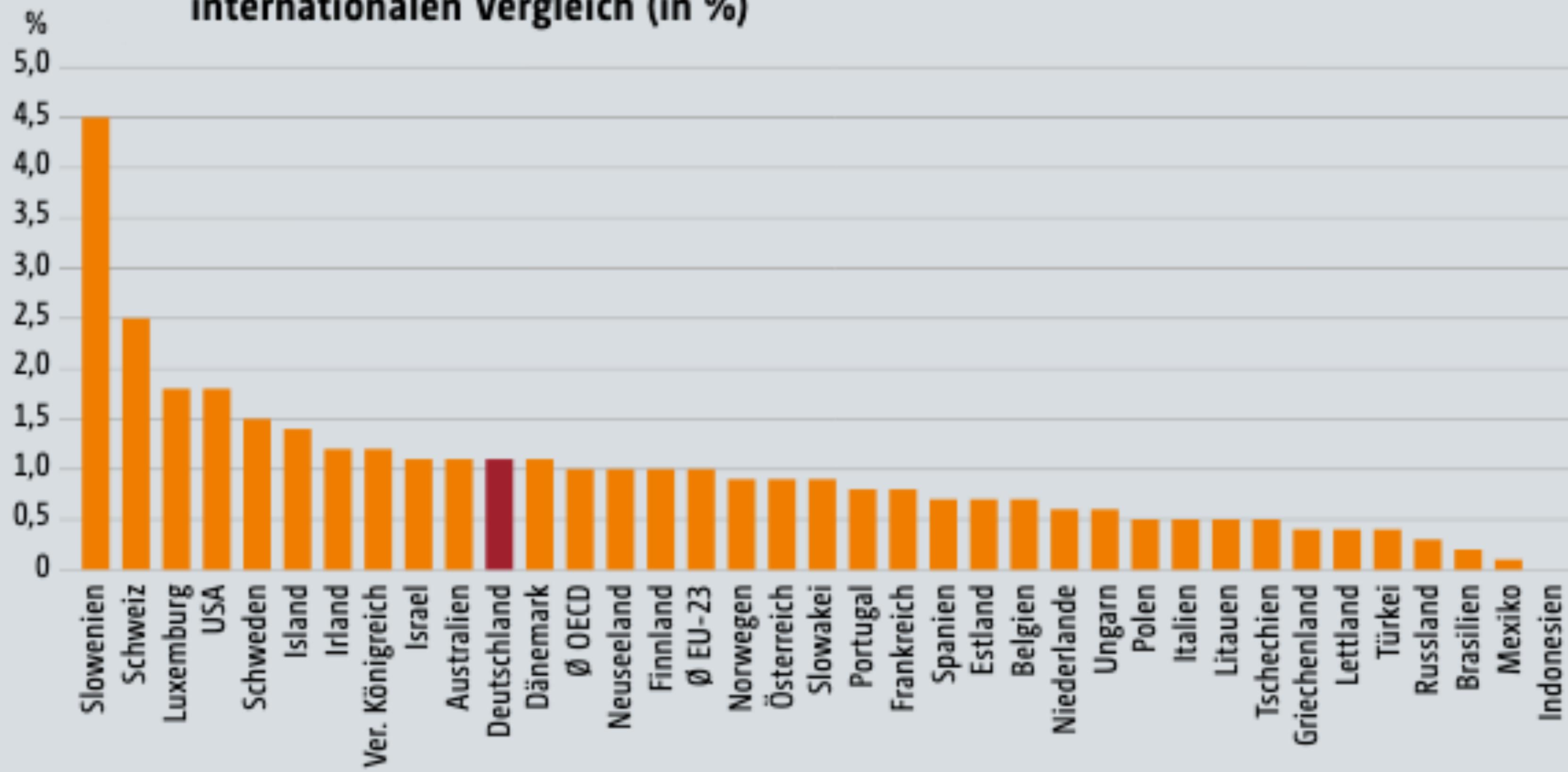


**Abb. B35: Nettoeinkünfte (gruppiert) von Promovierenden nach Geschlecht 2019 (in %)**



Quelle: Nacaps-Datenportal: Nacaps 1. Welle Promovierendenbefragung 2019, n = 20.563 zuletzt geprüft am: 01.07.2020

**Abb. B60: Anteil 25- bis 64-Jähriger mit Doktortitel an der altersgleichen Bevölkerung im internationalen Vergleich (in %)**



Quelle: OECD (2020): *Education at a glance 2020*, Paris