

# Project Outline - Data Analysis Using R

Impact of school index on housing prices in NRW

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2025-12-03

## Findings from literature

- Many papers suggest that there is a connection between school performance or school quality and housing prices as parents value the education of their children (see Machin 2011).
- Given the broader interest in how school-related factors shape local housing markets, we focus specifically on the role of the school social index.

## Research question

How does the social index of schools influence housing prices, and does the proximity to schools modulate this effect in urban areas?

## Usage of available data

- We are planning to use the cross-sectional real-estate dataset from the RWI as well as the general school and -index dataset.
- Panel data will not be used since school and index data is only available for one year.

# Empirical approaches in the literature

In their paper (Black and Machin 2011) identified six main approaches to analyze the relationship between school characteristics and housing prices:

- ① Regression based estimates
- ② Parametric and non-parametric modelling of unobservable factors
- ③ Instrumental variables approaches
- ④ Discontinuity methods using administrative boundaries
- ⑤ Difference-in-difference, repeat sales and quasi-experimental methods
- ⑥ Combined methods

## Shortcomings of our empirical strategy

- A regression-based hedonic model in the housing context might be prone to certain endogeneity problems due to omitted variables.
- A reason for that is the extensive scope of relevant housing characteristics and demographic features

*Source: Machin (2011)*

## References

- Black, Sandra E., and Stephen Machin. 2011. "Housing Valuations of School Performance." *Handbook of the Economics of Education* 3: 485–519.  
<https://doi.org/10.1016/B978-0-444-53429-3.00010-7>.
- Machin, Stephen. 2011. "Houses and Schools: Valuation of School Quality Through the Housing Market." *Labour Economics* 18 (6): 723–29. <https://doi.org/10.1016/j.labeco.2011.05.005>.