Internet and Mail Survey Research at the 2013 AAPOR Conference

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Mail and Internet Sessions at AAPOR

1) The Web Option in Multi-Mode Surveys
2) Methodological Brief: Internet Surveys
3) Sampling and Data Quality Issues in Internet Surveys
4) Developments in the Design and Implementation of Web Surveys
5) Using Mail to Improve the Effectiveness of Web and Telephone Data Collection for Address-Based Samples of the General Public
Divided papers into five broad categories

- Design
- Sampling
- Implementation
- Response
- Web in mixed-mode surveys
Design Issues in Web (and Mail) Surveys

- Response difficulty
- Question design
- Questionnaire design
- Letter design
Response Difficulties: Exploring response option visual design with eye-tracking

- Libman, Smyth, & Olson

- Conducted student survey via web and used eye-tracking technology to determine response difficulty

- Analyzed:
  - One vs. two columns response categories
  - Fully-labeled vs. partially-labeled scales
  - “Smiley-face” symbols next to satisfaction response categories
Response Difficulties: Exploring response option visual design with eye-tracking

Eye-tracking results:

- One column responses faster for select-all and two column responses faster for select-one
- Respondents moved faster through fully labeled multi-item questions
  - Radio buttons and labels are related through visual proximity
- When smiley-face symbols are next to satisfaction response options, respondents spent more time processing and answered more positively
- Overall, respondents spent more time looking at response options vs. question stem
Response Difficulties: Classifying mouse movements to predict respondent difficulty

- Horwitz, Kreuter, & Conrad

- Paradata from American Community Survey on mouse movements

- Analyzed common mouse movements and time of response
Response Difficulties: Classifying mouse movements to predict respondent difficulty

- Mouse-tracking results:
  - Common movements:
    - hover over question text
    - moving between response options and “Next” button
    - moving back and forth between response options
  - Over 20% engaged in one “common movement”
  - Found 1.2 movements on complex question formats and 0.7 movements on less complex question formats
- Useful for identifying response difficulties
Response Difficulties: The effects of interactive feedback

- Hudson, Hupp, Zhange, & Schroeder

- Analyzed the effects of providing interactive feedback in web surveys
  - Pop-ups that offer tips/hints, ask questions, etc.
Response Difficulties: The effects of interactive feedback

- Providing interactive feedback during data collection helps respondents who are less Internet-savvy
  - Was seen as a burden for Internet-savvy respondents
- For respondents who need it, should be highly interactive
Question Design: Dynamic vs. Static Open-ends

- Fuchs

- German web survey

- Tested dynamic list-style open-end response options vs. static list-style open-end response options
  - “Which other university did you apply?”
**Question Design: Dynamic vs. Static Open-ends**

- Static design shows one, three, or six answer spaces for open-end responses
- Dynamic design shows one then three, one then six, and three then six answer spaces for open-end responses
- No statistically significant difference between the two designs
  - Static 3 or 6 and Dynamic 1-3 and 1-6 had higher item nonresponse but more desired responses
- Also tested drop-down answer suggestions
  - Resulted in fewer missings but limited variation
Question Design: Using Google to Test Questions

- Stern & Welch

- Analyzed whether Google’s single-item surveys can be used as a pre-test for survey questions (vs. cognitive interviewing)
  - Tested question measuring how many phone calls are answered via cell and home phones
    - All, Some, Few vs. more than 75%, 25-75%, less than 25%

- Results indicate that it can be used successfully for pre-tests vs. cognitive interviewing
  - Inexpensive and quick
    - $400 for 4000 completes in about 30 hours
  - Allows for feedback in a self-administered environment
Questionnaire Design: The effects of compressing Qx length on data quality

- LeBlanc, Cosenza, & Lloyd

- Consumer Assessment of Healthcare Providers & Systems (CAHPS)
  - Three mail contacts

- Tested horizontal display of responses options (compressed into 4 pages) vs. vertical display (12 pages) in mail survey
Questionnaire Design: The effects of compressing Qx length on data quality

- **TEST A:** 4 page - horizontal scales on single lines only
  - □ Never
  - □ Sometimes
  - □ Usually
  - □ Always

- **TEST B:** 4 page - scales with multiple columns and rows
  - □ Never
  - □ **Sometimes**
  - □ **Usually**
  - □ Always
Questionnaire Design: The effects of compressing Qx length on data quality

- Compressed version resulted in lower overall response rates although item nonresponse rates were similar
  - Compressed version $500 cheaper
Letter Design: Aiding within-household selection with graphical symbols

- Stange, Olson, & Smyth

- 2012 Nebraska Annual Social Indicators Survey (NASIS)

- Analyzed the effects of including a calendar in the contact letter on next-birthday within-household respondent selection
Letter Design: Aiding within-household selection with graphical symbols

- Results suggest that the calendar in the letter did not aid in regard to response rates or demographic representativeness
  - Actually resulted in fewer HHs making the accurate within-household respondent selection
    - Held across all demographic subgroups
Sampling Issues in Web Surveys

- ABS vs. Email Sampling
- Sampling from social media and search engines
ABS or Email?

- Bilgen, Stern, & Wolter

- Analyzed results from sampling via email (InfoUSA) vs. ABS
  - Email Blast: 3 email contacts and incentive
  - ABS: 4 mail contacts with incentive requesting web response

- ABS resulted in higher response rates but Email Blast resulted in more respondent representativeness (vs. General Social Survey baseline)
  - Could get at different portions of the web population with use of both methods
Sampling from social media & search engines

- Stern, Wolter, & Bilgen

- Tested the use of Google and Facebook ads to recruit respondents
  - Ads displayed in a variety of locations
  - Used $5 & $10 incentives, and displayed sponsorship (NORC)

- Results show that Google was faster and less expensive vs. Facebook
  - Google respondents closer demographically to General Social Survey baseline
  - Both methods very successful at getting younger respondents

- Questions remain over generalizability of results
Implementation Issues in Web Surveys

- Contact strategies
- Survey sponsorship effects
Contact Strategies: Phone call or mailed letter?

- Connelly, Sjoblom, Hepburn, & Datta

- National Survey of Early Care & Education (NSECE)

- Web+phone and Web+F2F

- Tested the effects of a phone call request vs. a mailed letter request
Contact Strategies: Phone call or mailed letter?

- No significant difference in using initial phone call vs. initial mailed letter
  - Mail more effective at reaching more respondents at a lower cost
    - 90 hours of labor (n=656)
  - Phone helped to better identify ineligible respondents
    - 180 hours of labor (n=656)
- Web response rate higher when respondents received letter
  - Phone/F2F response rate higher when respondents received phone call
Contact Strategies: Effects of mailed invitations

- Bandilla, Couper, & Kaczmirek
- German General Social Survey

- CAPI Interview to determine web access
  - Group A: have web access but email not asked or provided
  - Group B: have web access and email asked and provided
  - Group C: have web access and email asked but not provided
  - Group D: no web access
- Mailed all groups a web request letter and a follow-up questionnaire
Contact Strategies: Effects of mailed invitations

- Only 42% of those asked for email actually provided it

- Group A: 19.2% web, 30.4% mail
- Group B: 26.4% web, 22.4% mail
- Group C: 22% web, 32% mail
- Group D: 3.2% web, 54% mail
- Overall weighted RR: 16.9% web, 51.8% web+mail

- Mixed mode design using mail contacts works well
- Asking for email address does not appear to have negative consequences even if majority do not provide it
Contact Strategies: Advanced letters, additional reminders, and different timing of mailings

- Reiser

- National Census Test
  - Web → Mail → Phone

- Tested sending an advanced letter (vs. none), adding an additional mail reminder (vs. none), and varying the timing of mailings
Contact Strategies: Advanced letters, additional reminders, and different timing of mailings

• Additional reminder was most effective
  ▫ Increased web and mail response rates, and resulted in more telephone interviews

• Advanced letter did not impact overall response rates

• Mailing the questionnaire sooner (vs. later) also did not affect overall RRs
  ▫ Did result in fewer web and more mail respondents
Survey Sponsorship Effects

- Edwards, Dillman, & Smyth

- 2012 Washington Water Survey and 2012 Nebraska Water Survey

- Tested the effects of university survey sponsorship (WSU and UNL) on web and mail response in the two states
  - Web+mail and mail-only designs in Nebraska and Washington
- Within-state sponsorship resulted in significantly higher response rates for mail-only and web+mail
  - Greater effect for web
- Mail-only RR higher than web+mail in both states
Response Issues in Web (and Mail) Surveys

- Spatial clustering and contextual effects
- Response distractions
- Web response devices
- Data quality
Response Issues: Spatial clustering of web responses

- English, Fiorio, Stern, & Curtis

- Used GIS to analyze the spatial distribution of web responses
  - NORC Internet Sampling Initiative (U.S. HH population; n=748)
  - Survey of Technology Usage
• Low web responses clustered in Mississippi Valley, Texas, southern California, and New Mexico
• High web response clustered in Dakotas and Utah, Oregon
Response Issues: Spatial clustering of web responses

- Web respondents closest demographically to population in high affluence and high Internet access regions
- Using Internet on mobile device and getting news via Internet also spatially clustered
  - High in Northeast, southern California, low in upper Midwest
Response Issues: Contextual effects on web vs. mail response

- Messer & Dillman
- Three general public surveys in Washington state, 2007-2011
- Used GIS to determine the effects of community characteristics on response to web vs. mail modes
  - County and Census County Subdivision (CCD)
  - Created targeted web+mail designs based on results
Response Issues: Contextual effects on web vs. mail response

- **Correlations:**
  - County-level factors: population (+), median income (+), % college degree (+), HH Internet access (+), median age (-)
  - CCD-level: same as above, but also % Hispanic (+) and % non-Hispanic White (-)

- **Multi-level multivariate analyses:**
  - County-level: no significant predictors ➔ too much individual variation within counties
  - CCD: population (+), income (+), education (+), and age (-)
Predicted probabilities for web response at CCD-level (multi-level model results)
Response Issues: Response distractions

- Ansolabehere & Schaffner
- Three web surveys
- Measured the various ways respondents are distracted during web survey administration
Response Issues: Response distractions

• Results indicate that respondents are distracted frequently, particularly in long surveys and for younger respondents
  ▫ Distractions were found to affect duration but not data quality
    • On average, each distraction adds 5 minutes
• Most common distractions:
  ▫ Watch TV
  ▫ Talk to adult
  ▫ Take a break
  ▫ Phone call
  ▫ Check email
• Other reported distractions:
  ▫ Talk to child
  ▫ Visit another webpage
  ▫ Text message
  ▫ Do a chore
Response Issues: Web Response Devices

- Buskirk, Walton, & Wells
- Nielsen panel

- Tested which device or mode respondents preferred to use: smartphone, tablet, computer, or paper/pencil
- Also tested different incentive amounts and survey times

- Found higher preference for computer or tablet vs. smartphone or pencil/paper
- Also found respondents most preferred 10 minute survey for $10 or 20 minute survey for $30
  - Neat use of conjoint analysis
Response Issues: Data Quality in Web vs. Mail Modes

- Tancreto, Horwitz, Davis, & Zelenak
- American Community Survey
- Looked at outliers on income question, rounded values in income fields, correlations between related measures, and gross difference rates among several questions
- Found no difference between web and mail overall
  - Rounding error on income more common on web but difference is small
- Did find a mode gross difference rate on:
  - Mortgage (mail lower)
  - Insurance (web lower)
  - Ancestry (web lower)
Issues with mixing web with other modes

- Screener effects
- Web and face-to-face (f2f)
- Web+Mail
Screener Effects: Telephone or mail to drive respondents to web?

- Edwards, Brick, & Lohr

- Companion to National Crime Victimization Survey
  - Requires screener to determine those eligible for web survey

- Tested “telephone screener harvest” vs. “two-phase mail screener” in ABS sample
  - Harvest: match sampled HHs with phone number, send unmatched HHs a mail screener
  - Two-phase: send mail screener to all HHs to get phone number, subsample mail screener nonrespondents for telephone match
Screener Effects: Telephone or mail to drive respondents to web?

- Telephone screener harvest (n=12,500)
  - 41% match rate
  - 74% unmatched returned mail screener with phone number
  - Overall RR 11.9%
- Two-phase mail screener (n=14,000)
  - 74% returned mail screener with phone number
  - 40% telephone match rate for mail screener nonrespondents
  - Overall RR 11.5% (mail screener respondents 45.2% overall RR)
- Telephone harvest screener less expensive
Web and F2F

- Collins, Mitchell, & Toomse-Smith

- Understanding Society’s Innovation Panel
  - Longitudinal UK survey (n=100,000 individuals)
  - Web+CAPI (F2F)

- Analyzed the role of survey mode in respondents’ decisions to participate
Web and F2F

- Web+CAPI RR: 74%
- CAPI-only RR: 78%

- Reasons for nonparticipation in web:
  - Did not receive invitation
  - Equipment not working
  - Procrastination
  - No motivation for web response
  - Bad experience by others in HH
**Web+Mail**: From mode-choice to sequential modes

- Ellis, Aspinwall, Heinrich, Ginder, & McDonald

- Deaths in Custody Reporting Program
  - Survey of jails

- Analyzed the effects of switching from web/mail mode choice design to web+mail sequential design

- Web RR increased and costs and data collection times decreased with web+mail
  - Web/mail choice: 22% via mail, 75% via web
  - Web+mail: 2% via mail, 95% via web
Web+Mail: Results from different combinations

- Tully & Lerman
- Student surveys in New Jersey
- Tested web/mail choice, mail+web, web+mail, and 2web+mail (i.e. web+web+mail)
  - 57% RR mail+web
  - 51% web/mail choice
  - 49% web+mail
  - 43% 2web+mail
- Costs are opposite (mail+web most expensive, 2web+mail least expensive)
- Few demographic differences between modes:
  - Race/ethnicity: more minorities via web
  - Education (higher for web)
  - Age (lower for web)
Web+Mail: Cost analysis

• Lesser

• Mail-only and web+mail surveys in Oregon, 2006-11

• Tested the cost effectiveness of web+mail vs. mail-only based on RRs to previous surveys
  ▫ Cost/respondent is cheaper for mail-only up to sample size of 5,000
  ▫ Costs/respondent similar for mail-only and web+mail when sample size is around 5,000
  ▫ Costs/respondent is cheaper for web+mail for samples sizes over 5,000
Citations

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Thanks, and any questions?

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