Getting to the bottom of the bathtub: Using survey data to trace the mechanisms behind macro-level causal effects

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1. The original (aggregate level) study

2. Tracing the mechanism using survey data
   - Theory
   - Survey Data
   - Replicating results
   - Tracing the mechanism

3. Conclusions
The original study

- An aggregate level study on the effects of concurrent second-order elections (CSOE) on turnout.
- State (*Bundesland*) and local level

Survey data for mechanisms
The original study II

- Difference-in-differences design
- $Y^{EP} - Y^{BTW} = \beta_0 + \beta_1 D + \epsilon$

<table>
<thead>
<tr>
<th></th>
<th>(1) FE</th>
<th>(2) DiD</th>
<th>(3) DiDiD</th>
<th>(4) DiDiD09-14</th>
</tr>
</thead>
<tbody>
<tr>
<td>Local</td>
<td>0.135***</td>
<td>0.138***</td>
<td>0.124***</td>
<td>0.0977**</td>
</tr>
<tr>
<td></td>
<td>(0.0268)</td>
<td>(0.0161)</td>
<td>(0.0201)</td>
<td>(0.0294)</td>
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<tr>
<td>Land</td>
<td>0.145***</td>
<td>0.0944</td>
<td>0.123***</td>
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<tr>
<td></td>
<td>(0.0262)</td>
<td>(0.0825)</td>
<td>(0.0205)</td>
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</tr>
<tr>
<td>Intercept</td>
<td>0.638***</td>
<td>-0.312***</td>
<td>-0.233***</td>
<td>-0.309***</td>
</tr>
<tr>
<td></td>
<td>(0.0172)</td>
<td>(0.0100)</td>
<td>(0.0145)</td>
<td>(0.0152)</td>
</tr>
<tr>
<td>State Fixed-Effects</td>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Year Fixed-Effects</td>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>N</td>
<td>110</td>
<td>110</td>
<td>110</td>
<td>32</td>
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Standard errors in parentheses
* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$
The original study V

| Turnout |
|-----------------|-----------------|
| Mayoral         | 11.046*** (0.685) |
| District Admin  | 1.828** (0.772)   |
| District Admin × Mayor | −3.513*** (1.105) |
| Constant        | −26.803*** (0.462) |

Observations 416  
R² 0.450  
Adjusted R² 0.446  
Residual Std. Error 5.466 (df = 412)  
F Statistic 112.371*** (df = 3; 412)

Note: *p<0.1; **p<0.05; ***p<0.01

Expected Turnout Differences

<table>
<thead>
<tr>
<th>Density</th>
<th>%–points</th>
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<tr>
<td>None</td>
<td>−26.8</td>
</tr>
<tr>
<td>D. Admin</td>
<td>−25</td>
</tr>
<tr>
<td>Both</td>
<td>−17.4</td>
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<tr>
<td>Mayor</td>
<td>−15.8</td>
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</table>
Getting to the bottom of the bathtub


Survey Data

- For the state level: European Election Study 2014
  - post-election survey with 1648 respondents
  - respondents matched into federal states

- For the local level (Lower Saxony): MDEW study
  - two-wave panel with 814 (out of 1754) respondents participating in both pre- and post-election rounds
  - respondents matched into communities (Kreise) based on post code

- Respondents are asked about turnout, choice in EP elections and various standard questions

- Not asked about participation in local elections, nor importance they assigned to these elections
Empirics

- CSOE as key independent variable.
- Three approaches
  - Replication of original model
  - Alternative dependent variables
  - Cross-level interactions with individual level factors
- Dependent variables:
  - Turnout (mirroring original study DV)
  - Interest in EP elections
  - ...
- Macro-Micro Interactions
  - CSOE × Political Interest
  - ...
- Individual level controls: age, gender, income (e.g. rural constituencies are on average older than urban constituencies)
Turnout

- study is TSCS but surveys are only cross-sectional
- we cannot mimick the diff-in-diff setup
Replication: Turnout

(Intercept) \(-2.65 (0.31)\)*** 1.24 (0.43)**

elocal \(0.15 (0.11)\)

mayor \(0.40 (0.17)\)*

Num. obs. 1596 734

*** p < 0.001, ** p < 0.01, * p < 0.05
Indirect evidence that turnout increase due to EP unrelated factors

Importance Candidate
Importance Success Party
−0.07
−0.06

0.31
0.34
−1.18

Interest in EPE
Importance of EPE
Importance of EPE Result
0.31
0.34
−1.18
Campaign Effects?

Contacted by party

Predicted Probability

No CSOE

CSOE

Contacts by parties

Predicted Contacts

No CSOE

CSOE

Leininger, Rudolph, Zittlau

Survey data for mechanisms
CSOE × Interest in Politics

Leininger, Rudolph, Zittlau
Conclusions: Promises

- Validation by replication on individual level
- Tracing the mechanism
- Allowing for differential treatment effects across subpopulations
Conclusions: Problems

- Structure of individual data might not match aggregate data (TSCS vs. cross-section)
- Not enough power to test (aggregate level) treatment effect on individual level
- Survey might not capture concept of interest (surveys did not ask about local elections)
- Quality issues (overreporting of turnout)