Achieving Synergy Across Survey Modes: Mail Contact and Web Responses from Address-based Samples

For
Pacific Chapter of the
American Association for Public Opinion Research
December 12, 2013

By
Don A. Dillman*

*Regents Professor, Department of Sociology and the Social and Economic Sciences Research Center, Washington State University, Pullman, WA 99164-4014 dillman@wsu.edu

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Thank you!

- I appreciate what PAPOR brings to public opinion research, survey methodology, and Western United States.
- I also appreciate the invitation to spend some time with you this morning.
- Today’s short course is the result of the last six years of research aimed at developing and effective alternative for state and regional surveys as well as certain national surveys.
- I welcome questions and comments as we move through the next 2½ hours.
This is a difficult time for survey methodology

- Declining or low respondent cooperation for some, but not all, methods.
- Coverage is a significant problem for telephone landlines (<65% of households)
- We may be losing the telephone as an effective mode of surveying households (brevity, number access, cooperation)
- The anticipated smooth transition from telephone to web for household surveys has not yet been realized
- Some popular computer devices are less survey friendly (i.e., smart phones) than laptops.
Telephone surveys are not working well

- Landlines, the backbone of telephone sampling now exist in ~ 60% of households, and only ~45% of households with children.
- Response rates are dismal, <10% for many national opinion surveys.
- Telephone numbers are losing correspondence with where people reside—especially a problem for sub-national surveys.
- Screening essential--Children have cell phones, and talking while driving is a concern.
- People often more likely to hang up than complete a survey.
Enormous efforts are being made to justify and repair the telephone.

- E.g. “Response Rate no longer matters.” Response error (the difference between respondents and non-respondents) does not correlate well with response rates.
- Extensive weighting and adjustment can be done if appropriate variables are available, e.g. election surveys.
- A fundamental belief that an Interviewer is required for obtaining results of acceptable quality.
The cultural problem is even larger

- Two-way telephone conversations are no longer the way we communicate with strangers; we mostly e-mail, text, and leave messages.
- Required human (interviewer) intervention is declining in all important aspects of life—bank withdrawals, travel reservations, purchasing health insurance and other products on-line and in stores.
- Expecting people to respond to random telephone calls reporting health, income, etc. runs counter to societal norms. Why should we expect people to respond to them?
- Cultural fit is about accommodating to existing norms, rather than creating new ones, e.g. green stop signs!
It’s useful to recall that not all effects of telephone interviewing were positive

- No visual support
- Shorter utterances used to achieve comprehension
- Utterances had to include query + answer choices
- Extreme branching used to shorten utterances
- More emphasis was placed on good interviewer support
- Interviewer effects potentially resulted in biased answers
  - Social desirability
  - Satisficing and recency effects
  - Acquiescence
Why is it so difficult to transition away from the telephone?

- Interviewer could make sure questions were understood
- Interviewer could probe and cajole people to give an answer
- Nearly everyone (98%) uses telephones, whether cell or landline or both
- The hoped-for “seamless” transition from telephone to Internet-only surveys has not happened.
- We need it, just as we need all of our data collection modes. We have brought it back into the 4the edition of the TDM book. *Internet, Phone, Mail and Mixed-Mode Surveys: The Tailored Design Method, Fall 2013.*
The Internet also has its problems

- Household coverage is about 75%, but willingness to respond is much lower.
- A division of internet labor prevails in some homes.
- “Trust” of email is low.
- We have no sample frame for the general public, such as an “RDD”.
- The Internet is a crowded meeting space, and it’s one-way nature results in messages being mostly ignored.
Additional Internet challenges

- Response rates with contact are often similar to those for the telephone.
- The Internet is not yet a stand-alone, completely electronic (email contact + web response) method of surveying.
- Response bias to internet only surveys favors higher educated younger respondents.
- We are transitioning to mobile devices and these are not especially sympathetic to surveys.
So how do we deal with this for the next decade?

- Be patient; Society will continue to change.
- An interim (and maybe long-term) approach is mixed-mode design—using multiple modes of contact and response to improve results.
- This short course is partly about using mail contact for households (95-95% coverage with addressed-based samples) to encourage web response.
- We are attempting to mix two visual modes (web and mail) and use unified mode construction to achieve similar responses.
Arguments offered by some for not using mail for surveys

- Low response rates are inevitable
- This methodology is too slow
- High item non-response rates are inevitable
- Poor compliance will be achieved with branching and skip patterns
- Respondent can preview later questions
- “Showing” response topic contributes to non-response error
Additional arguments for **not using mail**

- Interviewers are essential for high data quality through probing and persuasion
  - Mail open-ends get inadequate responses
  - Cannot provide additional information when requested
  - Cannot use hidden categories on mail (e.g., no opinion)
- Uneducated people cannot respond
- Too expensive (sharp contrast to 80’s-90’s)
- Mail is old-fashioned!
Are these arguments valid?

- Some are, but some are not, and others are simply out-of-date
- Few of the concerns apply to every survey
- But, there are situations in which I would **not** encourage use of mail
- However, we have passed the era of rejecting a survey mode because we know of specific situations in which a mode will not work
We are in an era of tailored design; different methods for different populations and situations

- Structural variables influence response rates, for example:
  - Sponsorship by government helps response rates
  - Some survey populations respond better than others
  - Salience improves response

- Research on Decennial questionnaires illustrate combining TDM techniques and government sponsorship.

- This research provided experience for using nameless communications (important for using address-based sampling)
Results of many experiments on Decennial Census forms in 1990’s

- Sixteen factors tested: five improved response rates
  - Pre-notice letter
  - Reminder postcard
  - Replacement questionnaire
  - Respondent-friendly questionnaire
  - Notice on envelope that response was mandatory
- Census tests showed that response rates of 65% were achieved (compared to 20-30% without)
- Mailings were sent to addresses-only

(For summary of all experiments see Dillman, 2000, Mail and Internet Surveys, pp.298-313)
One reason for reconsidering the use of mail methods: **Coverage**

- The U.S. Postal Service “Delivery Sequence File” includes 95-97% of all residential addresses in the U.S.
- Household coverage is far better than for any telephone or Internet list
- It is generally available through two contractors licensed by the U.S. Postal Service
- This list is frequently updated
- Only occupied households receive delivery
- Household addresses can be used to deliver mail questionnaires and/or request completion of a web survey
However, the Delivery Sequence File (DSF) is not perfect

- Post office boxes may or may not be residential
- Not all residences have city-style addresses; the trend is towards complete conversion
- Names are not included on file provided by the U.S. Postal Service
  - *Does that affect our ability to get people to go to the web or respond by mail?*
- That concern is addressed by the present research.
Can reasonable response rates be obtained for mail surveys?

- Until the mid-1980’s mail response rates were consistently lower than telephone response rates, but then the situation reversed.
- Since then, it is difficult to know whether or not mail response rates have declined.
- This question needs to be answered:
  - For the “nameless” file from the U.S. Postal Service
  - For other lists
- It’s also important to understand how the specifics of mail implementation procedures affect response rates.
A brief look backwards to 1978: Improving mail survey response

- Moving past “magic response bullets” to a coordinated set of implementation methods

- The techniques included:
  - Four or more contacts
  - Respondent-friendly questionnaires
  - Personalization of correspondence
  - Stamped return envelopes
  - A special contact (certified mail or later federal express)
  - Many small features, from question order to layout of questionnaires and coordinated communications based on social exchange principles

- Without incentives, these methods produced response rates of 65-75% for most mail surveys (Dillman 1978)
Response rates to mail have declined somewhat less than for telephone

- I will show what one can reasonably expect for mail in the 2010’s, and how to achieve such response rates.
- But, first let’s look at some evidence from the past twenty years for a cross-sectional survey.
The National Parks Service Visitors Survey Project conducted by the University of Idaho

- 170 surveys were conducted each year from 1988-2007, under the direction of Gary Machlis and Margaret Littlejohn (http://psu.uidaho.edu)
- 9-13 parks were studied each year
- The topic and questionnaire formats remained virtually the same
- Visitors to parks were handed a questionnaire and asked to mail it back (Dillman, Dolsen and Machlis 1996)
Average yearly response rates have declined about 10 percentage points, from about 80% in the late 1980’s to 70% in recent years.
Have response rates declined?

- Mean response over 20 years is 76%, and the decline is only slight
- However, there is much more to the story
- The number of pages increased and the density of those pages also increased
- At the same time the number of follow-ups and replacement questionnaires increased
The average number of *items per page* (i.e., density) increased over time.
The number of *pages* and total *items* increased over time.
The average number of replacement questionnaires increased over time.
What have we learned?

- **Mail-only** methods can still work fairly well
  
  (Rookey, Le, Littlejohn and Dillman, 2012, Understanding the Resilience of Mail-Back Survey Methods: An Analysis of Twenty Years of Change in Response Rates to National Park Surveys. *Social Science Research* 41: 1404-1414)

- But, fuller use of available implementation methods and techniques than in the past may be required.

- The park situation—hand out a questionnaire and ask for it to be sent back by mail—is somewhat unusual.

- But, it has many of the same elements that are involved in mail-out, send back a web or paper questionnaire.
How do enclosed vs. post payment incentives influence response rates with multiple contacts?

Response rates by **Contacts and Incentives**

<table>
<thead>
<tr>
<th>Incentive</th>
<th>1&lt;sup&gt;st&lt;/sup&gt; Mailing (%)</th>
<th>2&lt;sup&gt;nd&lt;/sup&gt; Mailing (%)</th>
<th>3&lt;sup&gt;rd&lt;/sup&gt; Mailing (%)</th>
<th>4&lt;sup&gt;th&lt;/sup&gt; Mailing (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>No incentive</td>
<td>20.7</td>
<td>36.7</td>
<td>46.7</td>
<td>52.0</td>
</tr>
<tr>
<td>$1 Cash</td>
<td>40.7</td>
<td>52.0</td>
<td>61.3</td>
<td>64.0</td>
</tr>
<tr>
<td>$5 Cash</td>
<td>48.7</td>
<td>60.7</td>
<td>66.7</td>
<td>71.3</td>
</tr>
<tr>
<td>$5 Check</td>
<td>52.0</td>
<td>62.7</td>
<td>66.7</td>
<td>67.3</td>
</tr>
<tr>
<td>$10 Check</td>
<td>44.0</td>
<td>56.7</td>
<td>62.0</td>
<td>66.7</td>
</tr>
<tr>
<td>$20 Check</td>
<td>54.0</td>
<td>70.7</td>
<td>75.3</td>
<td>79.3</td>
</tr>
<tr>
<td>$40 Check</td>
<td>54.0</td>
<td>63.3</td>
<td>66.0</td>
<td>69.3</td>
</tr>
<tr>
<td>Promise of $50</td>
<td>23.3</td>
<td>43.3</td>
<td>53.3</td>
<td>56.7</td>
</tr>
</tbody>
</table>

Note: Each treatment group contained 150 subjects  
(James and Bolstein 1992)
Enclosed incentives are not just used to improve response rates, but to also reduce nonresponse error

Response rates by **age** and **incentives** for 1993 Survey of Washington State New Drivers License Holders

- <35
- 36-49
- 50-60
- 61+
- Without $2
- With $2

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The kind of incentive makes a big difference in results

- Sending token $ with the request improves response rates significantly and reduces non-response error
- Material incentives sent with request help, but are much less effective than $
- Payments afterwards, including charity donations, are less effective
- Explanation is the difference between social and economic exchange
Can we use a postal request and incentives to obtain web responses?

- E-mail survey requests cannot include token cash incentives in a meaningful way—thus one of our most effective ways of achieving response is not available in such surveys.

- Can we use mail contacts to deliver a token incentive, while still requesting a web response?

- Does it make a difference if we use an incentive with more than one of the requests?
When We Contact Sample Members by Mail, We Are Not Restricted to Mail Responses

- As web use increases, we can expect a greater % of sample members who are willing and able to respond by web
- If enough responses are obtained, web response can be less costly in terms of data entry and postage than mail response
- It is possible web response can be obtained more quickly than mail response
Another idea to contemplate; Mail contact does not restrict us to Mail Responses

- As web use increases, we can expect a greater % of sample members who are willing and able to respond by web
- If enough responses are obtained, web response might be less costly in terms of data entry and postage than mail response
- It is possible web response can be obtained more quickly than mail response
- Can we develop “push-to-web” systems that are as effective or more so than paper alone?
To develop and test these ideas, we conducted five Address-based household studies (2007-2012)

1. Lewiston, ID-Clarkston, WA Survey 2007
2. Washington Community Survey 2008
4. WA, PA, AL Tri-state Electricity Survey 2011
5. WA and NE Water Management Survey 2012
Within these studies, sample sizes in each treatment group ranged from about 400 to 1000 households

1. Lewiston, ID-Clarkston, WA Survey
   (n=400 for each treatment group)
2. Washington Community Survey
   (n=500-700 depending on treatment group)
3. Washington Economic Survey
   (n=600-700 depending on treatment group)
4. WA, PA, AL Tri-state Electricity Survey
   (n=510 in WA, n=470-600 in PA, n=920-1000 in AL; all depending on treatment group)
5. WA and NE Water Management Survey
   (n=600 for each treatment group)
These five studies involved:

- Designing the “next” study based upon results from the previous study(ies); we added new features in each test to see how response rates were affected and to reduce non-response error.
- 35 experimental treatments were implemented, some of which were controls carried forward from study to study.
- Ineffective strategies were not carried forward.
- **Constraints**
  - 20-25 minute surveys
  - 12 page questionnaires (in paper)
  - 90-140 individual responses required
  - Used visual design principles and unified mode construction for web and mail
Over time, we tested many elements:

- Pure mode choice (mail and web)
- Effects of withholding paper questionnaire until late
  - *Web+mail*: withholding mail until the 3rd of 4 contacts
  - *2web+mail*: withholding mail until the 4th and final contact
- Effects of requesting paper only response
- Effect of providing web response directions
- Effect of $5 cash incentive with web response request
- Effect of $5 cash incentive with paper response request
- Effect of a second incentive ($2 to $4)
- Effect of out-of-state vs. in-state university sponsorship on response from other states

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The research goal I was pursuing

- We wanted to learn what elements we could hook together and in what way, so that we could get high response rates and response quality (little or no non-response error).

- Perhaps, we thought, a “TDM” could be developed for combining web and mail responses, and not need to mix aural methods that would introduce certain measurement differences.
The “Lewiston/Clarkston study was the first of five experiments testing how we could use mail contacts to push people to respond by the web

- I will go into more detail setting up this study than the other experiments to give you some background on our methods

- This was a regional test in a blue-collar, rural region of the U.S.

- If we can get elements of a method for pushing people to the web to work here, then maybe we can get it to the work elsewhere (e.g., state-wide, national)

The data collection procedures

- 12 page questionnaire, 50 items, up to 80 responses (depending upon branching), a 20-25 minutes survey

- Four contacts
  - Pre-notice letter
  - Questionnaire (or web request)
  - Thank-you post card
  - Replacement questionnaire (adjusted by treatment)

- $5 token cash incentive included with initial mail questionnaire or web request

- Data collected November 7, 2007, to January 10, 2008
We tailored our design to the survey topic and location

- Use of pictures of location to be surveyed
- Creation of common screens for mail and web
- Use of common branding for mail and web
- Choice of stationary, envelopes and content based upon rethinking of personalization strategies given that names could not be used
- Unified-mode construction for mail and web
Tailoring/personalizing the survey to the location and population

- Photos taken of local landmarks, artwork, and symbols to make survey recognizable and visually attractive
For example, consider the cover and back page of the mail questionnaire.
Consider the opening page of the web questionnaire

Lewiston and Clarkston
Quality of Life Survey

An effort to understand the issues important to Lewiston and Clarkston area residents

Hello,

Welcome to the 2007 Lewiston and Clarkston Quality of Life Survey. Your household if part of a sample of Lewiston and Clarkston residential addresses randomly selected to participate in the study. The purpose of the survey is to discover more about how residents are being affected by a variety of things from the availability of jobs and healthcare to the use of cell phones.

Please take just a few minutes to complete this survey by entering in the box below the Personal Access Code we mailed to you.

This study has been reviewed and approved by the WSU Institutional Review Board for human subject participation. If you have questions about the study please contact Thom Allen at don@dillman.com. If you have questions about your rights as a participant please contact the WSU IRB at 509-335-3000 or irb@wsu.edu.

Please enter your Access Code listed in the letter we sent to you:

Submit Personal Access Code

Special thanks to Will Simpson and PalousePhotography.org for the photo used above.

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Design of the web survey—focus on population not sponsor

Example: Question 2

- Similar design format to paper survey, and use of familiar image in upper left-hand corner of the screen.
We used a unified design between mail (on left) and web (on right).
Personalized Correspondence

- All letters used WSU stationary
- Photo of questionnaire cover used to tie different elements together
Exterior of Envelopes (2nd and 4th Contacts)

- Used WSU address labels
- Used a return label showing the photo from survey cover and the survey title to increase familiarity
We compared four treatments

1. **Mail preference with web mention**: Send mail questionnaire and mention web with initial request

2. **Push-to-mail**: Send mail questionnaire but withhold mention of web for about two weeks

3. **Push-to-web**: Web invitation with no mail questionnaire, but explain that mail questionnaire will be sent in about two weeks

4. **Equal preference**: It is your choice!
To simplify things in the next few slides…

- **Push-to-web** means we asked for a web response and withheld a mail option until the 3\text{rd} of 4 contacts.

- **Push-to-mail** means we asked for a mail response and withheld the web option until the 3\text{rd} of 4 contacts.
Initial withholding of mail drove 41% to the web!

<table>
<thead>
<tr>
<th>Treatments</th>
<th>Web (%)</th>
<th>Paper (%)</th>
<th>Total (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mail preference with web mention</td>
<td>4</td>
<td>58</td>
<td>62</td>
</tr>
<tr>
<td>Push-to-Mail (web in third contact)</td>
<td>1</td>
<td>70</td>
<td>71</td>
</tr>
<tr>
<td><strong>Push-to-web</strong></td>
<td><strong>41</strong></td>
<td><strong>14</strong></td>
<td><strong>55</strong></td>
</tr>
<tr>
<td>Mail questionnaire sent in 3(^{rd}) of 4 contacts</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Equal preference (choice)</td>
<td>13</td>
<td>50</td>
<td>63</td>
</tr>
</tbody>
</table>

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Push-to-mail had highest response. Push-to-web had lowest response rate

- When given the initial choice of web or mail in the mail preference with web mention and choice preference groups, few respondents chose web.
From response rates to nonresponse error

- It does not help much to improve response rates if our respondents are different from non-respondents on variables important to the study objectives.

- Thus, we need to compare respondent characteristics on web vs. mail within the different treatment groups.
In the push-to-web treatment, web and mail respondents demographics were quite different.
Web and mail respondents in the push-to-web group were also different on 7 of 24 substantive attitude/opinion items

<table>
<thead>
<tr>
<th></th>
<th>Responded by Mail</th>
<th>Responded by Web</th>
<th>Diff.</th>
</tr>
</thead>
<tbody>
<tr>
<td>% attached to the area</td>
<td>90.0</td>
<td>80.4</td>
<td>-9.6</td>
</tr>
<tr>
<td>% think willingness for community involvement has increased</td>
<td>47.7</td>
<td>31.7</td>
<td>-16.0</td>
</tr>
<tr>
<td>% think fish population increased</td>
<td>18.9</td>
<td>38.0</td>
<td>19.1</td>
</tr>
<tr>
<td>% more internet use improves quality of life</td>
<td>43.4</td>
<td>62.1</td>
<td>18.7</td>
</tr>
<tr>
<td>% think more cell use improves quality of life</td>
<td>26.9</td>
<td>44.1</td>
<td>17.2</td>
</tr>
<tr>
<td>% think environmental protection is too weak</td>
<td>16.3</td>
<td>30.7</td>
<td>14.4</td>
</tr>
<tr>
<td>% gray wolves not threat to domestic animals</td>
<td>2.5</td>
<td>9.9</td>
<td>7.4</td>
</tr>
</tbody>
</table>

Red indicates significant difference at .05 level.
But the complete **push-to-web** group was quite similar to the complete **push-to-mail** treatment.

* *p* ≤ .05
Conclusions from 2007 Lewiston-Clarkston study

- Web on its own brings in specific types of respondents and leaves others out
- Our best chance of reducing nonresponse error from a web study is to include a mail option
- Web and mail used together brings in a wider range of respondents – comparable to mail used alone
Next studies: Moving from regional to state-wide data collection (WCS & WES)

- Tests aimed at isolating factors that affected response
- A similar model was used, i.e. personalize questionnaire to the state with pictures
- We pushed to the web by withholding mail: the push-to-web method (also known as web+mail)
2008 Washington Community Survey (WCS)

- Continued building on LCS study

- New question: Will using a $5 incentive with the request increase response rates over the web?

2008 Washington Community Survey (WCS)

- Example of the mail version:
Response rate trends similar to 2007 LCS; we can “push” 2/3 of responses to web, but lose overall response (46% vs. 57%)
We also tested the effects of a $5 incentive – the incentive was very effective at increasing response rates, especially for push-to-web groups.

* p ≤ .05
Demographic trends in the push-to-web group were similar to 2007 LCS. Web and the mail follow-up brought in different kinds of respondents.

* p ≤ .05
Again, the combined push-to-web group was demographically similar to the mail-only group.
Our estimates compared to the American Community Survey (ACS) – the push-to-web group was more representative than the web-only group.
Continued building on prior studies (LCS & WCS)

New question:
- Will sending the mail follow-up with a second $5 incentive and in a Priority Mail (PM) envelope increase response rates?
2009 WES- connecting visually with the sample

- Example of the mail version:

Are You Better or Worse Off Than A Year Ago?

A study of how households throughout Washington may have been affected by changes in the economy.

To be completed by an adult at this address with knowledge of the household’s economic situation since September 2008.

Social and Economic Sciences Research Center
Washington State University
Pullman, WA 99164
1-800-833-0867

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Using Priority Mail + a second $5 incentive increased response rates, particularly for the mail-only group; the effect was due entirely to incentive.
Next steps: Comparing web vs. mail item non-response in the push-to-web groups for LCS, WCS, and WES

- Item nonresponse rates lower for web
But, **push-to-web and mail-only groups have overall item nonresponse rates that are similar** – partly a function of respondent characteristics.
Mail-only was less expensive than push-to-web because pushing to web required postal contact, incentives, & obtained a lower response rate.

Average WCS & WES costs/respondent

![Cost/Respondent Chart]

- Push-to-web: $39.05
- Mail-only: $30.26

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In the WES, the response times were longer when web was used.

2009 WES response times

- 10) $5 Web+Mail
- 11) $5 Web+Mail PM
- 12) $5 Web+Mail PM+$5
- 13) $5 Mail-only
- 14) $5 Mail-only PM
- 15) $5 Mail-only PM+$5

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Why was web more expensive?

- Fewer respondents for allocating costs.
- Web survey construction was not free. I had to pay for that staff time and network costs just as any outside survey sponsor would have to pay.
- The mailing costs were about the same, leaving only data entry costs for mail as the major cost difference.
Additional limitations of the WCS & WES

- Conducted for local **statewide population** in same state as the sponsor
  - It also had higher than average Internet penetration and levels of SES (vs. U.S.)
- Can we survey in other states with similar results, and push even harder for web (withhold mail through three mailings)?
2011 Tri-State Electricity Survey (TSES)

- Continued building on prior studies (LCS, WCS, WES)

- New questions:
  - Can push-to-web (web+mail) be used effectively in...
    - 1) More distant states?
    - 2) States with lower SES and Internet access?
  - Is 2web+mail (withholding mail to 4\textsuperscript{th} contact) more effective for pushing respondents to the web than is introducing mail in the 3\textsuperscript{rd} contact.
States in the 2011 Electricity Survey

- Examples of the mail covers:

**How Will Alabama’s Future Electricity Needs Be Met?**
A survey of what residents think should and should not be done to meet growing future electricity needs across the state.

**How Will Pennsylvania’s Future Electricity Needs Be Met?**
A survey of what residents think should and should not be done to meet growing future electricity needs across the state.

**How Will Washington’s Future Electricity Needs Be Met?**
A survey of what residents think should and should not be done to meet growing future electricity needs across the state.

To be completed by the adult (age 18 and older) in your household who has had the most recent birthday.

Social and Economic Sciences Research Center
Washington State University
Pullman, WA 99164
1-800-833-9687
Push-to-web was less effective in more distant states, especially in state with lower SES & Internet access

- Alabama: lower Internet penetration and SES, also distant
- Pennsylvania: demographically similar but distant
- Washington: control population
Key observation:

- I began to worry at this point, about the effect of web requests from unknown sources.
- The web is a scary place! People worry about viruses. How do I make these contacts for a web response legitimate and effective?
Just a reminder plus one more definition

- **Push-to-mail** means we asked for a mail response and withheld the web option until the 3\textsuperscript{rd} of 4 contacts.
- **Push-to-web (web+ mail)** means we asked for a web response and withheld a mail option until the 3\textsuperscript{rd} of 4 contacts
- A **double push-to-web (2web+mail)** means we withheld mail to the 4\textsuperscript{th} and final contact.
A double push-to-web (hold mail to 4th contact) was more effective than web+mail in Pennsylvania, but not in Washington

- **Web+mail:**
  1) $5 Web request, 2) reminder, 3) $2 Mail follow-up, 4) Reminder

- **2Web+Mail:**
  1) $5 Web request, 2) Reminder, 3) $2 Web request, 4) Mail follow-up
Conclusions from Tri-state study

- Was there a backlash against web? No. A very small number of respondents called to request a paper questionnaire.
- 2web+mail may be the best design for increasing web response rates, particularly in more distant populations.
- In WA, the web+mail design performed even better than in the 2008 & 2009 statewide studies (WCS, WES).
  - However, in PA and AL, only about 1/3 of web+mail respondents chose web, and total web+mail response rates were significantly lower than in WA.
2012 Water Management Survey in Washington and Nebraska

- Continued building on prior studies (LCS, WCS, WES, TSES)
- We have now adopted the double push-to-web (2web+mail) for all designs
- New questions:
  - Is within-state university sponsorship more effective at obtaining responses than out-of-state university sponsorship?
    - 1) Does mode matter, when great distances between sponsor and sampled households exist?
Sponsorship can influence response rates and nonresponse error

- Government and universities tend to obtain higher response rates than surveys sponsored by commercial organizations or private businesses (e.g., Heberlein and Baumgartner 1978)
- Support for a survey sponsor can also influence nonresponse bias (Groves et al. 2012)
- University-sponsored surveys tend to produce less biased, more representative population estimates than surveys sponsored by private organizations (Groves et al. 2012; Jones and Lang 1980)
- But, most of the experiments on sponsorship have considered populations located in the same state or region as the university sponsors
How do residents respond to an out-of-state sponsor vs. a within-state sponsor?
2012 Water Management Survey

- Examples of the mail covers:
Within-state sponsored surveys achieved higher response rates than out-of-state sponsored surveys in both states and across both modes.
When we combined data across states, we found the same trends; also mail-only groups obtained higher response rates than 2web+mail groups.

Local (within-state) sponsor:
- Mail-only: 54% (Mail Returns)
- 2Web+Mail: 48% (Web Returns, 13.2% Mail Returns)

Distant (out-of-state) sponsor:
- Mail-only: 47% (Mail Returns)
- 2Web+Mail: 38% (Web Returns, 13.1% Mail Returns)
In sum, within-state-sponsored surveys obtained higher response rates than out-of-state-sponsored surveys

- We see similar patterns across Washington and Nebraska and across the two modes.
- Within-state-sponsored surveys (as compared with out-of-state-sponsored surveys) achieve about:
  - 4-10% higher response rates for mail-only groups
  - 6-15% higher response rates for web groups of the 2web+mail mode
  - Same response rates for mail groups of the 2web+mail mode
Final summary: What did we learn from the five studies?

1. Lewiston, ID-Clarkston, WA Regional Study 2007
2. Washington Community Survey 2008
4. WA, PA, AL Tri-state electricity Survey 2011
5. WA and NE Water Management Survey 2012
Response rates for push-to-web versus mail-only (or mostly) designs, 2007-2011 studies

Response Rates for Mail-Only vs. a Web+mail (withhold mail from first two contacts)

Lewiston-Clarkston: 71% Mail Returns, 41% Web Returns
Washington Community: 57% Mail Returns, 31% Web Returns
Washington Economic: 68% Mail Returns, 18% Web Returns
Washington Electricity: 50% Mail Returns, 28% Web Returns
Pennsylvania Electricity: 46% Mail Returns, 22% Web Returns
Alabama Electricity: 38% Mail Returns, 20% Web Returns

c Don A. Dillman December 2013
Response rates for more stringent tests of 2web+mail vs. mail-only designs, 2011-2012 studies

Mail-Only vs. 2Web+Mail
(withhold mail until fourth contact)

- Washington Electric: 50% Web, 12% Mail
- Pennsylvania Electric: 46% Web, 18% Mail
- Washington Water: 50% Web, 11% Mail
- Nebraska Water: 51% Web, 15% Mail

Source: Don A. Dillman December 2013
Summary of findings (1)

1. Response rates 53% (71% to 38%) across 10 postal-only treatments on various state populations (Washington to Alabama).

2. Response rates 43% (55% - 31%) across 10 push to web treatment groups.

3. There are significant differences between web and mail respondents (education, age, income, marital status).

4. Demographically, the web+mail treatment respondents are similar to mail-only respondents.

5. A web+mail approach results in an average of about 62% of responses coming in over the web.
Summary of findings (2)

6. Offering a choice of modes in the first contact (mail vs. web) lowers response rates.

7. Offering a choice of modes results in a much greater proportion (80%) of responses coming in by mail.

8. A $5 token cash incentive with an initial web request (paper alternative withheld) dramatically improves web and total (31% vs. 13%) response rates.

9. A second cash incentive in the 3rd or 4th contact also improves response rates by 5-10 percentage points.
What if we have email as well as mail contact?

● Student surveys provide a test opportunity.
● At my university it’s optional to provide address updates—multiple modes of contact increases the likelihood of reaching people.
● An initial experiment showed that with mail contact only, paper response highest (52%), offering web only lowest (42%) and offering choice was intermediate (48%).
● Results were not surprising.
● But what if we add email contact?
We tried to do this through two experiments

- Student sample surveys at Washington State University (we had both email and postal contact information).
- Repeated surveys by email contact only requesting web responses have obtained 20% response rates on average.
- Different approaches were used, the rationales for which came from a social exchange perspective.
These experiments tried to bring together 1) choice, 2) mode sequencing, 3) preference, and 4) mode of contact

- Needed multiple contact modes.
- Student samples at Washington State University had virtually complete email and postal address coverage.
- Historical data: Repeated surveys of this population using email only contact had response rates of about 20%.
Study 1. Postal-only contact for 3 of 4 treatments to test choice vs. forced mode

1. Choice
   - Postal request to respond by *mode of choice* (web or mail)

2. Mail
   - Postal request to respond via *mail*

3. Web
   - Postal request to respond via *web*

4. Web with Email Augmentation
   - Postal request to respond via *web*, with *link to website* sent by email 3 days later

n=700 in each group

(Millar and Dillman, 2011, POQ. Improving response to Web and Mixed-Mode Surveys)
Study 1 implementation strategy; mail-only contact except column 2 and 5!

<table>
<thead>
<tr>
<th></th>
<th>2/13 Postal Invitation</th>
<th>2/18 Email</th>
<th>2/20 Thank-you</th>
<th>3/6 Replacement</th>
<th>3/10 Email</th>
<th>4/6 Mode Switch</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Choice</td>
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<td>2. Mail</td>
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<td>4. Web + Email Augment.</td>
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</table>

■ Request for Mail Response, ▲ Request for Web Response, $ Incentive included
Response Rates: Mail > Choice > Web; Web with email augmentation has highest response

\[ p = .001 \]
Additional response obtained after final “mode switch” contact

![Graph showing response rates after mode switch]

- Mail: 51.3% (p=.246)
- Web: 42.3% (p=.002)
- Web + Email: 59.7% (p=.036)
Advancing From Test 1 to Test 2

- The email augmentation that offers ‘easy link” to the web is powerful.
- Test 2 expands the possibilities with email augmentation (quick email follow-up to postal contact to see if we could overcome the limitations of “choice” (which tends to lower response rates).
Treatment groups: Tests of email plus postal contacts on response rates (with and without $2)

<table>
<thead>
<tr>
<th>Requested Mode of response</th>
<th>Nov 9/10 Invitation</th>
<th>Nov 12/13 Invite prompt</th>
<th>Nov 18/19 Thank you/ reminder</th>
<th>Dec 7/8 Replacement</th>
<th>Dec 10/14 Replacement prompt</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Choice</td>
<td>$</td>
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<td>2. Choice</td>
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<td>3. Mail</td>
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<td>7. Web</td>
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</tbody>
</table>

- **Contact sent via MAIL**
- **Contact sent via EMAIL**
- **$2 Incentive included**
Response Rates from 2009 Test

<table>
<thead>
<tr>
<th>Choice of Mail/Web Response</th>
<th>Mail Response</th>
<th>Web Response</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Choice: email aug.</td>
<td>46.5</td>
<td></td>
</tr>
<tr>
<td>3. Mail</td>
<td>43.9</td>
<td></td>
</tr>
<tr>
<td>4. Web: email aug.</td>
<td>42.5</td>
<td></td>
</tr>
<tr>
<td>2. Choice</td>
<td>41.1</td>
<td></td>
</tr>
<tr>
<td>5. Web: postal invite/$</td>
<td>38.2</td>
<td></td>
</tr>
<tr>
<td>6. Web: postal invite/no $</td>
<td>21.2</td>
<td></td>
</tr>
<tr>
<td>7. Web: email only</td>
<td>20.5</td>
<td></td>
</tr>
</tbody>
</table>
Additional Example of The Power of Email Augmentation

- Email augmentation, a quick email following a postal request to “make it easier for you to respond” overcomes the problem of offering choice.
- But, can we regularly apply this to other surveys?
- We included this idea in a survey of graduate students working on dissertations.
A 2013 Survey of Graduate Students Working on Dissertations

- Day 1 - Postal request to respond over the Internet
- Day 4 - Email Augmentation
- Day 8 - Email followup
- Day 16 - Postal Follow-up with mail questionnaire
- Day 21 - Final Email follow-up

A paper questionnaire was mailed on April 14th.
Q15. Do the theories, concepts, and/or perspectives you use to shape your dissertation research questions:
- All come from one field of study
- Mostly come from one field but a few from other fields
- Come extensively from more than one field

Q16. Do the methods, tools, techniques, and/or data used in your dissertation research:
- All come from one field of study
- Mostly come from one field but a few from other fields
- Come extensively from more than one field

Q17. Will the implications of your dissertation research be relevant or applicable to one field or multiple fields?
- One field
- Multiple fields

Q18. Have you either presented, or plan to present, your dissertation research at conferences that are designed to bring together researchers from multiple fields?
- No
- Yes

Q19. Have you either published, or think you might publish, your dissertation research in a journal (or other outlet) that speaks to multiple fields?
- No
- Yes

Q20. Would you say that your dissertation research qualifies (albeit) elements of multiple fields in order to create common ground between them?
- No
- Yes

Please explain your answer to the above question.

Q21. What is the name of the WGU department, program, center, or committee that supervises your doctoral studies?

Q22. How much training would you say your doctoral program has provided you in each of the following?
- Developing original research questions
- Designing and conducting data analysis
- Designing and teaching your own classes
- Preparing and delivering presentations or conferences or meetings
- Preparing and submitting research manuscripts for publication
- Preparing and submitting your proposal
- Preparing job application materials
- Preparing for job interviews

Q23. How would you rate the guidance your program provides to its doctoral students for each of the following issues?
- Writing an advisor
- Working with committee
- Overseeing dissertation to successful degree completion
- Preparing appropriate balance between work, family, and personal/final stage

Q24. To what extent does each of the following statements describe the students in your doctoral program?
- The students are supportive of each other
- There is high morale amongst students
- Students are confident about their future job prospects
Email Augmentation of letter+$2 pushed response rates up 21 percentage points in 10 hours

WSU PhD Experience Survey
Mar 30 - May 26, 2013
Clock Time and Response Rate Over Time

- Postal Invite +$2 and URL March 29
- Email April 7, 9:50
- Email April 13, 14:00
- Paper Questionnaire April 15
- Email April 19, 13:00
Elaboration

- Final response was 77%
- Response rate increased an additional 12 percentage points after postal questionnaire sent; ½ respondents by paper and ½ by web.
- The paper questionnaire went to 200 individuals, 32% responded.
- The mixed-mode approach with email augmentation was quite effective.
Bringing the parts together

- 10-15 years ago when I would talk about surveying the general public the “telephone” was the usual choice.
- Now, it’s not.
- Mixed mode, pushing to web by withholding mail is a more likely choice.
- We need more innovative research to help the web reach it’s potential, but to do that means letting go of the telephone, but continuing to build on past research.
Looking to the future

- Survey methods have changed throughout my career and will continue to change.
- **Visual design** has become increasingly important as we have become and are likely to remain more “self-administered”
- Many of the ideas I have discussed today will be in the 4th edition of the TDM book: Dillman, Smyth, and Christian, Internet, Telephone, Mail and Mixed-Mode Surveys; The Tailored Design Method. John Wiley.
For Additional Information

- For additional information on these studies contact Don Dillman at: dillman@wsu.edu

- Web page information is at:
  http://www.sesrc.wsu.edu/dillman/

- Postal address:
  Don A. Dillman, Ph.D.
  133 Wilson Hall
  Washington State University
  Pullman, WA 99163-4014
  United States of America
Acknowledgements

- I wish to express my thanks to these former graduate assistants all of whom contributed significantly to this line of research while at Washington State University: Michael Stern, Leah M. Christian, Jolene D. Smyth, Arina Gertseva, Taj Mahon-Haft, Bryan Rookey, Nicholas Parsons, Allison O’Neill, Benjamin L. Messer, Morgan Millar and Michelle L. Edwards.

- I also want to acknowledge the staff of the Washington State University Social and Economic Sciences Research Center (SESRC) who provided the experimental capability and expertise essential for designing and implementing the experiments, selected results of which are reported here.


7. Messer, Benjamin L. 2012. “Pushing households to the web: Results from Web+mail experiments using address based samples of the general public and mail contact procedures.” Ph.D. Dissertation. Washington State University, Pullman.

Thank you!

Don A. Dillman, Washington State Univ. Social and Economic Sciences Research Center and Department of Sociology

Contact: dillman@wsu.edu
http://www.sesrc.wsu.edu/dillman/