How money buys skills – Testing the mediators between parents’ wealth and children’s competence among pre-schoolers in Germany

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SLLS Conference, Potsdam, 26.09.2019
Motivation

Growing evidence of disparities in children’s competence and performance in school by parental wealth (Elliott & Sherraden 2013; Hällsten & Pfeffer 2017; Wiborg 2017)

Sweden, 9th grade:

Germany, elementary school:

Hällsten & Pfeffer (2017, p. 343)

Dräger & Müller (in preparation)
Research Question

How does parental wealth increase children’s competence?
Theoretical Model

Hypotheses:
- Positive Effect
- Negative Effect

Family Investment

Neighborhood

Pro-educational Norms

Parental Stress

Parenting

Skills

Income

Wealth

„Family Stress Model“
Data & Variables

- NEPS, starting cohort Newborns
  - N=1,923
- Dep. Var.: Scientific competence (z-standardized) at age 5
- Indep. Vars.:
  - Net Worth of Household (Categories)
  - Equivalized Household Income (Categories)
- Control variables:
  - Parents’ education, occupational class, age, migration status, employment status, family status, child’s age & gender, siblings, federal state.
## Operationalization of Mediators

<table>
<thead>
<tr>
<th>Construct</th>
<th>Sub-dimensions</th>
<th>Measures</th>
<th>No. Items</th>
<th>Wave of measurement</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Investment</strong></td>
<td>Materials</td>
<td>Number of children’s books</td>
<td>1</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td>Paid-for activities</td>
<td>Frequency visiting zoo, museum...</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td><strong>Neighborhood</strong></td>
<td>Composition</td>
<td>Rate of unemployment, share of academics...</td>
<td>8</td>
<td>1</td>
</tr>
<tr>
<td><strong>Norms</strong></td>
<td>Norms &amp; Aspiration</td>
<td>Generalized attitudes towards education, idealistic aspirations</td>
<td>6</td>
<td>4</td>
</tr>
<tr>
<td><strong>FSM: Parental Stress</strong></td>
<td>Emotional Stress</td>
<td>Depressive Feelings, Loneliness...</td>
<td>4</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>Marital Conflict</td>
<td>Discussions, Opinion Differences...</td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td><strong>FSM: Parenting</strong></td>
<td>Interaction Quality</td>
<td>Video-taped interaction</td>
<td>4</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Involved Parenting</td>
<td>Joint-activities (e.g., read out)</td>
<td>5</td>
<td>3</td>
</tr>
</tbody>
</table>
Competence Gap by Parents' Wealth

Estimates of OLS & 95% Confidence Intervals. Data: NEPS - Newborns (SC1). Including all control variables.
Results

Income

Wealth

Reference: negative net worth

Family Investment

Neighborhood

Norms

Parental Stress

Parenting Quality

Skills

NEPS SC1.
N=1,923.
Significance Levels:
* p<0.05
+ p<0.10
Results

Income

Wealth

Reference: below poverty threshold

Reference: negative net worth

Family Investment

Parental Stress

Parenting Quality

Neighborhood

Norms

Skills

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Results

Income

Wealth

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Reference: negative net worth

Family Investment

Neighborhood

Norms

Parental Stress

Parenting Quality

Skills

- .11/-12
- .02/-0.09
- .08/.04
- .31*/.52*
- .09/.16+
- .16+.13
- .27*/.30*

.14*

.03

.03

.11*

- .06

NEPS SC1.
N=1,923.
Significance Levels:
* p<0.05
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## Mediated Effects

<table>
<thead>
<tr>
<th></th>
<th>Total Gap</th>
<th>Neighborhood</th>
<th>Family Stress</th>
<th>Norms</th>
<th>Investment</th>
<th>Sum of mediators (Proportion of total gap)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>HH Income (% of median)</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Below 60 %</td>
<td>(0.158^+)</td>
<td>(0.010)</td>
<td>(-0.000)</td>
<td>(-0.001)</td>
<td>(0.038)</td>
<td>(0.048^+ (30%))</td>
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<td>60 to 100 %</td>
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<td>(0.017)</td>
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<td><strong>Net Worth (EUR)</strong></td>
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<td></td>
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<td></td>
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<td></td>
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<tr>
<td>Negative</td>
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<td>(0.001)</td>
<td>(-0.002)</td>
<td>(0.023)</td>
<td>(0.019 (19%))</td>
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<tr>
<td>0 to 50,000 EUR</td>
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<td>(0.005)</td>
<td>(0.001)</td>
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NEPS SC1. N=1,923. Significance Levels: * \(p<0.05\); + \(p<0.10\).
# Mediated Effects

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NEPS SC1. N=1,923. Significance Levels: * p<0.05; + p<0.10.

Reasons for difference to total gap:
1. Measurement error
2. Other mediators
3. Unobserved confounders (→ Total gap biased; mediated effects causal?)
Conclusion

- Small but distinct association between parents’ wealth and children’s skills at age 5
- Mediators explain $\frac{1}{5}$ of differences by wealth & $\frac{1}{3}$ to $\frac{1}{2}$ of differences by income:
  - Investment is the most important mediator
  - Minor role of neighborhood and family stress
  - No support for normative function of wealth
- Mediators probably depend on age of children
Thank you for your attention!

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Project website: https://www.gesis.org/projekte/parentalwealth/home/
Twitter: https://twitter.com/parentalwealth

Pre-registration of this paper: https://osf.io/hkx7t/

Funded by:

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[German Research Foundation logo]
Literature

Appendix
Exemplary Item Scientific Competence

This picture shows a young bird.

What do you think: which of the following birds could be its mother?

Please choose only one of the following pictures.

Measurement: Parental Stress

- Depressive Feelings
- Out of Energy
- Lonliness
- Restricted by Role of Mother

- Opinion Differences
- Discussions
- Backstabbing

Parental Stress

Emotional Stress

Marital Conflict

Correlation Coefficients:

- 0.74
- 0.71
- 0.57
- 0.67
- 0.78
- 0.88
- 0.62
Measurement: Parenting Quality

Parenting

Interaction Quality
- Sensitivity
- Positive Regard
- Emotionality
- Stimulation

Involved Parenting
- Read out
  - Poems, Songs, Rhymes
- Dealing with Letters
  - Painting, Drawing
- Dealing with Numbers
Measurement: Norms

- School as waste of time
- Shame without Abitur
- Snobbish
- Intellectual Horizon
- Cultural Life
- Abitur at any price
- Idealistic Aspirations
Measurement: Neighborhood

Neighborhood Composition:
1) Probability of default in payment
2) Probability of different milieus
3) Share of academics
4) Prevalence of consumer loans
5) Intesity of TV consumption
6) Index of purchasing power
7) Unemployment rate.

Child-friendly Infrastructure:
1) Predominant type of houses
2) Type of street
3) Exclusive housing area
4) Type of area
Identification of the Causal Effect

Front-Door Adjustment  

Assumptions for causal interpretation:
1) U has no direct effect on M (U ⊥ M | T, Controls)
2) All relevant Ms are included in the model
Identification of the Causal Effect

Parents’ Cognitive and Non-Cognitive Skills

Parents’ Education, Occupation, Migration, Age...

Parents’ Financial Resources

FIM, FSM, Norms, Neighborhood

Child’s Competence

Child’s Age and Gender

Potential Bias
Distribution Financial Resources

**Net Worth:**
- Mean: 145,520 EUR
- Median: 50,950 EUR

<table>
<thead>
<tr>
<th>Category</th>
<th>Proportion</th>
</tr>
</thead>
<tbody>
<tr>
<td>Negative</td>
<td>11.1 %</td>
</tr>
<tr>
<td>0-50k</td>
<td>38.8 %</td>
</tr>
<tr>
<td>Above 50k</td>
<td>51.0 %</td>
</tr>
</tbody>
</table>

**Equivalized Household Income:**
- Mean: 1,815 EUR
- Median: 1,648 EUR

<table>
<thead>
<tr>
<th>Category</th>
<th>Proportion</th>
</tr>
</thead>
<tbody>
<tr>
<td>Below poverty threshold</td>
<td>10.1 %</td>
</tr>
<tr>
<td>Above poverty threshold</td>
<td>33.4 %</td>
</tr>
<tr>
<td>Above median</td>
<td>55.5 %</td>
</tr>
</tbody>
</table>
Differences in Mediators by Wealth

Data: NEPS - Newborns (SC1). Multiple Imputed (M=20).