How Families Sort into Neighborhood-School Structures and their Impact on Primary School Outcomes

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BACKGROUND

- Neighborhoods and schools jointly shape educational outcomes
- Residential and school *selection* are intertwined,[1] yet research on contextual *effects* typically treats selection as an identification issue rather than a topic of substantive interest[2]
- We explicitly integrate contextual selection into the study of contextual effects

▼ RESEARCH QUESTION ▼

How do families sort into neighborhood-school structures, and how does this shape children's educational outcomes?

DATA

Register data: Netherlands Cohort Study on Education (NCO)[3] and other microdata

Sample criteria
- Primary school entry cohorts 2010-201
- Residents of Amsterdam, Rotterdam, the Hague or Utrecht at school entry (~25%)
- First-born children (~45%)
- Lived with both parents or mother until school entry (~90% of first-borns)
- Moved between 2 years before childbirth and school entry (~68% of families)

Sample size: 21,937 students/families
→ Amsterdam: 7,274; Rotterdam: 5,367; The Hague: 5,270; Utrecht: 4,026

METHODS

1. Neighborhood selection models [4,5]
- Method: conditional logit models
- Key predictor: Local school "quality" – mean share of pre-university students in all nearby schools
- Controls related to *housing* (e.g., mean property value), *amenities* (e.g., distance to public green space) and *demographics* (e.g., share of residents with minority background)
→ Used to derive 'school factor': contribution of local school supply to residential choice

2. Contextual 'effects' models
- Method: multilevel regression models
- DV: track recommendation, from practical education (1) to pre-university (6)
- IVs: school factor (from selection model), school quality and family-level controls
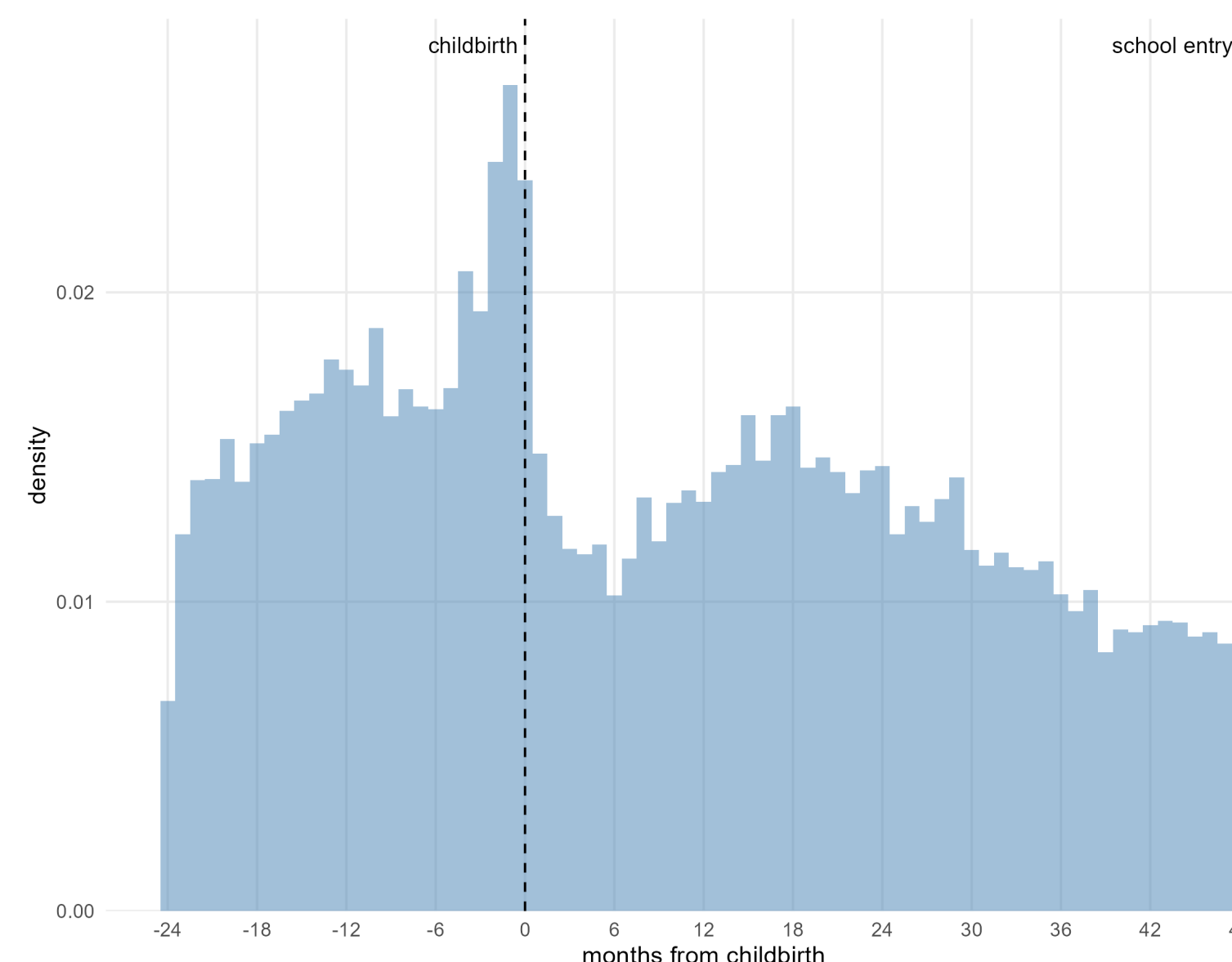
RESULTS

◄ FIG 1: Timing of residential moves
- 68% of families **moved**: 28% before and 40% after childbirth → confirms prior research on childhood mobility
- Most moves were **short distance** (median = 3.4 km); 62% within municipality, but distances varied (SD = 18 km)

▼ FIG 2: Neighborhood-school sorting
- Families with **higher incomes**, **university education**, and **non-minority backgrounds** were more likely to move to neighborhoods with **higher-quality/reputation schools**
- These associations **weaken yet persist** once other neighborhood features are added
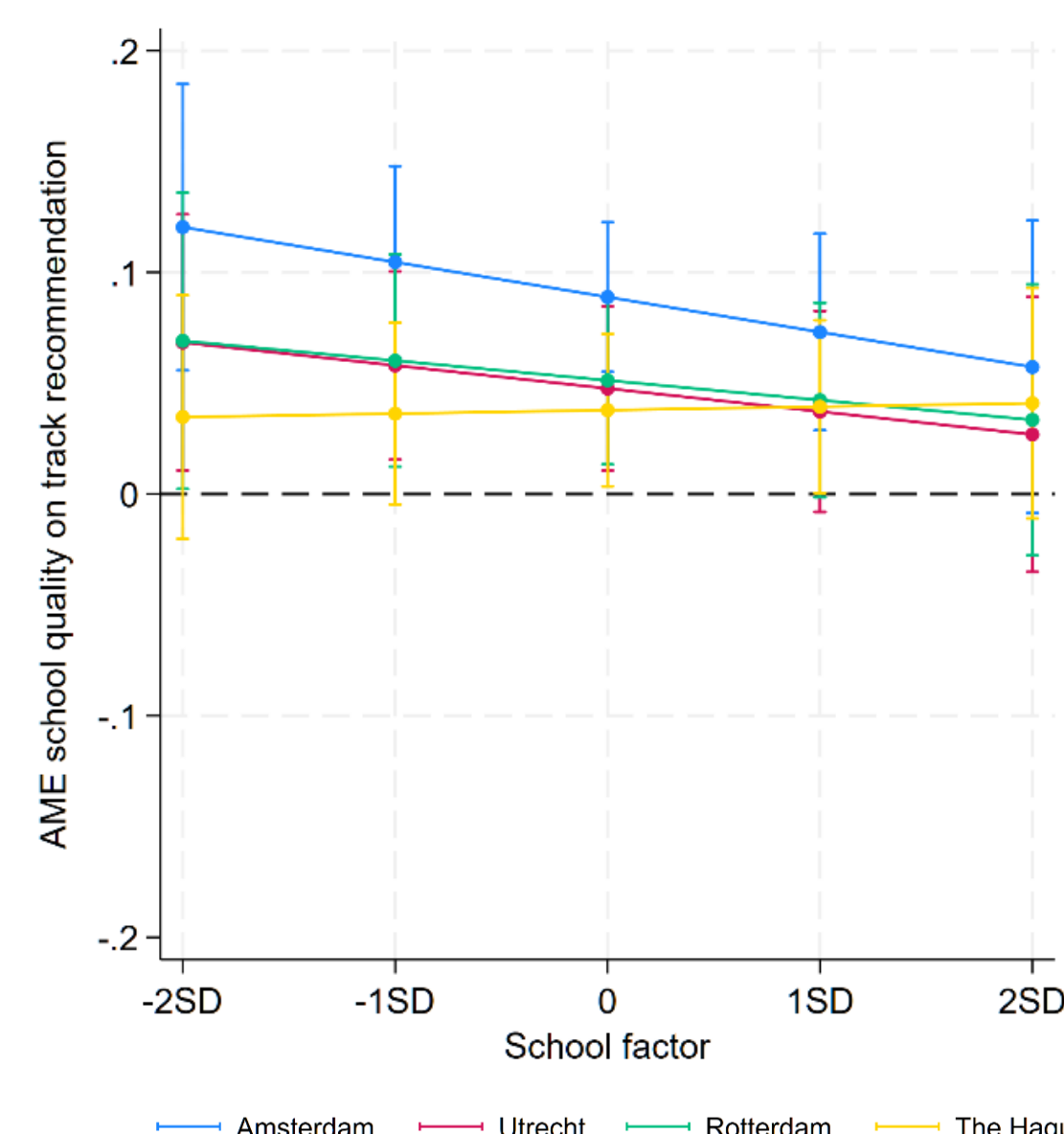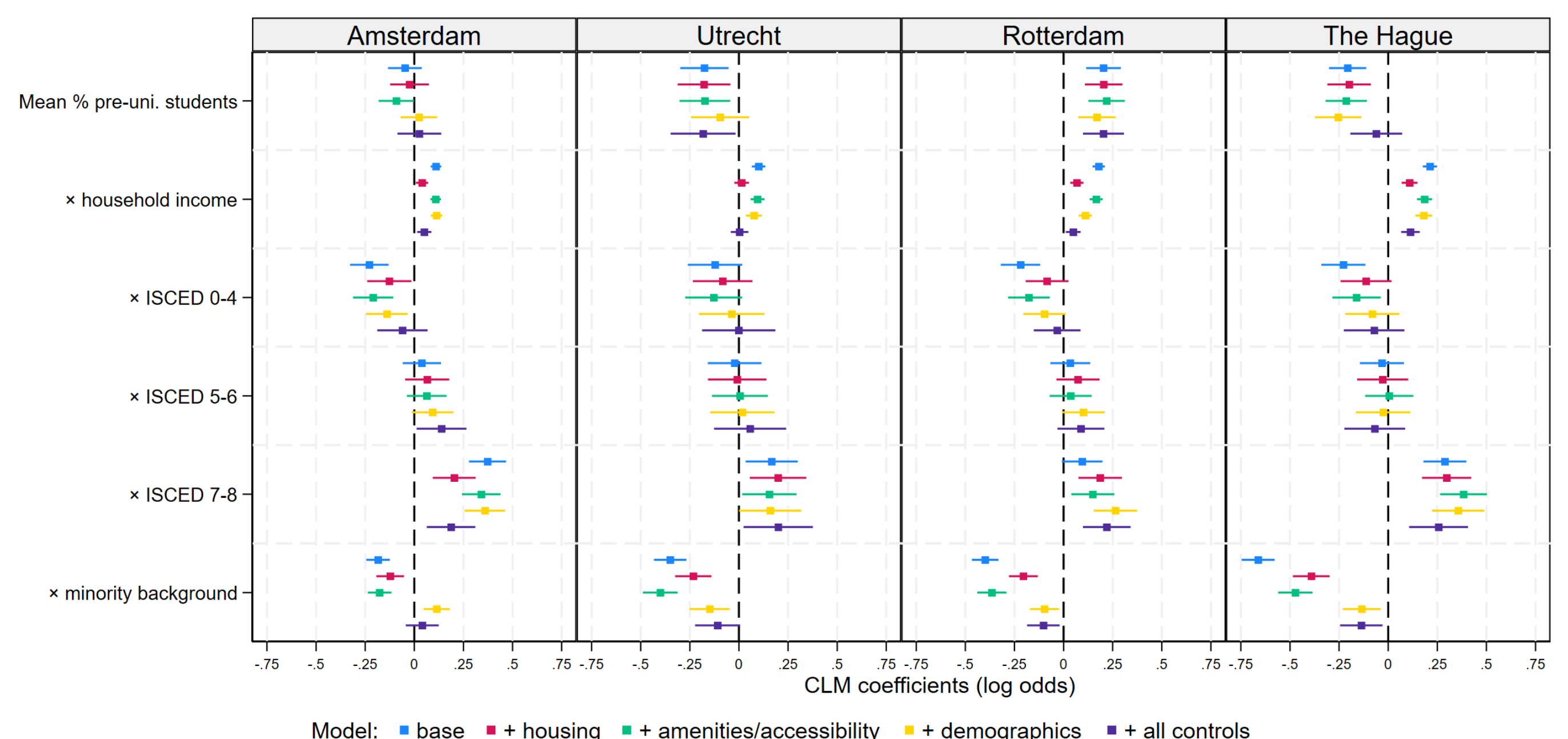- Results are quite **consistent across regions**

◄ FIG 3: Estimated contextual effects in education
- Average marginal effects of school quality on track recommendation do not vary by the school factor
- No independent effect of school factor → track recommendation

▼ PRELIMINARY CONCLUSION ▼

- Advantaged families are slightly more likely to sort in neighborhoods with higher-quality schools, net of other neighborhood characteristics (c.f.[6])
- No evidence that (contextual effects on) educational outcomes depend on whether parents (can) consider school supply in residential choices
- Next: sensitivity analyses + modeling school choice?

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