A Validation Study on Voter Turnout Bias in Switzerland

Simon Hugi and Ben Jann

University of Bern, ben.jann@soz.unibe.ch

International Total Survey Error Conference
Baltimore, September 19–22, 2015
Outline

- Introduction
- Our study
- Results
- Conclusions
Introduction: Voter Turnout Bias in Switzerland

Source: Own calculations based on the most recent VOX dataset.
Introduction: Research Questions

- What are the mechanisms that lead to the observed turnout bias in Swiss voting and election studies?
- How much do the different mechanisms contribute to the total bias?
- Is it possible to reduce the bias by special questioning techniques or weighting schemes?
Introduction: Types of Biases

- **Undercoverage**
  - Sampling frames typically do not cover the whole population.
  - Political participation is likely to be lower among uncovered subpopulations (e.g., young people without landline) than among covered subpopulation, leading to a positive bias in survey estimates of voter turnout (Mokrzycki, Keeter und Kennedy 2009, Blumberg und Luke 2007)

- **Nonresponse**
  - Participation in surveys correlates with political interest and political participation (Voogt und Saris 2003, Jackman 1999, Brehm 1993).

- **Misreporting**
  - Due to social desirability (Tourangeau und Yan 2007) and recall errors (Belli et al. 1999), respondents tend to overreport their participation behavior.
Introduction: Types of Biases

Measurement

- Construct
- Measurement
- Response
- Edited response

Representation

- Target population
- Sampling frame
- Sample
- Respondents
- Postsurvey adjustments

Survey estimate

- Coverage error
- Sampling error
- Nonresponse error
- Adjustment error

Validity

Measurement error

Processing error

(Groves et al. 2009:48)
Our Study

- Voter turnout validation study comparing survey data to polling cards at a small municipality in Switzerland.

Polling cards
  - Federal votes of September 22 and June 9, 2013.
  - Citizens who took part in the votes can be identified from the collected polling cards.

Survey
  - Gross sample of 2000 citizens from the municipality’s register.
  - Net sample of 1696 (84.8%) citizens whose households could be found in the telephone register.
  - CATI survey between September 23 and October 20 with 893 respondents (52.7% of net sample).
  - Questions on: political interest, participation the votes, social desirability of voting, key indicators of political participation research, social demographics.
  - Wording experiment voting question.
Main Results: September 22 Vote

- Population: 59.2%
- Gross sample
- No telephone
- Net sample
- No interview
- Interviewed sample
- Self-report

Turnout (in percent):

- 0
- 5
- 10
- 15
- 20
- 25
- 30
- 35
- 40
- 45
- 50
- 55
- 60
- 70
- 80
- 85

Hugi/Jann (University of Bern)
A Validation Study on Voter Turnout Bias
Baltimore, 21.09.2015
Main Results: September 22 Vote

Population: 59.2% (N=4559)

Gross sample: 59.3% (N=2000)

Turnout (in percent):

0 5 10 15 20 25 30 35 40 45 50 55 60 65 70 75 80 85

Hugi/Jann (University of Bern)
Main Results: September 22 Vote

- Population: 59.2% (N=4559)
- Gross sample: 59.3% (N=2000)
- No telephone: 35.5% (N=304)
- Net sample: 63.4% (N=1696)

Turnout (in percent)

Turnout distribution across different samples.
Main Results: September 22 Vote

Population: 59.2% N=4559
Gross sample: 59.3% N=2000
No telephone: 35.5% N=304
Net sample: 63.4% N=1696
No interview: 53.1% N=803
Interviewed sample: 72.6% N=893

Turnout (in percent)
Main Results: September 22 Vote

<table>
<thead>
<tr>
<th>Category</th>
<th>Turnout (in percent)</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>Population</td>
<td>59.2%</td>
<td>4559</td>
</tr>
<tr>
<td>Gross sample</td>
<td>59.3%</td>
<td>2000</td>
</tr>
<tr>
<td>No telephone</td>
<td>35.5%</td>
<td>304</td>
</tr>
<tr>
<td>Net sample</td>
<td>63.4%</td>
<td>1696</td>
</tr>
<tr>
<td>No interview</td>
<td>53.1%</td>
<td>803</td>
</tr>
<tr>
<td>Interviewed sample</td>
<td>72.6%</td>
<td>893</td>
</tr>
<tr>
<td>Self-report</td>
<td>80.6%</td>
<td>893</td>
</tr>
</tbody>
</table>
Main Results: June 9 Vote

Population:
- 49.8% N=4459

Gross sample:
- 49.6% N=1966

No telephone:
- 27.5% N=289

Net sample:
- 53.3% N=1677

No interview:
- 43.8% N=792

Interviewed sample:
- 61.7% N=885

Self-report:
- 80.6% N=871

Turnout (in percent)
### Over- and Underreporting

#### September 22

<table>
<thead>
<tr>
<th>polling cards</th>
<th>did not vote</th>
<th>voted</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>– did not vote</td>
<td>69.6</td>
<td>30.4</td>
<td>100.0</td>
</tr>
<tr>
<td>– voted</td>
<td>0.4</td>
<td>99.6</td>
<td>100.0</td>
</tr>
</tbody>
</table>

(N = 893)

#### June 9

<table>
<thead>
<tr>
<th>polling cards</th>
<th>did not vote</th>
<th>voted</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>– did not vote</td>
<td>45.8</td>
<td>54.2</td>
<td>100.0</td>
</tr>
<tr>
<td>– voted</td>
<td>3.2</td>
<td>96.8</td>
<td>100.0</td>
</tr>
</tbody>
</table>

(N = 864)
Sociodemographic Profiles (September 22 Vote)

Average marginal effects from logistic regressions

<table>
<thead>
<tr>
<th></th>
<th>Undercoverage (N=1946, R²_{MF}=.262)</th>
<th>Nonresponse (N=1661, R²_{MF}=.014)</th>
<th>Overreporting (N=227, R²_{MF}=.044)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Female</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Age (ref = 18 – 34)</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>35 – 49</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>50 – 64</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>65 or older</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Marital status (ref = married)</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>single</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>divorced</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>widowed</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Household size (ref = 2)</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1 member</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3 members</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4 or more</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Single-family home</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Wealth (log/10)</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Income (log/10, equivalized)</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Determinants of Overreporting (September 22 Vote)

Political interest (1–5)
Party member
Left–right (0–10)
Voting is civic duty
Internal political efficacy (1–5)
External political efficacy (1–5)
Most people in own circle vote
People in own circle would not like it if I don't vote
Female
Tertiary education
Age (ref = 18 – 34):
  35 – 49
  50 – 64
  65 or older

Average marginal effects (N=183, $R^2_{MF}=.139$)
Wording Experiment

- The sample was randomized into a control group and a treatment group.
- The control group received a standard voting question.
  - „How about you, did you vote or not?“
- The treatment group received a modified voting question intended to minimize social-desirability bias and recall errors.
  - „Please try to remember whether you read the voting documents and whether you voted in person or by mail. Which of the following statements does apply to you?“
    - I did not vote.
    - I thought about voting, but did not.
    - I usually vote, but did not this time.
    - I am sure I did vote.
Wording Experiment: Results

![Bar chart showing voter turnout for September 22 and June 9 votes with and without treatment controls and polling cards vs. self-report methods.](image-url)

- **September 22 vote**
  - Control: Polling cards - 75%, Self-report - 80%
  - Treatment: Polling cards - 80%, Self-report - 85%

- **June 9 vote**
  - Control: Polling cards - 65%, Self-report - 70%
  - Treatment: Polling cards - 70%, Self-report - 75%
Wording Experiment: Results

September 22 vote

Control  | Treatment
---      | ---
25       | 35

June 9 vote

Control  | Treatment
---      | ---
30       | 50

Bias    | Overreporting | Underreporting
---      | ---           | ---
20       | 10            | 5

Hugi/Jann (University of Bern)

A Validation Study on Voter Turnout Bias

Baltimore, 21.09.2015
Summary and Conclusions

- Undercoverage, nonresponse, and overreporting jointly contribute to the participation bias in survey data; contribution of overreporting increases over time.

- Undercoverage, nonresponse, and overreporting have differential sociodemographic profiles.

- The errors potentially affect associations and regression models estimated from survey data. Overreporting appears particularly problematic.

- Alternative wording to minimize social-desirability bias and recall errors did not lead to substantial improvement.

<table>
<thead>
<tr>
<th></th>
<th>Sept 22</th>
<th></th>
<th>June 9</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>PP</td>
<td>%</td>
<td>PP</td>
<td>%</td>
</tr>
<tr>
<td>Sampling error</td>
<td>.1</td>
<td>0.4</td>
<td>-.2</td>
<td>-0.5</td>
</tr>
<tr>
<td>Undercoverage</td>
<td>4.1</td>
<td>19.2</td>
<td>3.7</td>
<td>11.9</td>
</tr>
<tr>
<td>Nonresponse</td>
<td>9.2</td>
<td>43.0</td>
<td>8.4</td>
<td>27.3</td>
</tr>
<tr>
<td>Overreporting</td>
<td>8.0</td>
<td>37.4</td>
<td>18.9</td>
<td>61.3</td>
</tr>
<tr>
<td>Total bias</td>
<td>21.5</td>
<td>100.0</td>
<td>30.8</td>
<td>100.0</td>
</tr>
</tbody>
</table>


