The Teacher-Student Register and the National Well-being Survey

Linking Education Data Within and Across Fields

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Education Data in Denmark

- My research area: Social inequality (education, child development, nurture and nature)
  - Economics overlapping with sociology, psychology, biology
  - Need for multifaceted data!

- The education system is high on the political agenda
  - Is there a well-being crisis?
  - Do schools reduce the influence of socioeconomic background?

- Unique richness of information about Danish elementary schools
  1. Objective information about students, teachers and classrooms
  2. Survey about teacher behavior, student development and well-being
  3. Plus additional data (test scores, absence etc.)

Linking data: Opportunity for novel research in education (and beyond)

The Student–Teacher Register (UDDLAERER/LER)

UDDLAERER (2013-)

https://www.dst.dk/extranet/ForskningVariabellister/Registerhistorik/UDDLAERER.html

- Links individual students to teachers and classrooms
- Enables us to:
  - Quantify interactions between students and teachers throughout elementary school
  - Measure number of hours by teacher and subject
  - Relate student and teacher characteristics to PNR (e.g., teacher qualifications, socioeconomic background)

LER (2020-) *https://www.dst.dk/da/Statistik/dokumentation/Times/uddannelsesdata/ler-grundskole*

- Contains information at the specific lesson/class level
- Enables identification of:
  - Exact daily schedule
  - Description of activities
  - Participation by teacher (e.g., regular, substitute)

The National Student Well-Being Survey

WBS (2015-) *https://uvm.dk/grundskole/folkeskolen/skoleudvikling/trivselsmaaling/*

- Yearly survey of all public school children (grades 0-9)
- 20/40 questions on a 3/5-point Likert scale measuring:
  - Well-being (academic/social)
  - Socio-emotional skills / personality traits
  - Teacher practices
  - Peer relations

Examples (5=Very Often, 1=Never):

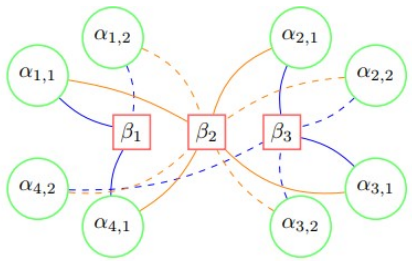
- Mental health: "Do you feel lonely?"
- Conscientiousness "How often can you complete what you commit yourself to?"
- Classroom management: "If there is noise in the classroom, teachers can quickly establish quietness."
- Bullying: "Have you bullied anyone during this school year?"

Linking Registers Within and Across Domains

- Combining these different data paints a uniquely broad picture of education in Denmark
- At the same time, the information goes way beyond education research, e.g.:
  - *Mental health* broadly captured by school survey data, psychiatric diagnoses, prescription data etc.
  - *Behavioral outcomes* such as bullying, externalizing behavior, illegal absence, crime
- At a more general level, it is also obvious to study how educational inequality relates to differences in, e.g., *health, labor market outcomes, family background*

Example 1: Teachers, Sorting and Inequality

- Various challenges related to measuring *teacher value-added* (TVA)
- Why are some teachers more effective at increasing student performance?
- How do schools/teachers affect social inequality?



(c) Network with subject variation & year specific student effects

Table 5: Variance Decomposition - Disentangling Within and Between School Components

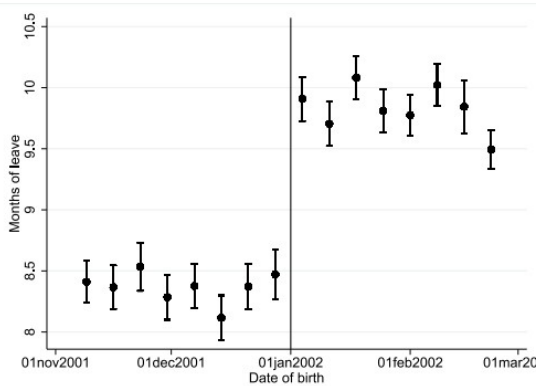
	(1) Student-related	*(2)* Teacher-related	*(3)* Sorting
Between-School	$\mathbb{V}ar(\bar{\alpha}_k)$ **[0.0599]**	$\mathbb{V}ar(\bar{\psi}_k)$ **[0.0237]**	$\mathbb{C}ov(\bar{\alpha}_k, \bar{\psi}_k)$ **[-0.0099]**
Within-School	$\mathbb{V}ar(\alpha_{gt} - \bar{\alpha}_k)$ **[0.5969]**	$\mathbb{V}ar(\psi_j - \bar{\psi}_k)$ **[0.0835]**	$\mathbb{C}ov([\alpha_{gt} - \bar{\alpha}_k], [\psi_j - \bar{\psi}_k])$ **[-0.0515]**

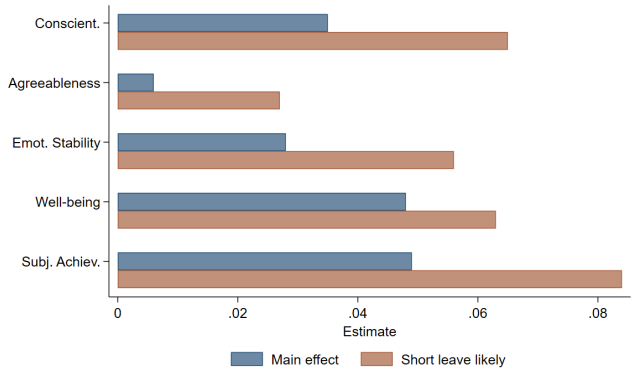
Linking the student-teacher register to other data, we show that (Houmark and Mørk 2026)

- *National tests*: Schools compensate by allocating high-TVA teachers to low-performing classes
- *Education registry*: More experienced teachers and teachers with better college grades add more value
- *Well-being survey*: High TVA-teachers are particularly good at classroom management

Example 2: Parental Leave Reform

- Natural experiment: Increased duration of paid leave for children born after 1st of January 2002 (RD design)
- Early childhood is a critical period for parental investments
- Little evidence of effects on achievement, but what about "soft" outcomes?





Need to combine data from birth and labor market registers to measure leave. Then we show that the length affects: (Houmark et al., 2024)

- Psychological traits (conscientiousness, emotional stability, well-being)
- Behavior (absence)
- Risk of psychiatric diagnosis (ADHD, OCD)

Other Research Questions

- Maybe even bigger potential in combining this data with more "specific" sources?

- Going even broader?
  - E.g., genetic information: How does nurture and nature interact in producing socioeconomic (educational) inequality?
- Or zooming even more in?
  - E.g., classroom network structure: How do the relationship between peer groups (and teachers) affect social well-being?

Conclusion

Take-home messages:

- Information about Danish elementary school is unrivaled, both in terms of scope and level of detail
- Linking both objective and subjective data to other registers enables innovative interdisciplinary research
- Strong potential for answering policy-relevant causal questions

Questions?