Previous Interactions Matter: Exploring the Link between Advisors' Reasons to Supervise and Doctoral Student Outcomes

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The study was prepared within the framework of the project "Transformation of doctoral education in China and Russia" of the program "International academic cooperation" at HSE University.

Introduction

- Supervision quality strongly predicts publications, completion, and satisfaction (Bao et al., 2018).
- Early stages of the supervisor-student relationship are understudied — especially supervisors' reasons to accept a doctoral student.
- Many systems are shifting from a master-apprentice model to distributed support and team supervision; Russia largely retains the single-supervisor model (Terentev & Kuznetsov, 2024).

Research questions

How do supervisors' motives to supervise relate to

1. students' difficulties with the supervisor?
2. supervisors' satisfaction?
3. on-time thesis defence?

Previous research

- Doctoral students' choice of supervisors is linked to both satisfaction with the supervisor and confidence in the future defence (Pavliuk & Zhuchkova, 2025).
- Supervisors based decisions on topic alignment, doctoral student motivation/skills, and constraints/incentives (Barnes & Austin, 2009; Joy et al., 2015).

The gap

1. Links to potential outcomes are weakly evidenced.
2. The role of supervisors' motives onto mapping doctoral students' outcomes (satisfaction, defence).

Two systems

Student-driven

— doctoral students select their supervisors on their own

— faculty members either accept or decline

(Zhao et al., 2007)

Department-assigned

— supervisor is appointed by the department at the time of admission to the doctoral program

(Joy et al., 2015)

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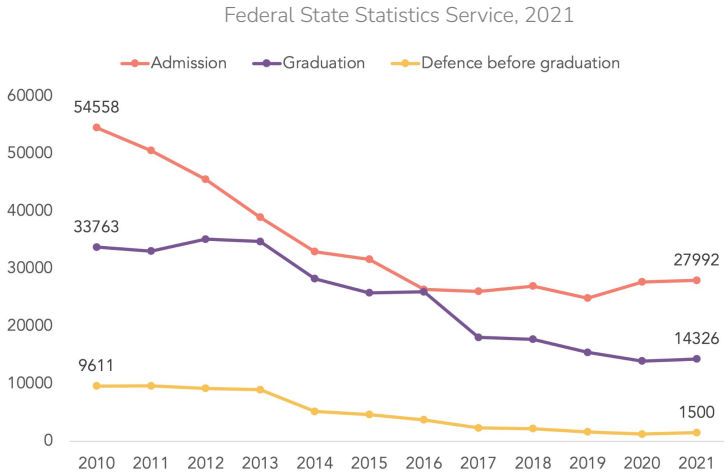
Doctoral supervision in the Russian context



- Twofold reduction in graduate numbers
- Threefold reduction in defended graduates
- **Poor supervision as a key factor**

Despite a formal shift to structured programs in 2012–2013, supervisors remain the primary guides with high authority.

Empirical findings: ~16% of supervisors perform no supervisory functions; team supervision is rare; improvements in supervision quality are rarely prioritized.

Causes include supervisors' workload, lack of professional development, and insufficient incentives.

Data

Dyadic CAWI surveys

- 2018/2019 academic year
- 6 Russian universities
- matched supervisor-student pairs
  N = 313

Independent defence data

web-scraped from the Higher Attestation Committee

Sample

- 55% female doctoral students
- 78% full-time doctoral students
- broad field spread
- supervisors, on average, were supervising 3 doctoral students

Outcomes

15%

of doctoral students had difficulties with supervisor

84%

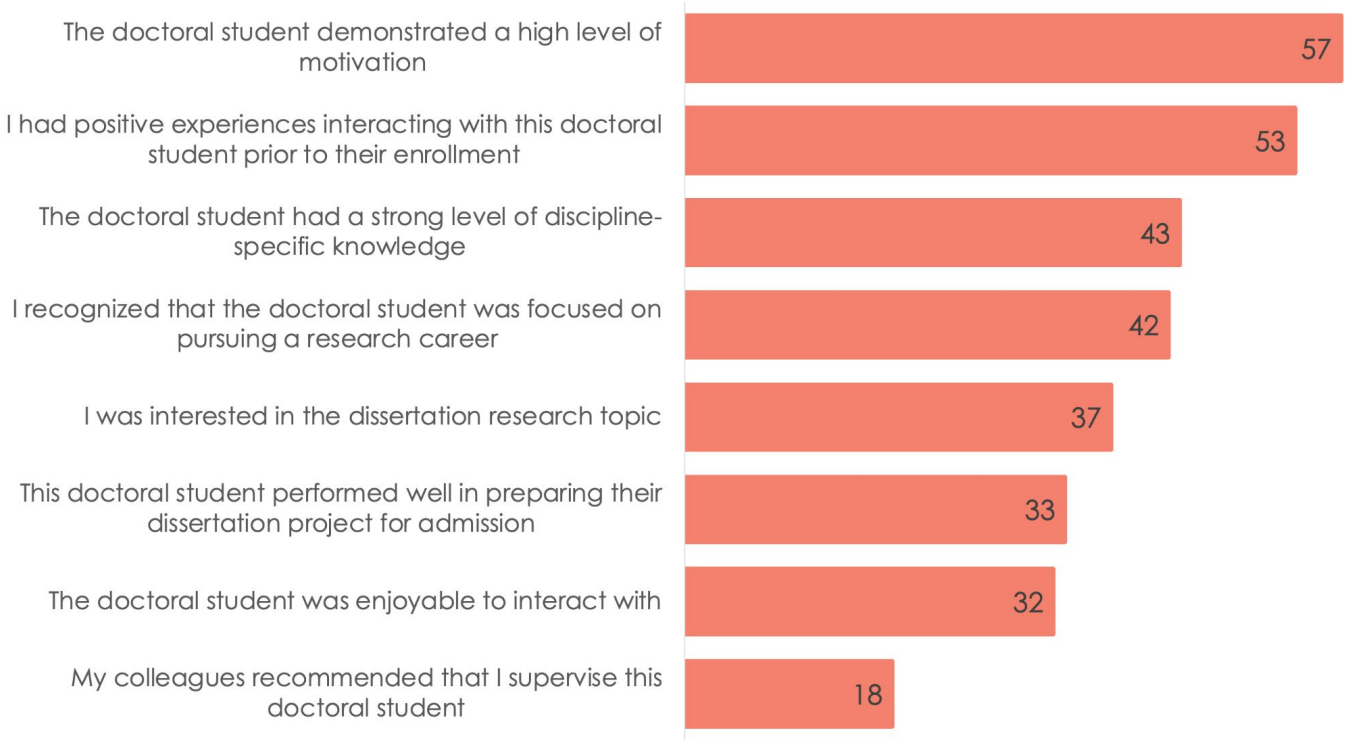
of supervisors satisfied with their doctoral students

12%

of doctoral students defended dissertations by Sep 2024*

*aligns with national rates

Reasons to supervise, %



Supervisors' survey
N = 313

Methods

PCA on the tetrachoric correlation matrix

- highlighted the key components of motives since variables were presented as binary ones (Revelle, 2022)
- calculated component scores for each participant, which estimates scores by regressing observed variables on their loadings to maximize the correlation between the estimated scores and the true latent factors
- the model explained 74% of variance

Three logistic regressions

- (1) difficulties, (2) supervisor satisfaction, (3) defence
- clustered standard errors at supervisor ID
- controlled for employment, motives, year, mode, funding, field, sex, supervisor performance, etc.

Supervisors' motives

	Positive prior interactions	Colleagues' recommendations	Interest in research topic	Student's research commitment
I was interested in the dissertation research topic	0.206	-0.002	**0.91**	0.077
My colleagues recommended that I supervise this doctoral student	0.087	**0.909**	-0.031	-0.279
I had positive experiences interacting with this doctoral student prior to their enrollment	**0.687**	**-0.569**	-0.103	-0.214
This doctoral student performed well in preparing their dissertation project for admission	**0.855**	0.007	0.25	-0.111
The doctoral student demonstrated a high level of motivation	0.228	0.09	0.131	**0.595**
The doctoral student had a strong level of discipline-specific knowledge	**0.427**	0.088	-0.345	**0.442**
The doctoral student was enjoyable to interact with	**0.736**	0.11	0.057	0.131
I recognized that the doctoral student was focused on pursuing a research career	-0.178	-0.257	0.082	**0.918**

Results (1)

Binary logistic regression: **facing difficulties in interaction with a supervisor, yes/no**

Variable	Exp(B)	SE
Intercept	0.069*	1.11
Positive prior interactions	0.333***	0.327
Colleagues' recommendations	0.962	0.164
Interest in the research topic	0.785	0.195
Student's research commitment	0.599*	0.213
*Other [control] variables**		
Observations	313	
Nagelkerke R^2	0.235	

*Note: * p < 0.05, ** p < 0.01, *** p < 0.001*

* (1) Doctoral student's field of study, (2) doctoral student's sex, (3) year of study, (4) year of study, (5) form of study, (6) doctoral student's employment status, (7) form of financing, (8) supervisor's performance

Results (2)

Binary logistic regression: **supervisor satisfaction, yes/no**

Variable	Exp(B)	SE
Intercept	23.281**	1.086
Positive prior interactions	2.58**	0.294
Colleagues' recommendations	**0.58****	0.2
Interest in the research topic	1.191	0.197
Student's research commitment	3.14***	0.308
*Other [control] variables**		
Observations	313	
Nagelkerke R^2	0.365	

*Note: * p < 0.05, ** p < 0.01, *** p < 0.001*

* (1) Doctoral student's field of study, (2) doctoral student's sex, (3) year of study, (4) year of study, (5) form of study, (6) doctoral student's employment status, (7) form of financing, (8) supervisor's performance

Results (3)

Binary logistic regression: **a doctoral student defended a thesis on time, yes/no**

Variable	Exp(B)	SE
Intercept	0.179	1.184
Positive prior interactions	1.887**	0.225
Colleagues' recommendations	1.081	0.236
Interest in the research topic	1.098	0.256
Student's research commitment	1.397	0.231
*Other [control] variables**		
Observations	313	
Nagelkerke R^2	0.278	

*Note: * p < 0.05, ** p < 0.01, *** p < 0.001*

* (1) Doctoral student's field of study, (2) doctoral student's sex, (3) year of enrollment, (4) year of study, (5) form of study, (6) doctoral student's employment status, (7) form of financing, (8) supervisor's performance

Main findings

- The only factor that remains significant across all of the models is the decision to supervise a doctoral student based on positive prior interactions.
- Strong motivation from doctoral students cannot compensate for a lack of prior working experience with a supervisor.

Discussion

Core implication

Early, substantive supervisor-student interactions (e.g., prior collaboration) pay off across process and outcome measures in a master-apprentice setting.

Policy/practice

Encourage pre-PhD collaboration pipelines (e.g., RAships, thesis advising, lab internships). Expand integrated master-doctoral tracks / longer candidacy windows where feasible.

Limitations

Single-country design; non-anonymous surveys; over-representation of some doctoral student groups; observational design (no causal identification).

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