Variability in Survey Estimates Across Multiple Nonprobability Samples

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In Collaboration with Westat and SurveyMonkey
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Non-probability Research at Pew Research Center

Except for limited purposes, Pew Research Center has used only probability samples.

But non-probability surveys are increasingly prevalent, not just in market research but in public opinion and media surveys.

Pew Research Center feels a need to understand these methods for its own benefit. We have launched a major research initiative focused on understanding when and how survey research with non-probability samples can have scientific merit:

- What are current practices in the industry?
- How do the results compare with our current methods?
- How do results differ for different providers of non-probability samples?
Review of Techniques Used By Non-Probability Providers

Recruitment to panel
- Anything from banner ads to ads on social media to joining via the panel website
- Not all panels use the same recruitment methods

Use of river sample
- Some panels only use panel sample
- Others use a mix of panel and river

Sampling and weighting for a particular study
- Most panels typically use “sample balancing” (quota sampling)
- Differ on which variables, categories of and extent of crossing variables
- Weighting is fairly uncommon

Routers
- Panelist sampled for a survey, but survey or their quota group is full and routed to a different survey
- Not all panels use routers, characteristics of routers used vary

Incentives
- Vary by panel and include cash, redeemable points, donations to charity, etc.

Quality control measures
- At the overall survey level (e.g. compare results to benchmarks)
- Many different measures at the individual level (e.g. ensuring panelist is a real person)
Current Research

In collaboration with Westat and SurveyMonkey, we have fielded six identical non-probability web surveys from different providers, with several more in progress

• Used common questionnaire with 61 individual estimates covering wide range of substantive topics and question formats (helping behaviors, political and social attitudes, privacy concerns, internet use, need for cognition, interests, demographic characteristics)
• Identical questionnaire and survey experience across all six (used SurveyMonkey platform)
• Two probability surveys for comparison – one draws on waves of the American Trends Panel and the other is an ABS survey fielded by Westat (Mike Brick’s presentation)

Pew Research Center will share results and data from this research periodically.

This is a first, preliminary look at results. Warning: no conclusions yet!
### AMERICAN TRENDS PANEL

- **Probability-based panel recruited by RDD in early 2014**
- **5,338 Total Panelists,**
  - ~90% respond by web, ~10% by mail
- **~2,850 web respondents per wave, ~350 by mail**
- **This analysis is restricted to web respondents.**
- **Panel built and managed by Abt SRBI**
61 Unweighted Panel Estimates vs. Unweighted ATP
61 Weighted Panel Estimates vs. Weighted ATP
90 Comparisons From Two Identical Phases of the Political Polarization Telephone Survey

<table>
<thead>
<tr>
<th></th>
<th>Correlation:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unweighted</td>
<td>0.996</td>
</tr>
<tr>
<td>Weighted</td>
<td>0.990</td>
</tr>
</tbody>
</table>
Panel A / American Trends Panel

Correlation: 0.93

Correlation: 0.96
Panel B / American Trends Panel

Unweighted

Correlation: 0.97

Weighted

Correlation: 0.96
Panel C / American Trends Panel

Correlation: 0.96

Correlation: 0.97
Panel D / American Trends Panel

Unweighted

Correlation: 0.94

Weighted

Correlation: 0.96
Panel E / American Trends Panel

**Unweighted**

Correlation: 0.98

**Weighted**

Correlation: 0.98
Panel F / American Trends Panel

Correlation: 0.95

Correlation: 0.95
Mean Absolute Difference (61 Items) From American Trends Panel

- **Unweighted**
  - Mean: 6%
  - Median: 6%

- **Weighted**
  - Mean: 5%
  - Median: 4%
Mean Absolute Difference (61 Items) From Mean of Other Non-Probability Samples

Mean Absolute Difference

Unweighted

Mean: 4%
Median: 4%

Weighted

Mean: 3%
Median: 3%
# Mean of Absolute Differences (61 Items) By Panel

<table>
<thead>
<tr>
<th>Survey</th>
<th>From Other Non-Probability Samples</th>
<th>From American Trends Panel</th>
</tr>
</thead>
<tbody>
<tr>
<td>Panel A</td>
<td>2%</td>
<td>5%</td>
</tr>
<tr>
<td>Panel B</td>
<td>2%</td>
<td>5%</td>
</tr>
<tr>
<td>Panel C</td>
<td>1%</td>
<td>5%</td>
</tr>
<tr>
<td>Panel D</td>
<td>3%</td>
<td>5%</td>
</tr>
<tr>
<td>Panel E</td>
<td>5%</td>
<td>4%</td>
</tr>
<tr>
<td>Panel F</td>
<td>3%</td>
<td>6%</td>
</tr>
</tbody>
</table>
Item Deviations from ATP (Weighted)
Absolute Item Deviations from ATP (Weighted)
Substantive Measures: Interest in Country Music
Substantive Measures: Interest in Reading the Bible
Substantive Measures: *Always Vote in Local Elections*
Substantive Measures: Smoke Cigarettes Every day
Substantive Measures: Volunteered in Last 12 Months
Substantive Measures: Government Should Do More to Solve Problems
Substantive Measures: Republican/Lean Republican
Substantive Measures: Knows That Water Boils at a Lower Temperature in Denver Than Los Angeles
Unweighted Demographics: Ages 18-29
Unweighted Demographics: High School or Less

Percent

ATP Web  Panel A  Panel B  Panel C  Panel D  Panel E  Panel F

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