Using targeted design to improve sample quality in a probability-based mixed-mode panel
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Background

- Long-term decline in social survey response rates
  - Increasing costs of maintaining them
- Response rates are not necessarily associated with sample representativeness
- ‘One-size-fits-all’ fieldwork designs may not be optimal
Adaptive/Responsive Designs

- Use auxiliary data to target fieldwork protocols to sub-groups within a sample, with the goal of improving fieldwork outcomes.

- Auxiliary data may be information held about cases ahead of fieldwork collected during fieldwork.
  - Used to understand survey sample and monitor outcomes.

- Selection & implementation of appropriate protocols is key.
Targeted Design

- Many different approaches to responsive designs
- Split into two categories:
  - **Static designs** where fieldwork protocols are fixed at the start of fieldwork based on existing auxiliary data
  - **Dynamic designs** where fieldwork protocols can change during fieldwork based on auxiliary data collected

A ‘targeted design’ is a form of **static** responsive design, using data collected at the recruitment interview and previous fieldwork waves to target fieldwork protocols
The NatCen Panel

- First probability-based research panel in GB open to be used by the social research community
- Aims to produce reliable estimates for the British population in a shorter time-frame and at a lower cost than ‘traditional’ probability-based approaches.
- c.8,000 members recruited from face-to-face probability-based BSA survey (2015 to 2018)
- Sequential mixed-mode fieldwork design (web/CATI), lasting c. one month
Gradually declining response rates
Gradually increasing DEFFs
Implementing a targeted design

- Didn’t want to implement ‘response maximisation’ approach
  - Low concern: *gradual* decline + annual refreshment from BSA
  - Unknown impact on sample representativeness
  - Concern about impact on fieldwork costs & length
- Therefore opted for a targeted design which aimed to *improve the sample profile while keeping costs, fieldwork length, and response rates neutral*
Prioritising & de-prioritising cases

- Overall, aimed to optimise impacts
  - Move resources towards those who are under-represented
  - Move resources away from those who are less likely to be affected
- Used two sets of auxiliary data to identify how to move resources
  - **Demographic data** from BSA to identify panel members typically over- or under-represented in Panel surveys
  - **Participation history data** to improve the efficiency of targeting
## Prioritising & de-prioritising cases

<table>
<thead>
<tr>
<th></th>
<th>Participated in all waves</th>
<th>Participated in some waves</th>
<th>Participated in no waves</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 (most under-represented)</td>
<td>Medium priority</td>
<td>Highest priority</td>
<td>Low priority</td>
</tr>
<tr>
<td>2</td>
<td>Medium priority</td>
<td>High priority</td>
<td>Low priority</td>
</tr>
<tr>
<td>3</td>
<td>Medium priority</td>
<td>High priority</td>
<td>Low priority</td>
</tr>
<tr>
<td>4</td>
<td>Medium priority</td>
<td>High priority</td>
<td>Low priority</td>
</tr>
<tr>
<td>5</td>
<td>Low priority</td>
<td>Medium priority</td>
<td>Lowest priority</td>
</tr>
<tr>
<td>6</td>
<td>Low priority</td>
<td>Medium priority</td>
<td>Lowest priority</td>
</tr>
<tr>
<td>7</td>
<td>Low priority</td>
<td>Medium priority</td>
<td>Lowest priority</td>
</tr>
<tr>
<td>8 (most over-represented)</td>
<td>Low priority</td>
<td>Medium priority</td>
<td>Lowest priority</td>
</tr>
</tbody>
</table>
## Targeting protocols

<table>
<thead>
<tr>
<th>Priority group</th>
<th>Incentive offer</th>
<th>CATI fieldwork</th>
<th>Communications</th>
</tr>
</thead>
<tbody>
<tr>
<td>Highest priority</td>
<td>£10</td>
<td>Minimum of 8 calls</td>
<td>Two reminder letters</td>
</tr>
<tr>
<td>High priority</td>
<td>£5</td>
<td>Minimum of 8 calls</td>
<td>One reminder letter</td>
</tr>
<tr>
<td>Medium priority</td>
<td>£5</td>
<td>Minimum of 6 calls</td>
<td>One reminder letter</td>
</tr>
<tr>
<td>Low priority</td>
<td>£5</td>
<td>Minimum of 4 calls</td>
<td>No reminder letters</td>
</tr>
<tr>
<td>Lowest priority</td>
<td>£5</td>
<td>Not issued to CATI</td>
<td>No reminder letters</td>
</tr>
</tbody>
</table>
Measuring the impact

- Overall goal to improve the sample profile while keeping costs, fieldwork length, and response rates neutral

- Overall response rates continued gradual decline; fieldwork length the same, costs increased c.40p per issued case

- To measure impact on sample profile:
  - Differential impact of protocols on survey response rates of priority groups
  - Impact on overall DEFFs and R-indicator scores

- HOWEVER… not implemented as an experiment
  - Compare figures before/after implementation
  - But no counter-factual (impact of external effects)
Response rates
Response rates – Highest priority

- 2015 - highest priority
- 2015 - all issued
- 2016 - highest priority
- 2016 - all issued
- 2017 - highest priority
- 2017 - all issued

T1

T2
DEFFs

BSA 2015/16  BSA 2016/17

T1

T2

R-Indicators

[Graph showing the trend of R-Indicators from February 2017 to March 2019, with three lines representing BSA 2015, BSA 2016, and BSA 2017. The graph highlights two periods, T1 and T2, indicating significant changes in the indicators.]
Discussion

- Implementation of targeted design is possible on a panel sample, even with tight budget & time constraints

- But no clear or consistent impact on sample quality:
  - Possible halting of decline in survey response rates/DEFFs for BSA 2015/16 cases…?
  - But no evidence of impact on BSA 2017 cases, or in R-indicators & patterns of change not as expected

- Impacts too small?
  - Majority of non-response occurs before panel survey
  - Panel members are a relatively engaged group
  - Small proportions targeted: 19% high priority, 6% highest priority
  - ‘Separate the signal from the noise’
Next steps…?

◼ Continued implementation of the design
◼ Further development
  ◼ Larger impact of targeted design
    ◼ Move more cases towards ‘extremes’ of priority groups
    ◼ Different protocols/ ‘amplifying’ existing ones
    ◼ Use new auxiliary data
◼ Target different fieldwork outcomes
◼ Dynamic designs
  ◼ E.g. email protocols based on opening of previous ones, or telephone protocols based on previous call outcomes