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Investigating the Utility of Interviewer Observations on the Survey Response Process

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Utility of Interviewer Observations on the Survey Response Process

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The National Survey of Family Growth (NSFG) is conducted by the Centers for Disease Control and Prevention's (CDC’s) National Center for Health Statistics (NCHS), under contract # 200-2010-33976 with University of Michigan’s Institute for Social Research with funding from several agencies of the U.S. Department of Health and Human Services, including CDC/NCHS, the National Institute of Child Health and Human Development (NICHD), the Office of Population Affairs (OPA), and others listed on the NSFG webpage (see http://www.cdc.gov/nchs/nsfg/). The views expressed here do not represent those of NCHS nor the other funding agencies.
Research Questions

Can interviewers effectively

• rate the respondent’s performance in surveys?
• be used to derive a meaningful single indicator of response quality?
• indicate where the quality breaks down but pointing to specific steps in the cognitive response process (comprehension/retrieval/judgement/editing)?
Past Findings – Use of Interviewer Ratings

• Bennett (1948) implemented questions about the quality of respondent’s answers addressed to the interviewer as an instrument against interviewer cheating.

• Fisk, G. (1950) evaluation of interviewer observations of the survey response process focused on the variation of interviewer ratings of interest between interviewers.

• Feldman, Hyman, and Hart (1951) multiple interviewer evaluations on the respondent’s behavior throughout the interview -> analyze interviewer variance and interviewer influence.

• Later studies found respondents who received positive or favorable ratings tended to provide data of better quality in terms of a variety of indicators.
  - less missing data (Tarnai, J., and Paxson, M.C. 2005; Antoun, C. 2012),
  - less measurement error (Peytchev, A. and Peytcheva, E. 2007),
  - more consistent reports (Antoun, C. 2012), and
  - more codeable answers to open-ended questions (Tarnai, J., and Paxson, M.C. 2005).
Data - NSFG

- Interviewer observation data from the National Survey of Family Growth, a national survey of sexual and reproductive habits in 15-49 year olds.
- 60 minutes survey with two sections, an in-person computer assisted personal interview (CAPI) and an audio computer-assisted self-interview (ACASI).
- 30 post-interview observations, including details about the environment, the respondent’s response behaviors, and respondent mood. Here 22 of the 30 observations used to map the survey response process.
- Each observation was classified into one of the four stages of the survey response process. (n=52 excluded due to missingness -- final sample size of 15,768).
Observations – Comprehension

• Comprehension: include four indicators (yes/ no) of distractions:
  - television on,
  - respondent received phone calls,
  - children present and need attention,
  - and other distractions.

• Comprehension of the ACASI
  - how much help the respondent needed from the interviewer
    (none/ a little/ a lot/ or interviewer administered),
  - the respondent’s use of headphones (at least some of the time/ never),
  - the respondent’s use of text and audio
    (text only/ text and audio/ audio only/ don’t know),
  - and what support was used to hold the laptop (table/ lap/ other).
  - Difficulty using the CAPI application (any/ none)
  - Interviewer’s opinion of respondent attentiveness (not at all, some/ very)
Observations – Retrieval/Estimation/Editing

• Retrieval
  • Was the respondent upset (yes/ no),
  • Tired (yes/ no),
  • Tow did they act during the interview (hostile, neutral/ friendly).

• Judgement or estimation process was an overall indication of the quality of information provided by the R (excellent/ good/ fair-poor).

• Mapping and editing process
  • Seating arrangement (next to respondent facing the same way/ next to respondent at a right angle/ across from the respondent/ other)
  • Presence of other persons within hearing range (no one else present/ 1+ people present, not able to hear/ 1+ people present, able to hear part of IW/ 1+ present able to hear whole IW).
  • Measures of the respondent’s ability to see the computer screen during the CAPI section (yes, all questions/ most, not all questions/ a few questions/ none),
Observations – cont’d

• Interviewer’s ability to see the computer screen during the ACASI section (yes/ no)
• Interviewer’s mood (happy/ neutral, sad, unhappy) were also captured.
• Location (on the respondent’s property/ in the interviewer’s car/ in another public place)
• Atmosphere (chaotic, noisy/ some interruptions/ ideal- quiet and calm)
• Language of the interview (English/ Spanish/ both)
Method

• Six latent class analysis models that each included the 22 categorical interviewer observations.

• Each model used a different number of latent class groups ranging from 2 to 7.

• Fit statistics (including log likelihood, g-squared, AIC, BIC, and adjusted BIC) and entropy (higher entropy indicators better class separation) compared across the 6 models.

• Focus on the model with 7 latent classes that minimizes the model fit statistics and has an entropy estimate of 0.89.
Results

• 27% in class 1, private, text ACASI, high quality
• 36% into class 2 most private, high quality

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• 6% in class 3 distractions with kids, text ACASI, no R problems
• 8% in class 4 distractions, no kids, R problems, iwer assist, iwer unhappy, headphones in ACASI, low quality
• 10% in class 5 distractions with kids, headphones in ACASI, no R problems

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• 8% in class 6 car interviews, sometimes headphones in ACASI
• 5% in class 7 worst quality across board, no privacy, iwer unhappy
Data – ESS

• 5th wave of ESS used for this analysis (mostly CAPI)
• 15,820 interviews over 12 quarters of data collection, 1/2016 – 12/2018.
• **Interviewer ratings** (5 point scale; never – very often; don’t know):
  - Understanding of the question
  - Clarification of any questions
  - Reluctance in answering
  - Answering with best effort
  - Presence of others with interference

• **Quality indicators**
  - non differentiation (at least 4 same items in matrix question),
  - extreme and middle answers,
  - acquiescence (percentage agreeing in a set of 23 attitudinal items)
  - internal consistency
  - duration
Conditional Probabilities – highest quality
Conditional Probabilities – poorest quality
LCA Rating Results – Quality Indicators

<table>
<thead>
<tr>
<th></th>
<th>Freq.</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Class 1 - Satisfiers</td>
<td>1845</td>
<td>11.67</td>
</tr>
<tr>
<td>Class 2 - Optimizers</td>
<td>9046</td>
<td>57.20</td>
</tr>
<tr>
<td>Class 3 - Ordinary Rs</td>
<td>4923</td>
<td>31.11</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>NR-rate</th>
<th>Non-diff.</th>
<th>Extreme</th>
<th>Acqui.</th>
<th>Incon.</th>
<th>Length</th>
</tr>
</thead>
<tbody>
<tr>
<td>Class 1 - Satisfiers</td>
<td>$6.60^{2,3}$</td>
<td>$12.94^{2,3}$</td>
<td>$24.81^{2,3}$</td>
<td>54.84</td>
<td>$3.85^{2,3}$</td>
<td>17.32</td>
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<tr>
<td>Class 2 - Optimizers</td>
<td>2.97</td>
<td>8.30</td>
<td>23.85</td>
<td>59.11$^{1,3}$</td>
<td>2.86</td>
<td>17.08</td>
</tr>
<tr>
<td>Class 3 - Ordinary Rs</td>
<td>4.08$^2$</td>
<td>10.56$^2$</td>
<td>23.51</td>
<td>57.51$^1$</td>
<td>2.60</td>
<td>17.50$^2$</td>
</tr>
<tr>
<td>Total</td>
<td>3.74</td>
<td>9.54</td>
<td>23.86</td>
<td>58.12</td>
<td>2.90</td>
<td>17.24</td>
</tr>
</tbody>
</table>

Numbers are percentages, except for interview length which is measured in seconds per item.

Superscript numbers indicate statistically significant differences ($p < 0.05$) against respective class.
Discussion

• Interviewer observations have the potential to predict data quality and/or response differences.
• Given cost of interviewer observations sensible to investigate
  - which observations are more useful for which types of measures,
  - whether the observations can consistently predict data quality.
• Systematic analysis of observations across different surveys needed
• Observations only recorded at the end – possible that distractions or other events occurred but not in a meaningful way for the entire interview. More mid-stream recording?
Thank you!
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