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### Introduction

Social and educational inequality is a widely discussed phenomenon which does not stop at the borders of universities.

Worries about a shortage of young researchers, skill shortage in the STEM disciplines as well as wasted potentials due to effects of students social origin.

Beyond rational arguments: Equal opportunities irrespective of social origin and irrespective of social, political or economic demands.

→ Illusion of equality of opportunities (Bourdieu & Passeron 1971)

### Results

**Highly selective sample:** 70% (natural sciences) and 81% (medicine) of the respondents stem from a family in which at least one parent has a higher secondary degree (A levels, German Abitur) or a higher degree. → Indication for secondary effects of stratification

Effects of stratification (Figure 1, Table 1):

Only **small total effects of SES** on success:

- The higher SES the more articles were published during doctorate → indication for effects of cultural capital

**No effect of migration background** on success

Pronounces **gender effects** on success:

- Men publish more articles during doctorate
- Men finish their doctorate with a better grade
- Men are more satisfied with the results of their doctorate

Structured doctorate as moderator:

- No effects of **structured doctorate** on the effects of SES

Versatile **effects of SES** on funding and employment during doctorate (Table 2)

**Research related** employment/funding promotes success

**Non-scientific** employment decreases success

### Conclusion

- High degree of selection before doctorate
  - Primary measures to reduce stratification before doctorate
- Only small effects of stratification
  - Likely due to a lack of cultural capital
- Funding and employment
  - Extension of research-close funding and employment opportunities to improve results of doctorate
- Further research:
  - Focus on gender and discipline
  - Elaborate the effects of cultural capital and habitus

### Aim

Aim of our research is to illustrate:

- Selectivity of doctoral education in life sciences
- Unveil effects of stratification on the success of the doctorate
- Show in how far structured models of doctoral training can moderate the effects of stratification

### Theory

- Primary and secondary effects of stratification (Boudon 1974)
- Supplemented by Bourdieu (1990, 1992, 1996): economic and cultural capital, habitus
- Primary effects of stratification:
  - Lack of economic and cultural capital
  - Less parental/familial support
  - Employment not related to doctorate
  - Decreased performance during doctorate
- Secondary Effects of stratification:
  - Transition from one to the next level of education
  - Rational assumptions of students and parents
  - Restricted by habitus: what is possible, what is plausible, what is unthinkable?
- Structure supposed to reduce non-meritocratic effects on outcome of doctorate

Figure 1: Effects of social stratification on success of doctorate

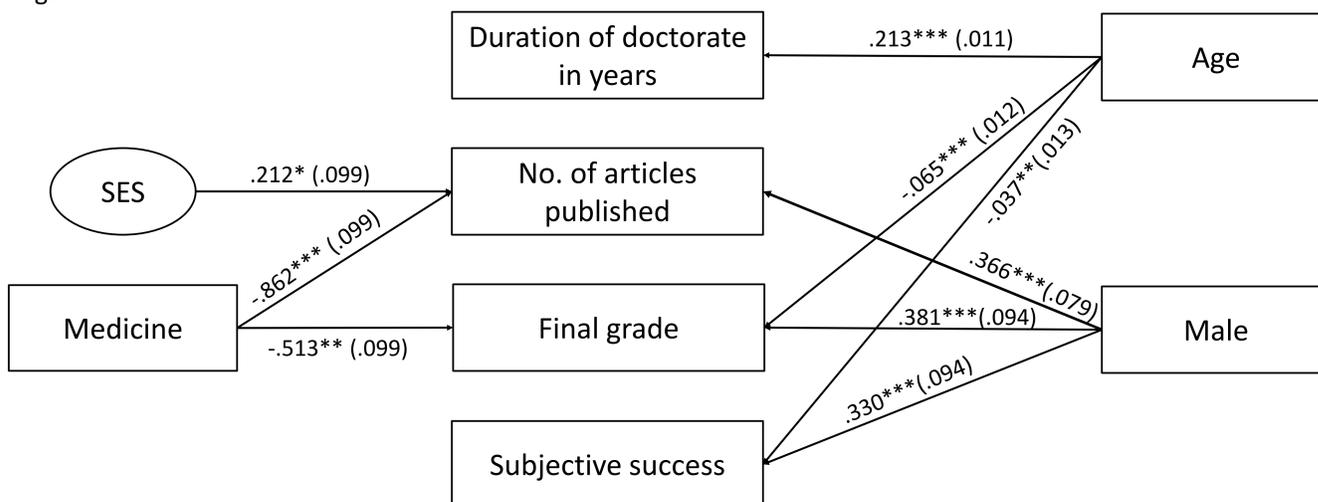


Table 1: Path analysis: Funding and success of doctorate – total effects

	Duration (years)	Articles published	Final grade	Subjective success
Research Associate	-0.428* (0.210)	0.466*** (0.127)	0.445** (0.151)	
Student assistant			0.294* (0.125)	
Scholarship		0.428*** (0.107)	0.610*** (0.127)	
Non-scientific employment	0.711*** (0.144)		-0.225* (0.114)	-0.318** (0.119)
Parents/relatives	0.509** (0.147)			
Partner/spouse	-0.517* (0.247)			
Unempl. benefit/student loan	0.382† (0.208)		-0.266† (0.142)	
R <sup>2</sup>	0.283	0.264	0.386	0.347

Notes: only significant effects shown; \*\*\* p<0.001; \*\* p<0.01; \* p<0.05; † p<0.1. Unstandardized coefficients, standard error in parenthesis. All coefficients estimated in one path model. N= 945; Variable in the model: SES, SES<sup>2</sup>, migration background, structured doctorate, discipline, gender, age, success of doctorate

Table 2: Path analysis: SES and funding of doctorate– direct effects

	Research associate	Student assistant	Scholarship	Non-scientific occupation	Parents/relatives	Partner/spouse	Unemployment benefit/student loan
Socio-economic status	1.260	0.601*	0.543*	1.178	1.718†	2.783*	0.482*
SES <sup>2</sup>	0.918	1.028	0.995	0.968	0.791*	1.079	0.854
Pseudo-R <sup>2</sup>	0.552	0.077	0.166	0.373	0.472	0.134	0.088

Notes: \*\*\* p<0.001; \*\* p<0.01; \* p<0.05; † p<0.1. Odds ratios. All coefficients estimated in one path model. N= 945; Variable in the model: SES, SES<sup>2</sup>, migration background, structured doctorate, discipline, gender, age

### Methods

- Standardized questionnaire
- Doctoral graduates from medical or biological departments in Bavaria, North Rhine-Westphalia and Saxony (N=945)

Socio-economic status (SES)

- Highest formal education of father and mother
- Occupational position of father and mother
- Quantified via multiple correspondence analysis (MCA)

Multivariate analysis: path analysis

### References

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