# 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

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By

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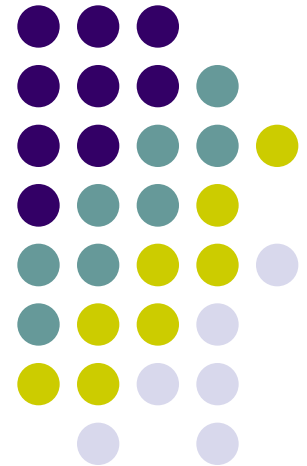
Thank you!

- 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 2 ½ 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 <u>in stores</u>.
- 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 <u>not</u> all effects of telephone interviewing were positive
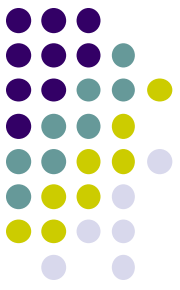
- No visual support
- Shorter utterances used to achieve comprehension
- Utterances had to include query + answer choices
- Extreme branching used to shorten utterances
- More emphasis was placed on good interviewer support
- Interviewer effects potentially resulted in biased answers
  - Social desirability
  - 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 <u>response</u> 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 <u>not</u> 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 <u>not</u> 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?
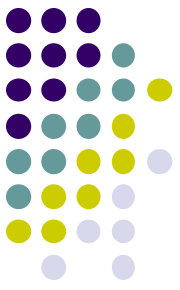
- Some are, but some are not, and others are simply out-of-date

- Few of the concerns apply to every survey

- But, there are situations in which I would <u>not</u> 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)
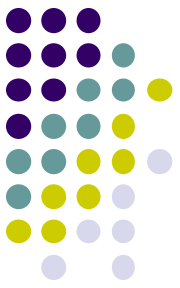
Results of many experiments on Decennial Census forms in 1990's

- Sixteen factors tested: five improved response rates
  - Pre-notice letter
  - Reminder postcard
  - Replacement questionnaire
  - Respondent-friendly questionnaire
  - Notice on envelope that response was <u>mandatory</u>
- 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: <u>Coverage</u>
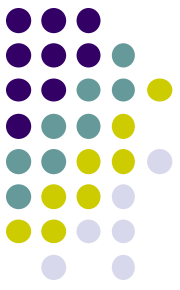
- The U.S. Postal Service "Delivery Sequence File" includes 95-97% of all residential addresses in the U.S.

- 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 decline 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
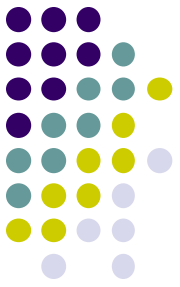
- 170 surveys were conducted each year from1988-2007, under the direction of Gary Machlis and Margaret Littlejohn (http://psu.uidaho.edu)

- 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.
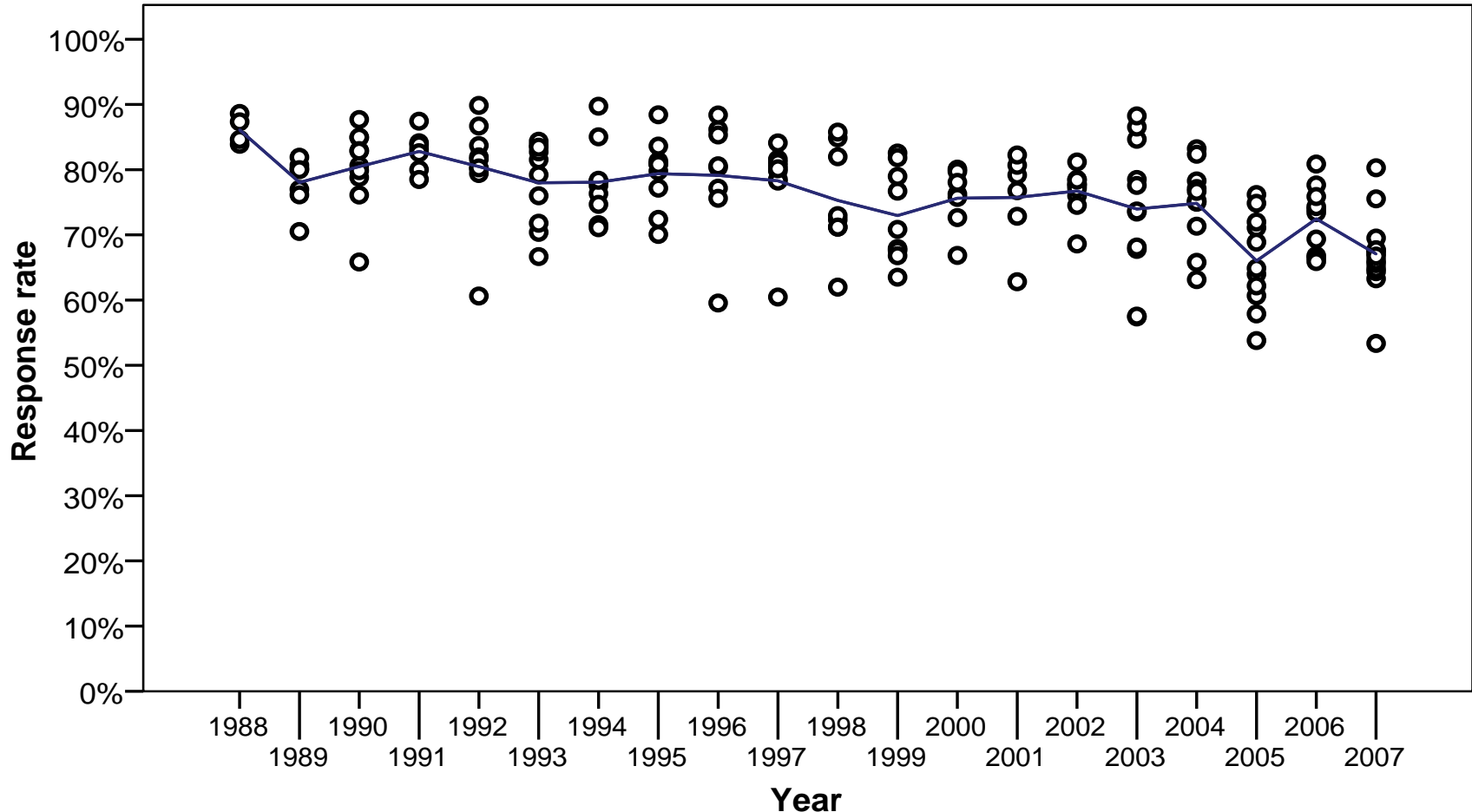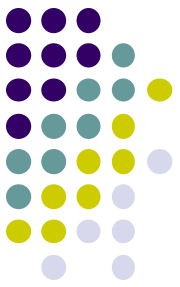
Have response rates declined?

- 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

items per page

Year
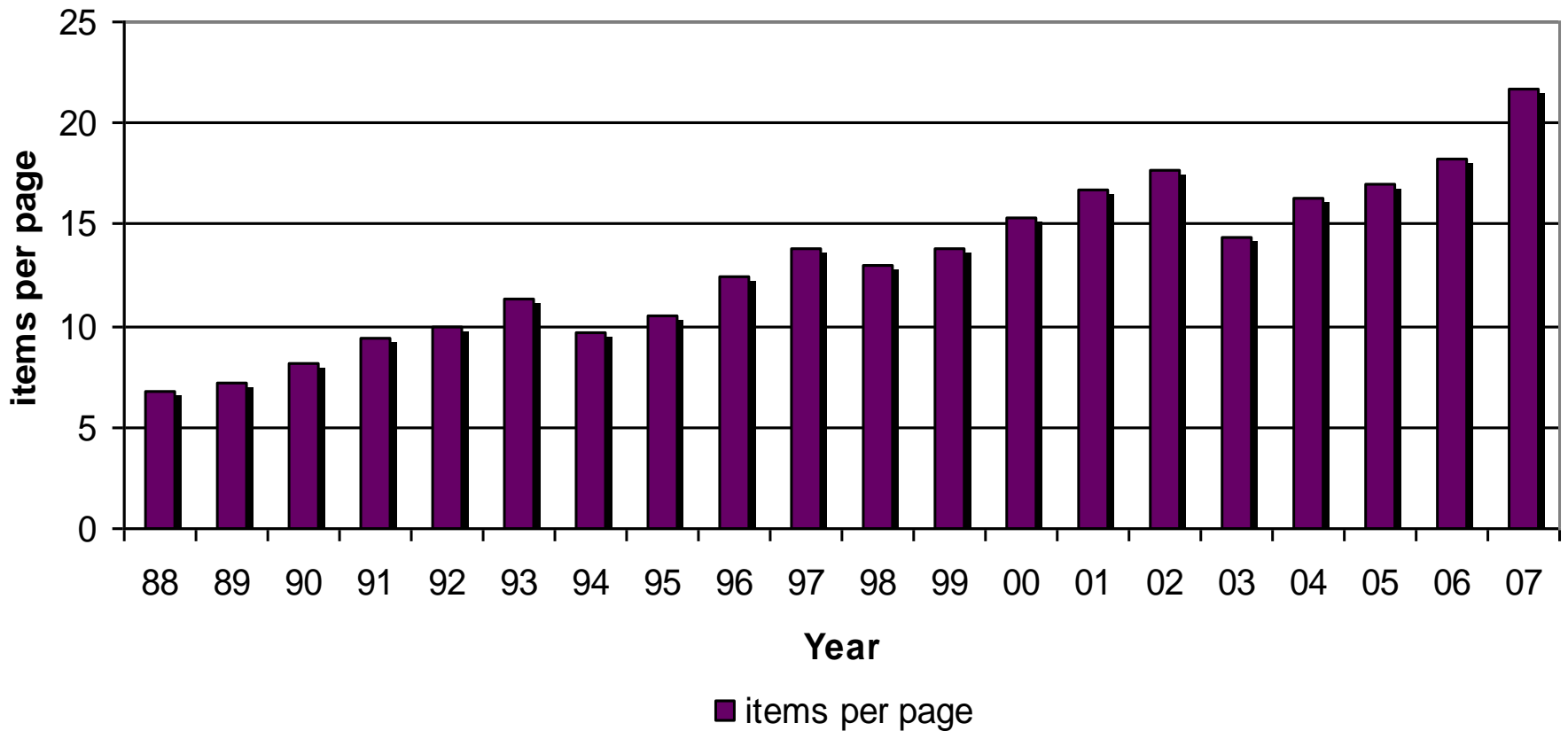
The number of *pages* and total *items* increased over time
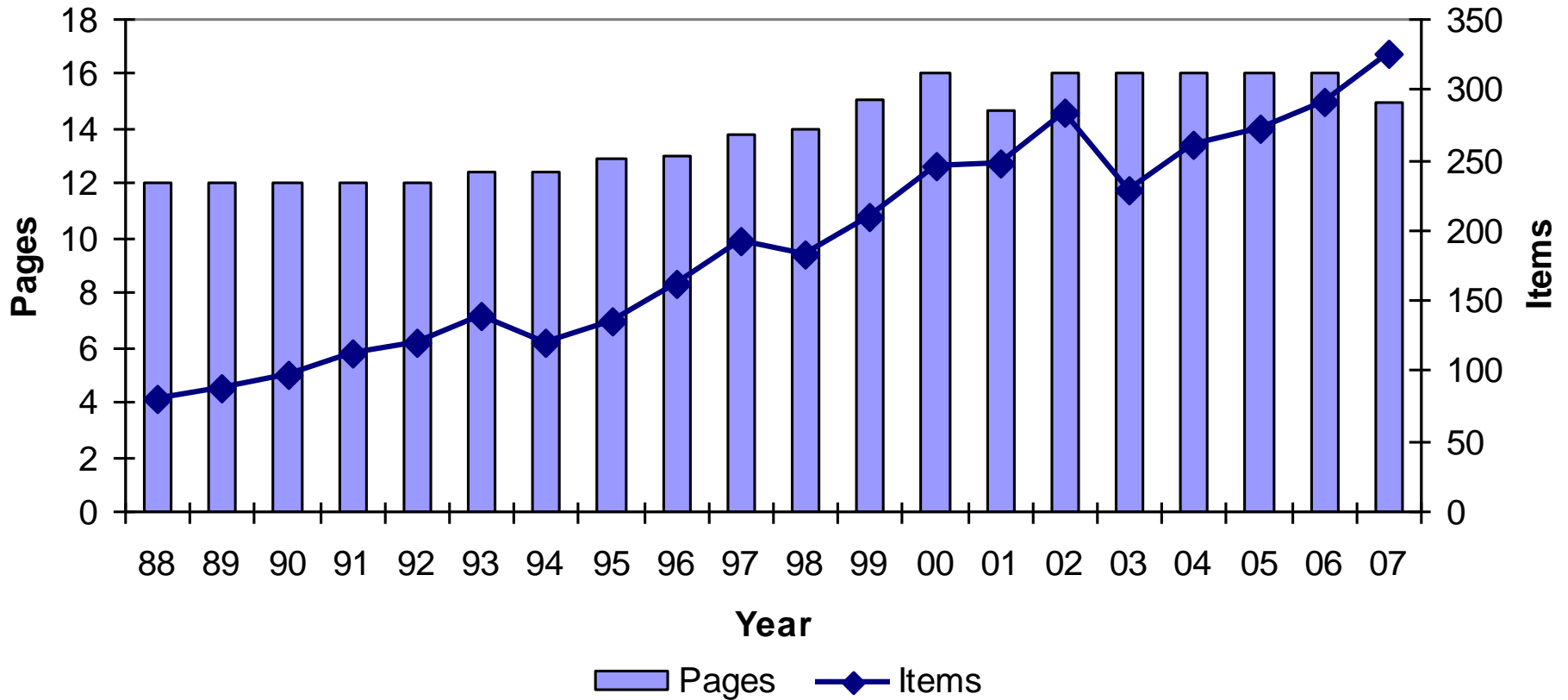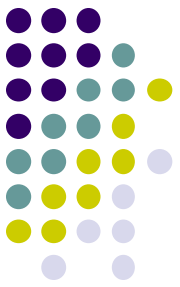
The average number of replacement questionnaires increased over time

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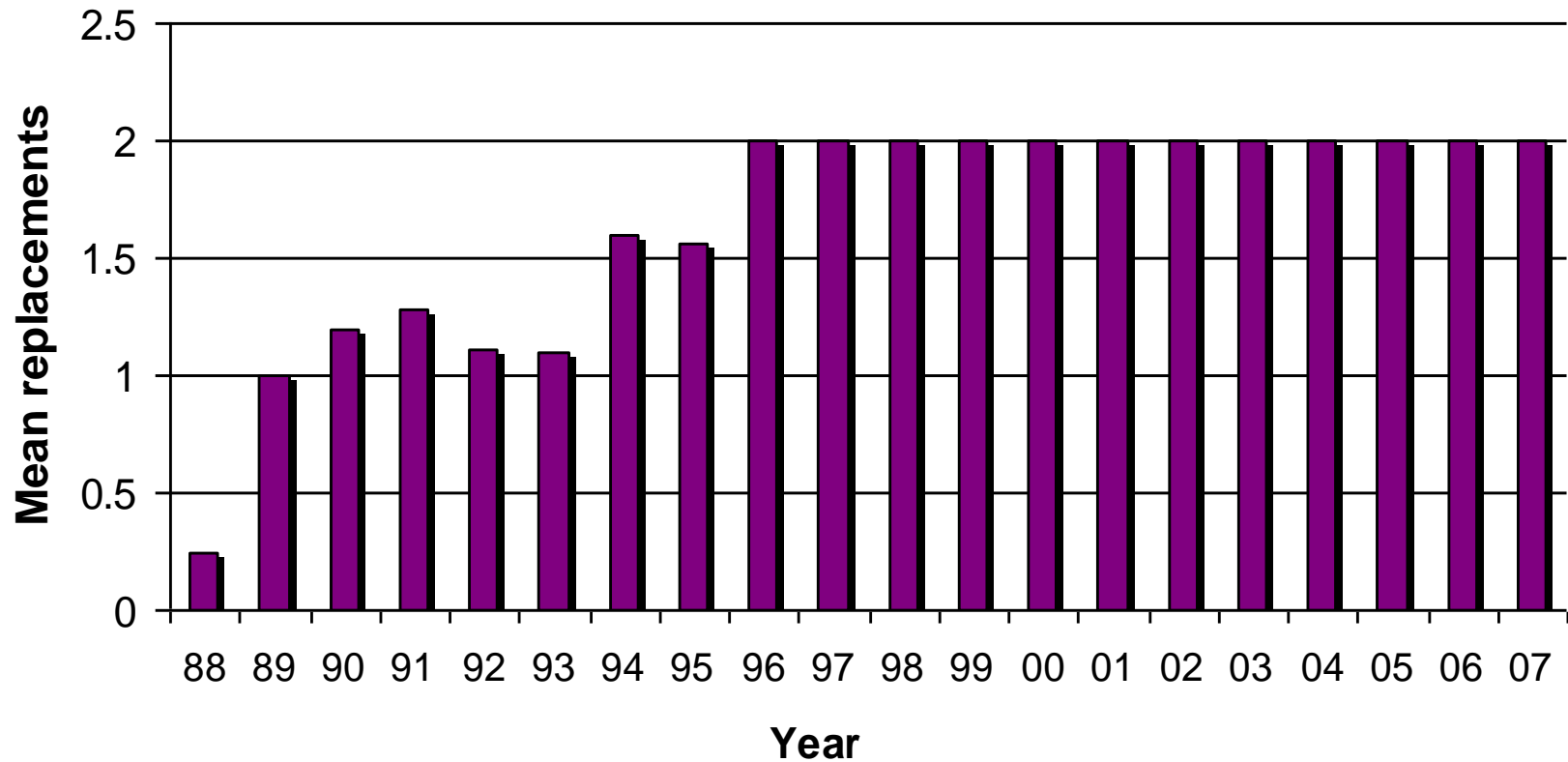
What have we learned?
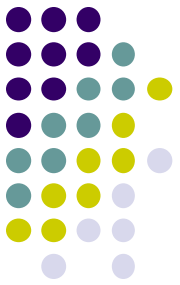
- <u>Mail-only</u> methods can still work fairly well

    (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. <u>Social Science Research</u> 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?
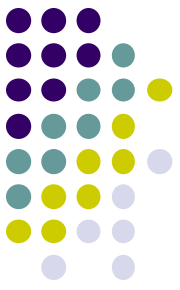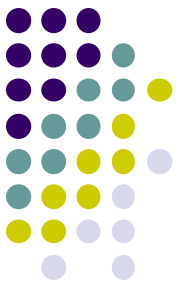
Response rates by Contacts and Incentives

Incentive	1st Mailing (%)	2nd Mailing (%)	3rd Mailing (%)	4th Mailing (%)
No incentive	20.7	36.7	46.7	52.0
$1 Cash	40.7	52.0	61.3	64.0
$5 Cash	48.7	60.7	66.7	71.3
$5 Check	52.0	62.7	66.7	67.3
$10 Check	44.0	56.7	62.0	66.7
$20 Check	54.0	70.7	75.3	79.3
$40 Check	54.0	63.3	66.0	69.3
Promise of $50	23.3	43.3	53.3	56.7

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 <u>age</u> and <u>incentives</u> for 1993 Survey of Washington State New Drivers License Holders

Legend:
- With $2
- Without $2
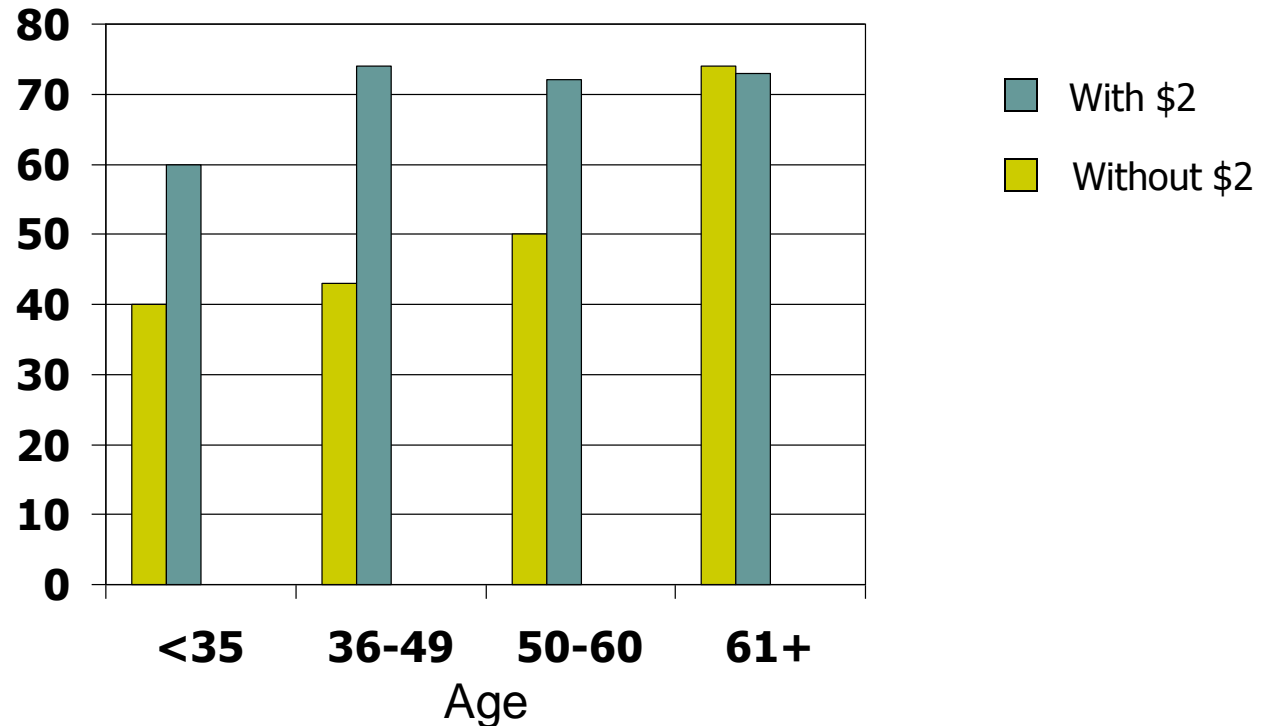
The kind of incentive makes a big difference in results

- 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 <u>less costly</u> in terms of data entry and postage than mail response

- It is possible web response can be obtained <u>more quickly</u> 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 <u>less costly</u> in terms of data entry and postage than mail response

- It is possible web response can be obtained <u>more quickly</u> 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)
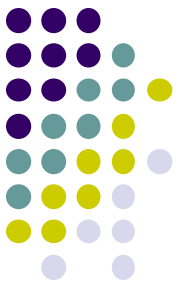
1. Lewiston, ID-Clarkston, WA Survey   2007
2. Washington Community Survey   2008
3. Washington Economic Survey   2009
4. WA, PA, AL Tri-state Electricity Survey   2011
5. WA and NE Water Management Survey   2012

Within these studies, sample sizes in each treatment group ranged from about 400 to 1000 households
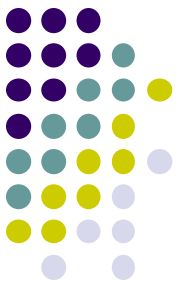
1. **Lewiston, ID-Clarkston, WA Survey**

   (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 <u>web</u> response request
- Effect of $5 cash incentive with <u>paper</u> 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

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.

2007 Lewiston, ID- Clarkston, WA Study: The prototype

- 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)
- (Smyth, J.D., Dillman, D.A., Christian, L.M., & O'Neill, A. 2010. "Using the Internet to survey small towns and communities: Limitations and possibilities in the early 21st century." American Behavioral Scientist. 53: 1423-1448.)

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 ted@wsu.edu. If you have questions about your rights as a participant please contact the WSU IRB at 509-335-3668 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.

Design of the web survey—focus on population not sponsor

<u>Example</u>: Question 2
- Similar design format to paper survey, and use of familiar image in upper left-hand corner of the screen.
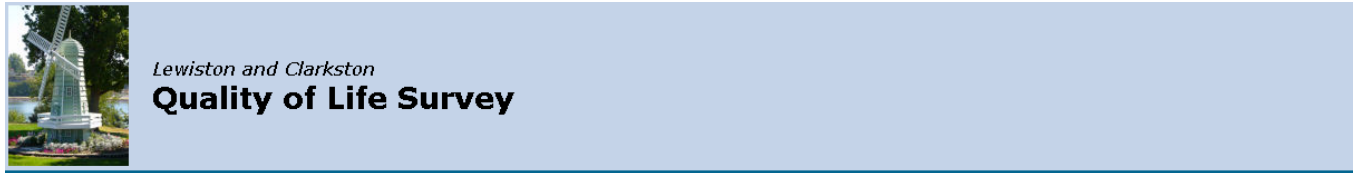
Lewiston and Clarkston
Quality of Life Survey

Question 2 of 51
Overall, how satisfied are you with living in this area?

○ Very satisfied
○ Somewhat satisfied
○ Neutral
○ Somewhat dissatisfied
○ Very dissatisfied

○ Not sure

[Next >>]   [<< Back]

Contact us: sesrc3web@wsu.edu 1-800-833-0867 | - © SESRC 2007
Social and Economic Sciences Research Center, 130 Wilson Hall, Washington State University, Pullman, WA, 99164-4014 USA

We used a unified design between mail (on left) and web (on right)

Mail version (left):

Q1. Approximately how many years have you lived in the Lewiston-Clarkston area?

[ ] Years

Q2. Overall, how satisfied are you with living in this area?

- ○₁ Very satisfied
- ○₂ Somewhat satisfied
- ○₃ Neutral
- ○₄ Somewhat dissatisfied
- ○₅ Very dissatisfied
- ○₆ Not sure

Q3. How attached do you feel to the Lewiston-Clarkston area?

- ○₁ Very attached
- ○₂ Somewhat attached
- ○₃ Slightly attached
- ○₄ Not at all attached
- ○₅ Not sure

Q4. During the past five years, how much better or worse do you think Lewiston-Clarkston has become as a place to live?

- ○₁ A lot better
- ○₂ Somewhat better
- ○₃ No change
- ○₄ Somewhat worse
- ○₅ A lot worse
- ○₆ Not sure

Q5. How much better or worse do you think the local economy has become in the past five years?

- ○₁ A lot better
- ○₂ Somewhat better
- ○₃ No change
- ○₄ Somewhat worse
- ○₅ A lot worse
- ○₆ Not sure

Q6. How much better or worse do you think the area's natural environment has become in the past five years?

- ○₁ A lot better
- ○₂ Somewhat better
- ○₃ No change
- ○₄ Somewhat worse
- ○₅ A lot worse
- ○₆ Not sure

Web version (right):

Question 1 of 51
Approximately how many years have you lived in the Lewiston-Clarkston area?

[ ] Years

[Next >>]   [<< Back]

Question 2 of 51
Overall, how satisfied are you with living in this area?

- ○ Very satisfied
- ○ Somewhat satisfied
- ○ Neutral
- ○ Somewhat dissatisfied
- ○ Very dissatisfied
- ○ Not sure

[Next >>]   [<< Back]

Question 3 of 51
How attached do you feel to the Lewiston-Clarkston area?

- ○ Very attached
- ○ Somewhat attached
- ○ Slightly attached
- ○ Not at all attached
- ○ Not sure

[Next >>]   [<< Back]

Question 4 of 51
During the past five years, how much better or worse do you think Lewiston-Clarkston has become as a place to live?

- ○ A lot better
- ○ Somewhat better
- ○ No change
- ○ Somewhat worse
- ○ A lot worse
- ○ Not sure

[Next >>]   [<< Back]

Question 5 of 51
How much better or worse do you think the local economy has become in the past five years?

- ○ A lot better
- ○ Somewhat better
- ○ No change
- ○ Somewhat worse
- ○ A lot worse
- ○ Not sure

[Next >>]   [<< Back]

Question 6 of 51
How much better or worse do you think the area's natural environment has become in the past five years?

- ○ A lot better
- ○ Somewhat better
- ○ No change
- ○ Somewhat worse
- ○ A lot worse
- ○ Not sure

[Next >>]   [<< Back]

Personalized Correspondence

- All letters used WSU stationary

- Photo of questionnaire cover used to tie different elements together

Washington State University

Social and Economic Sciences Research Center
Wilson Hall 133; P.O.Box 644014
Pullman, WA 99164-4014
509-335-1511
Fax 509-335-0116

October 8, 2007

<CITY> Area Resident
<ADDRESS>
<CITY>, <STATE> <ZIP-ZIP4>

Dear <CITY> Area Resident,

I am writing to ask for your help in understanding the quality of life in the Lewiston/Clarkston area and how residents are being affected by a variety of things from the availability of jobs and healthcare to the use of cell phones. The best way we have of learning about these issues is by asking all different kinds of people who live in the area to share their thoughts and opinions. Your address is one of only a small number that have been randomly selected to help in this study.

To help us make sure we hear from all different types of people who live in the area, please have the adult (age 18 or over) in your household who has had **the most recent birthday** be the one to complete the enclosed questionnaire.

The questions should only take about 15 minutes to complete. Your responses are voluntary and will be kept confidential. Your names are not on our mailing list, and no one's answers will ever be associated with the mailing address. If you have any questions about this survey of Lewiston/Clarkston area residents, please call Thom Allen, the study director, by telephone at 509-335-1511 or by email at sesrc@wsu.edu. This study has been reviewed and approved by the Washington State University Institutional Review Board, and if you have any questions about your rights as a participant in this study, you may contact them by telephone at 509-335-3668.

By taking a few minutes to share your thoughts and opinions about life in the Lewiston-Clarkston area you will be helping us out a great deal, and a small token of appreciation is enclosed as a way of saying thank you.

I hope you enjoy completing the questionnaire and look forward to receiving your responses.

Many Thanks,

Don A. Dillman
Regents Professor and Deputy Director

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

Quality of Life in the Lewiston and Clarkston Area

WASHINGTON STATE
UNIVERSITY

SESRC
PO Box 644014
Pullman, WA 99164

To:

We compared four treatments

1. <u>Mail preference with web mention</u>: Send mail questionnaire and mention web with initial request

2. <u>Push-to-mail</u>: Send mail questionnaire but withhold mention of web for about two weeks

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

4. <u>Equal preference</u>: It is your choice!

To simplify things in the next few slides…

- <u>Push-to-web</u> means we asked for a web response and withheld a mail option until the 3rd of 4 contacts.

- <u>Push-to-mail</u> means we asked for a mail response and withheld the web option until the 3rd of 4 contacts.

Initial withholding of mail drove 41% to the web!

Treatments	Web (%)	Paper(%)	Total (%)
Mail preference with web mention	4	58	62
Push-to-Mail (web in third contact)	1	70	71
Push-to-web Mail questionnaire sent in 3rd of 4 contacts	**41**	**14**	**55**
Equal preference (choice)	13	50	63

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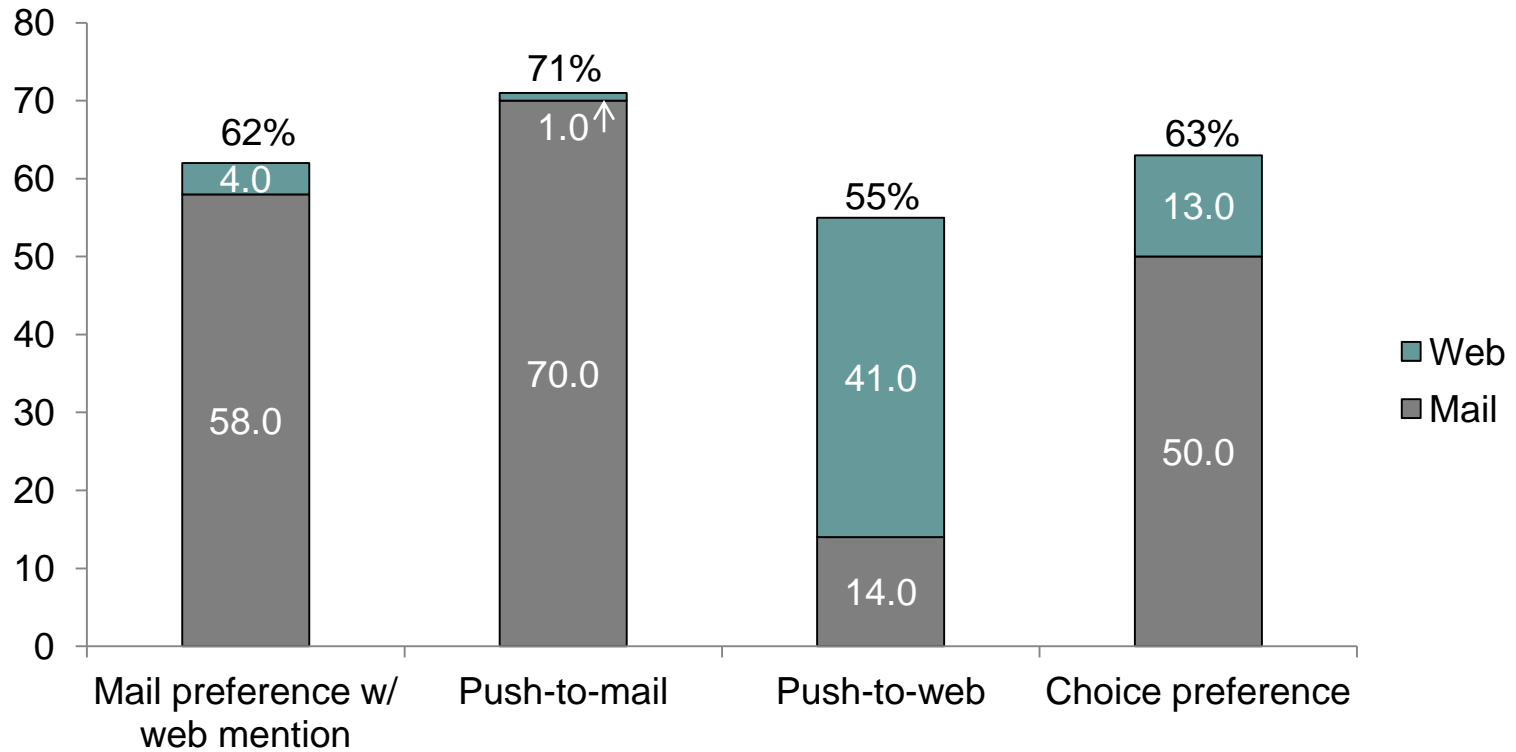
From response rates to nonresponse error
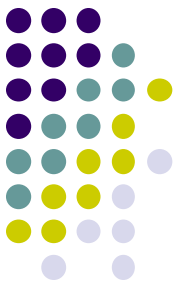
- It does not help much to improve response rates if our respondents are different from non-respondents on variables important to the study objectives

- Thus, we need to compare respondent characteristics on web vs. mail within the different treatment groups

In the <u>push-to-web</u> treatment, web and mail respondents demographics were quite different

Legend:
- Web Returns
- Mail Returns

Y-axis: 0 to 100

Categories (with * indicating p ≤ .05):
- % <50 (age) *
- % 65+ (age) *
- % Female
- % White
- % Employed full time *
- % Retired *
- % With 4-year degree *
- % Married *
- % Widowed *
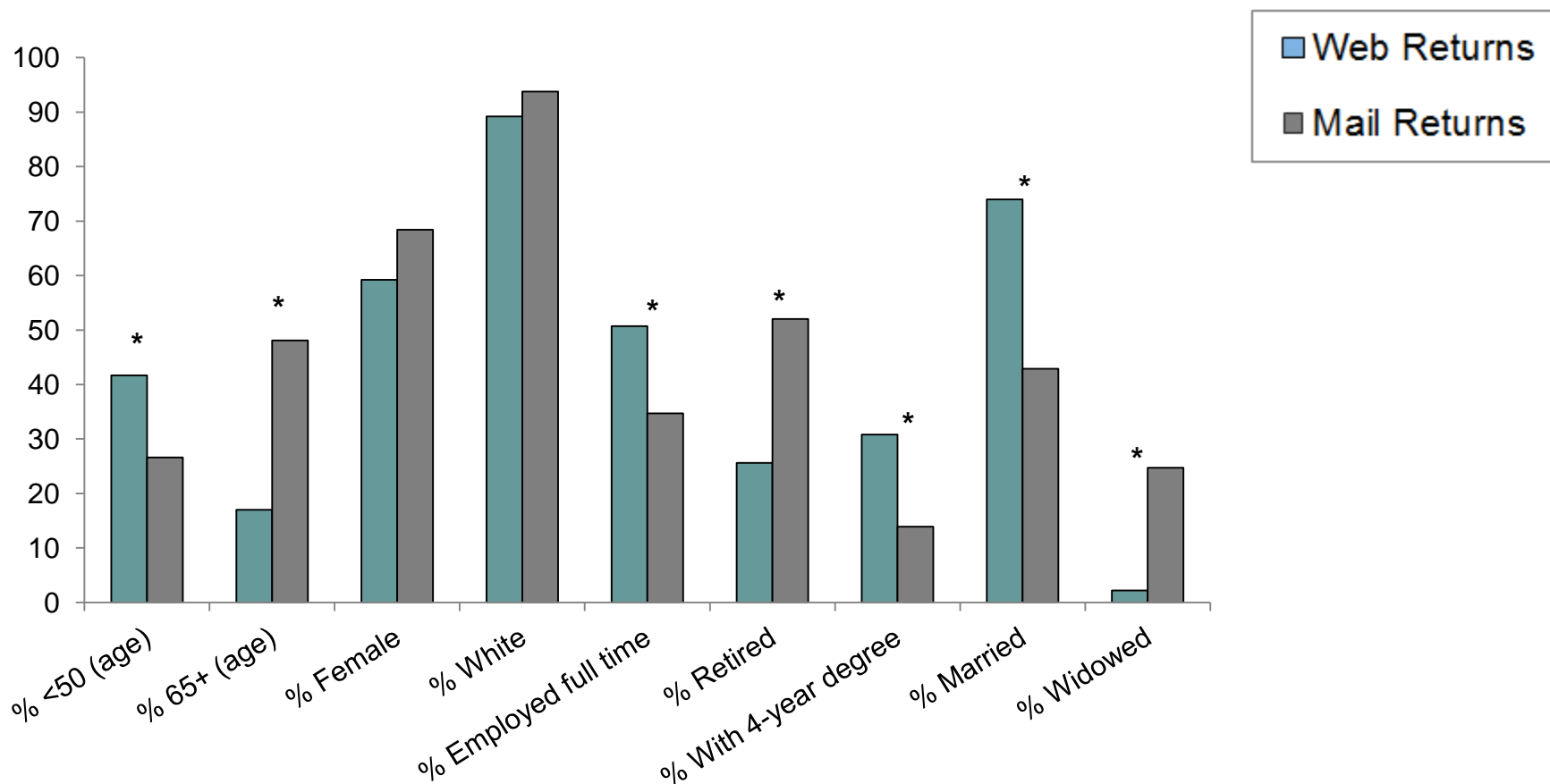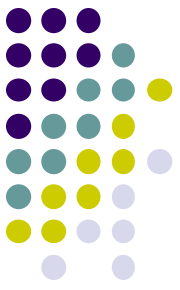
* p ≤ .05

Web and mail respondents in the <u>push-to-web</u> group were also different on 7 of 24 substantive attitude/opinion items

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

Red indicates significant difference at .05 level.

But the complete push-to-web group was quite similar to the complete push-to-mail treatment

Legend:
- Push-to-web (olive/yellow-green)
- Push-to-mail (purple)

Categories: % <50 (age), % 65+ (age), % Female *, % White, % Employed full time, % Retired, % With 4-year degree, % Married, % Widowed
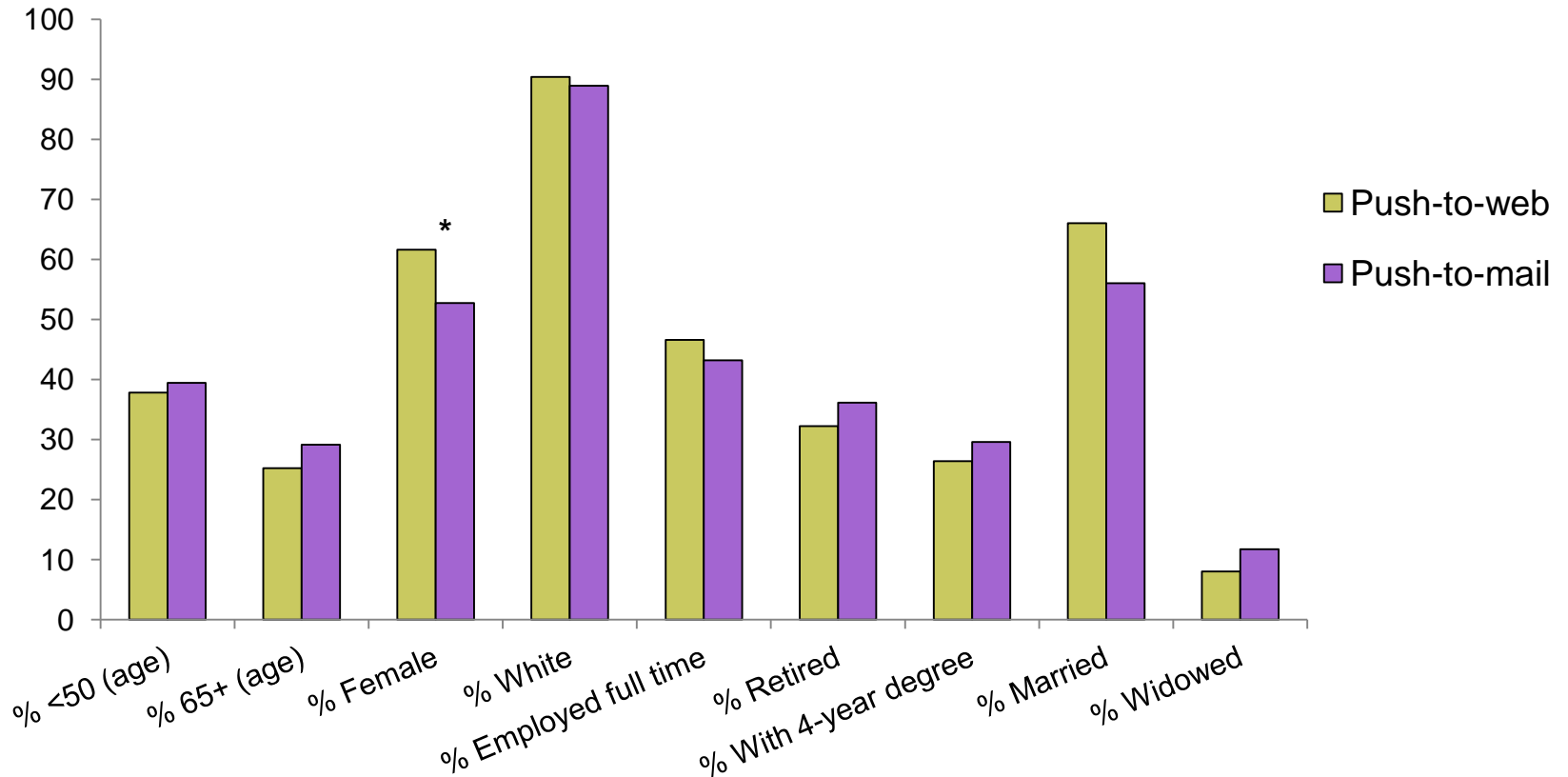
* p ≤ .05

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

<u>Next studies</u>: 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 <u>push-to-web</u> method (also known as <u>web+mail</u>)

2008 Washington Community Survey (WCS)

- Continued building on LCS study

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

(Messer, Benjamin L. and Don A. Dillman. 2011. Surveying the General Public Over the Internet Using Address-Based Sampling and Mail Contact Procedures. <u>Public Opinion Quarterly</u> 75 (3): 429-457)

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%)

Legend: Web Returns, Mail Returns

Chart data:
- $5 Push-to-web w/card: 46% total (Web Returns: 31.3, Mail Returns: 15.0)
- $5 Push-to-mail: 55% total (Web Returns: 3.1, Mail Returns: 51.9)
- $5 Mail-only: 57% total (Mail Returns: 56.7)
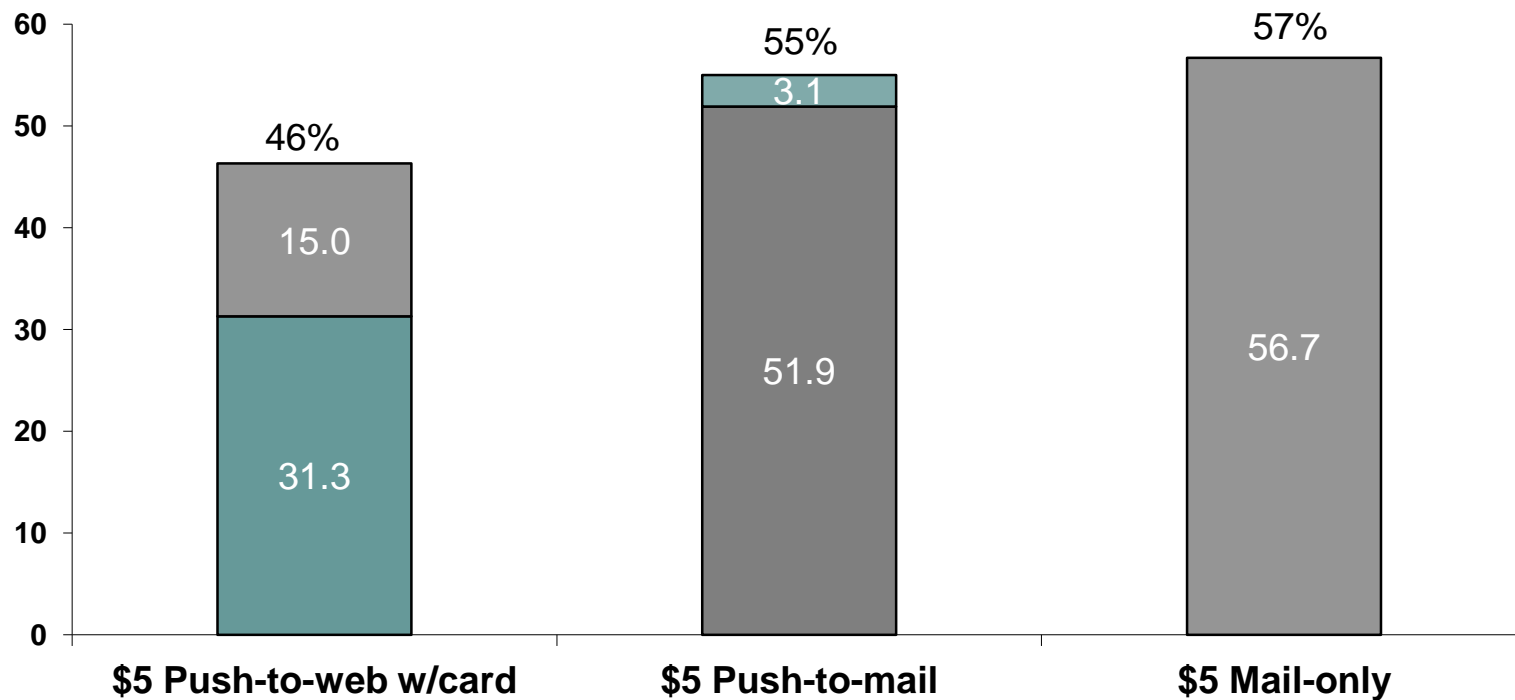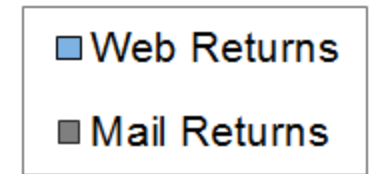
We also tested the effects of a $5 incentive – the incentive was very effective at increasing response rates, especially for <u>push-to-web</u> groups

(+17.9*)

	$5 Internet	Internet w/o $5
Push-to-web	31.3	13.4

(+13.3*)

	$5 Mail	Mail w/o $5
Mail	52.5	39.2

c Don A. Dillman December 2013   63
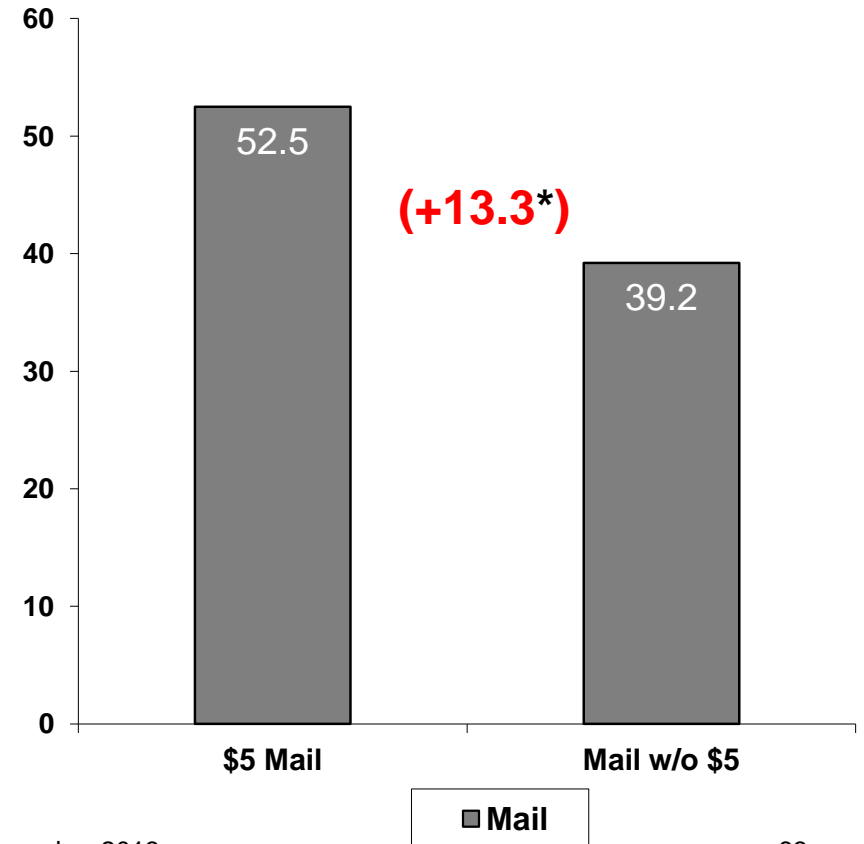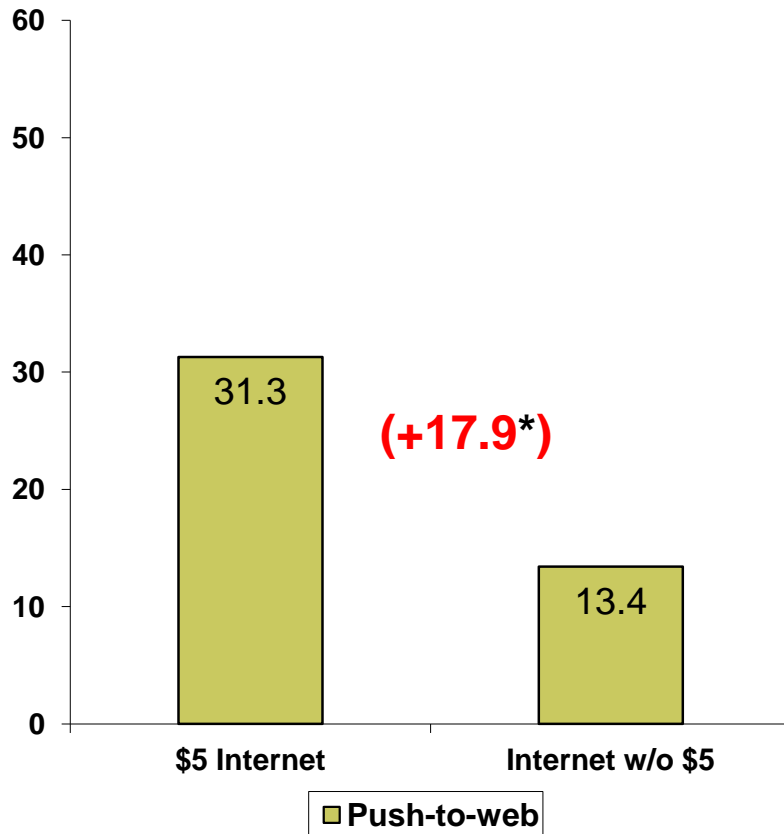
* p ≤ .05

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

Legend: Web | Mail follow-up

Categories: Education (HS or less), Age (65+), # in HH (2 or less), Married (% Yes), Employed (% Yes), Income ($25/year or less)

* p ≤ .05
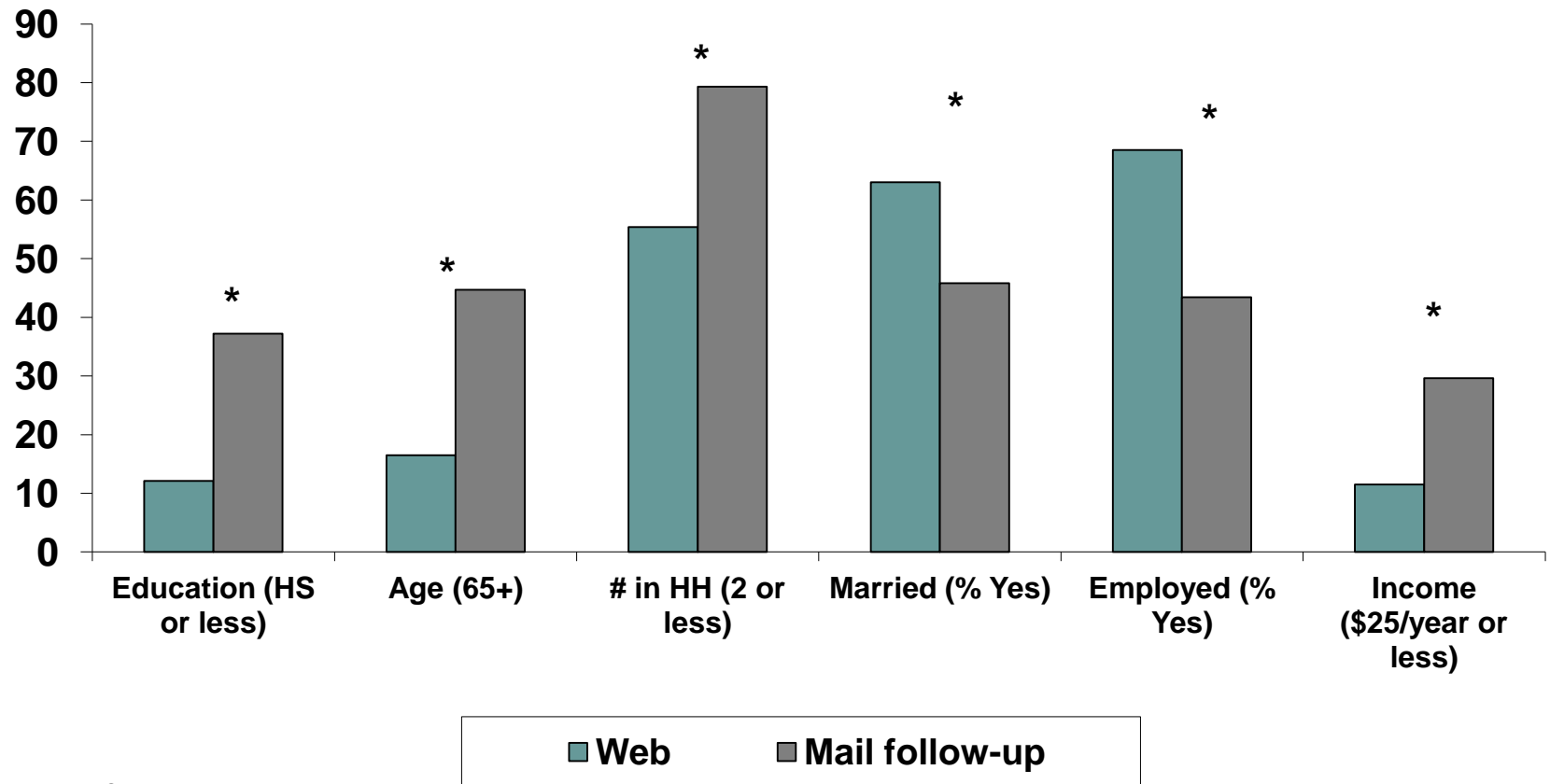
Again, the combined push-to-web group was demographically similar to the mail-only group

Legend: ▣ Push-to-web ▢ Mail-only

Categories: Education (HS or less), Age (65+), # in HH (2 or less), Married (% Yes), Employed (% Yes), Income ($25/year or less)
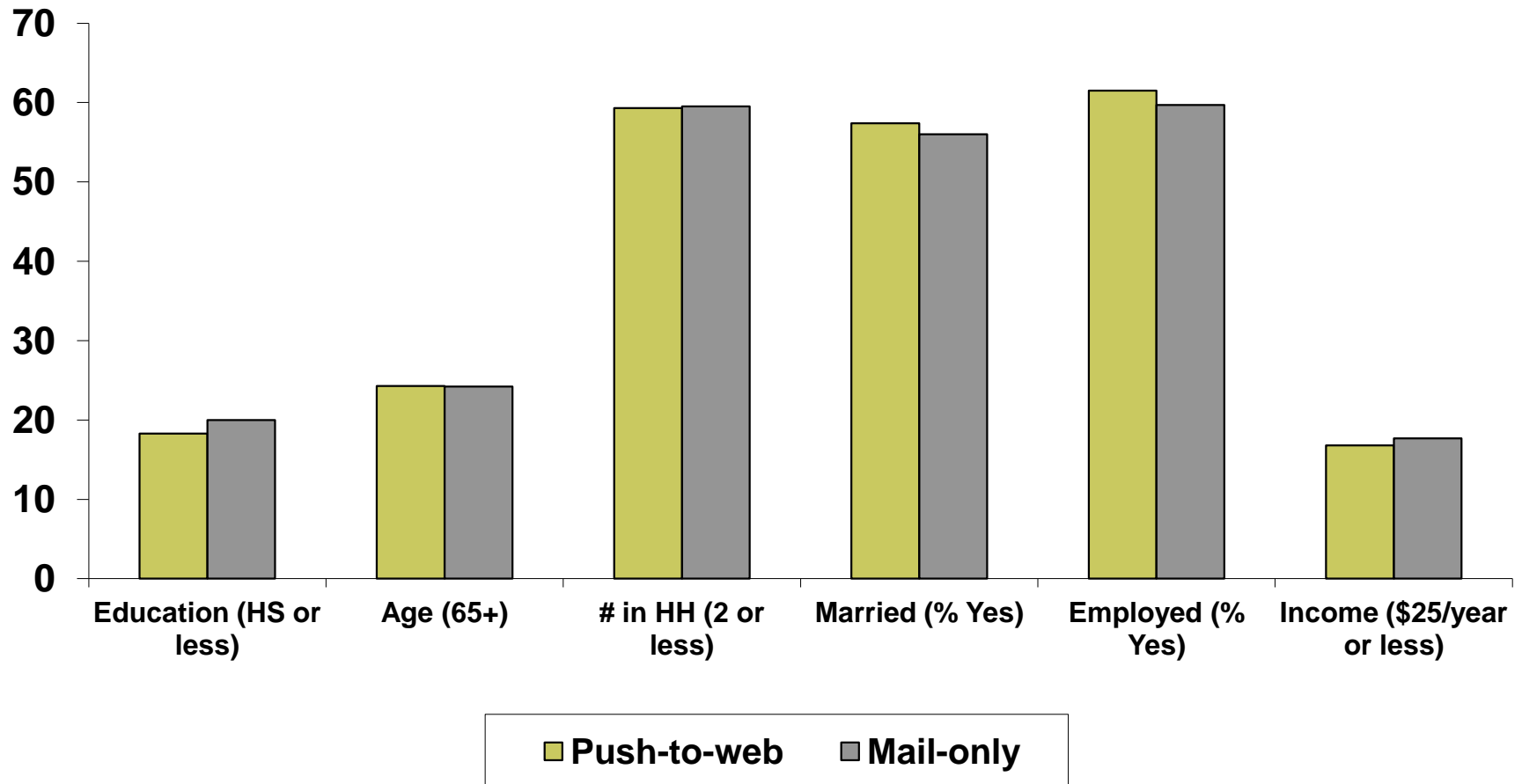
Our estimates compared to the American Community Survey (ACS) – the push-to-web group was more representative than the web-only group

Legend: Web-only, Push-to-web, ACS

Categories: Education (HS or less), Children in HH, # in HH (2 or less), Married (% Yes), Employed (% Yes), Income ($25/year or less)
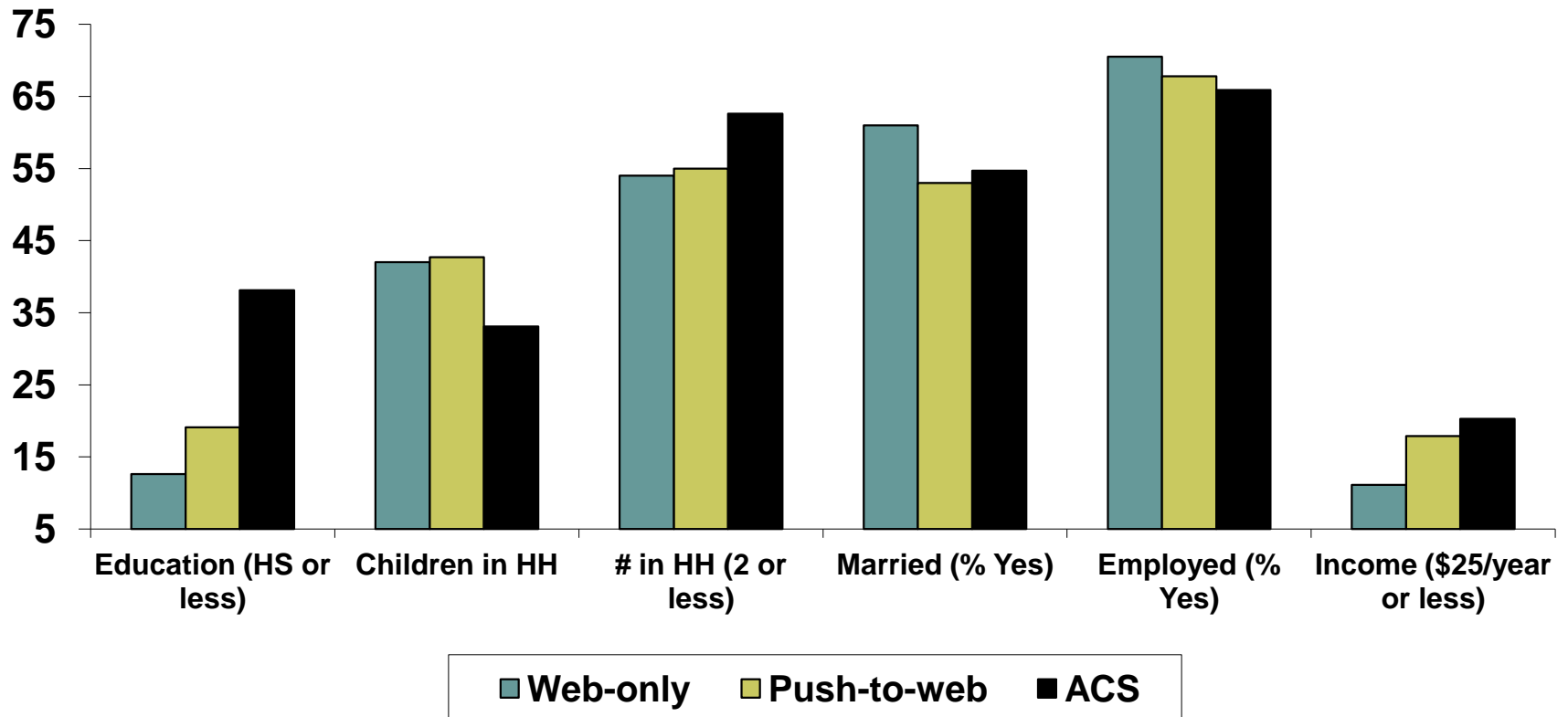
2009 Washington Economic Survey (WES)

- Continued building on prior studies (LCS & WCS)

- New question:
  - Will sending the mail follow-up with <u>a second $5 incentive</u> and in a <u>Priority Mail (PM)</u> envelope increase response rates?

2009 WES- connecting visually with the sample

- Example of the mail version:

Using Priority Mail + a second $5 incentive increased response rates, particularly for the <u>mail-only</u> group; *the effect was due entirely to incentive*

Legend:
- Web Returns
- Mail Returns

Group	Mail Returns	Web Returns	Total
Web+Mail PM+$5	33.8	18.2	52%
Web+Mail	32.7	14.9	48%
Mail-only PM+$5	68.4		68%
Mail-only	58.8		59%
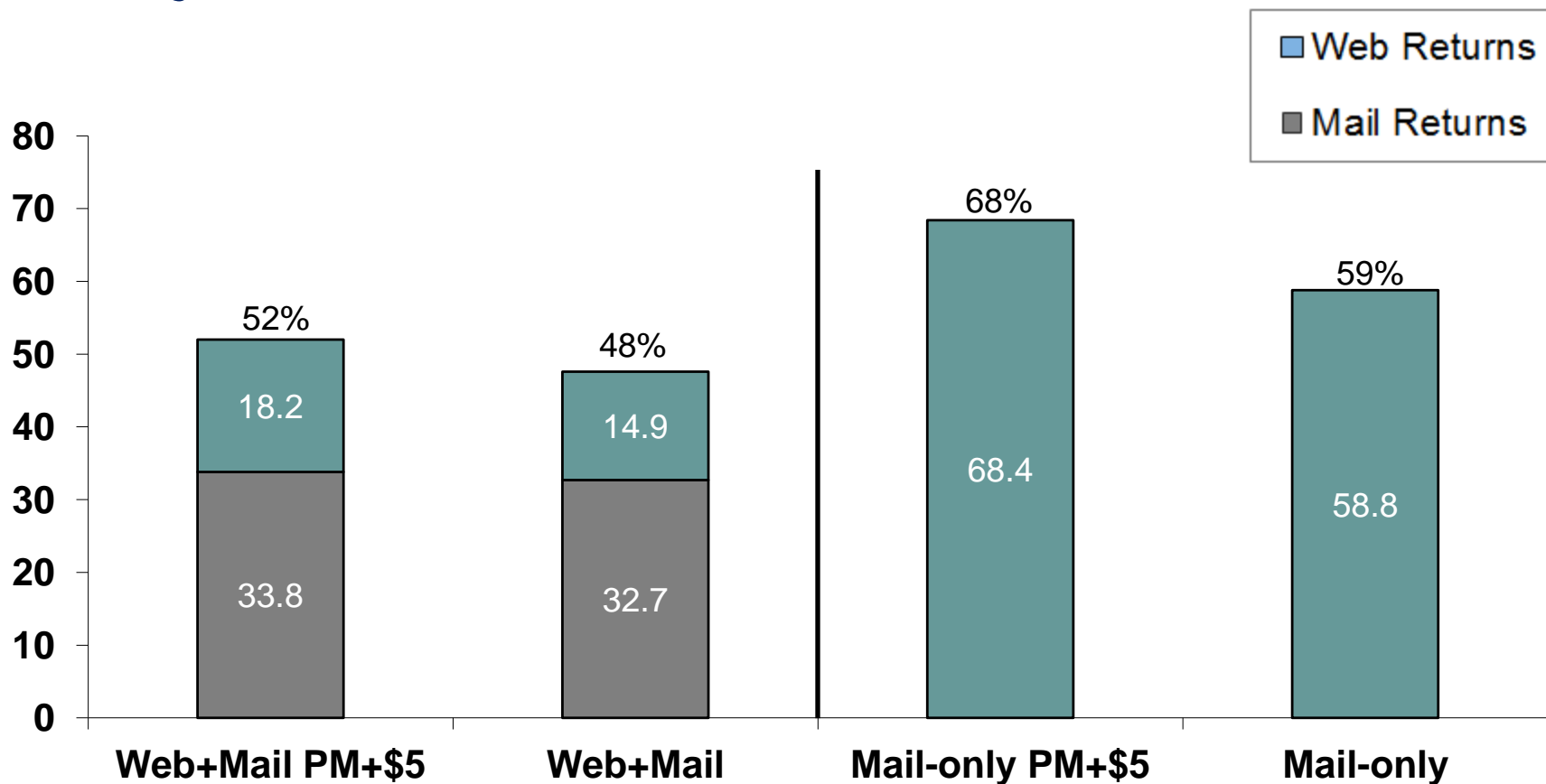
Next steps: Comparing web vs. mail item non-response in the push-to-web groups for LCS, WCS, and WES

- Item nonresponse rates lower for web

Legend:
- Web Returns
- Mail Returns

Chart data:
- 2007 LCS: Web 2.7, Mail 6.2
- 2008 WCS: Web 2.7, Mail 6.9
- 2009 WES: Web 6.1, Mail 11.6
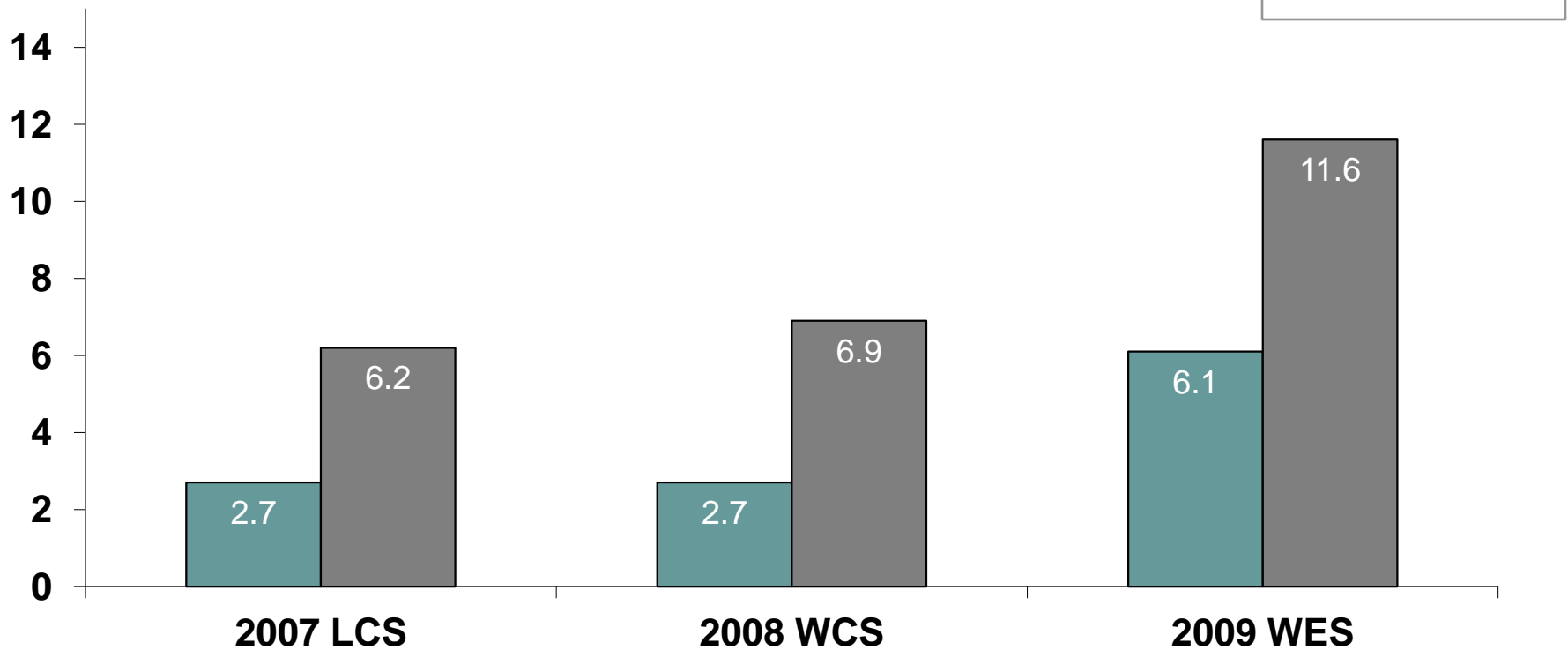
But, push-to-web and mail-only groups have overall item nonresponse rates that are similar – partly a function of respondent characteristics

Legend:
- Push-to-web
- Mail-only

Survey	Push-to-web	Mail-only
2007 LCS	3.6	5.0
2008 WCS	4.2	4.2
2009 WES	8.0	8.1
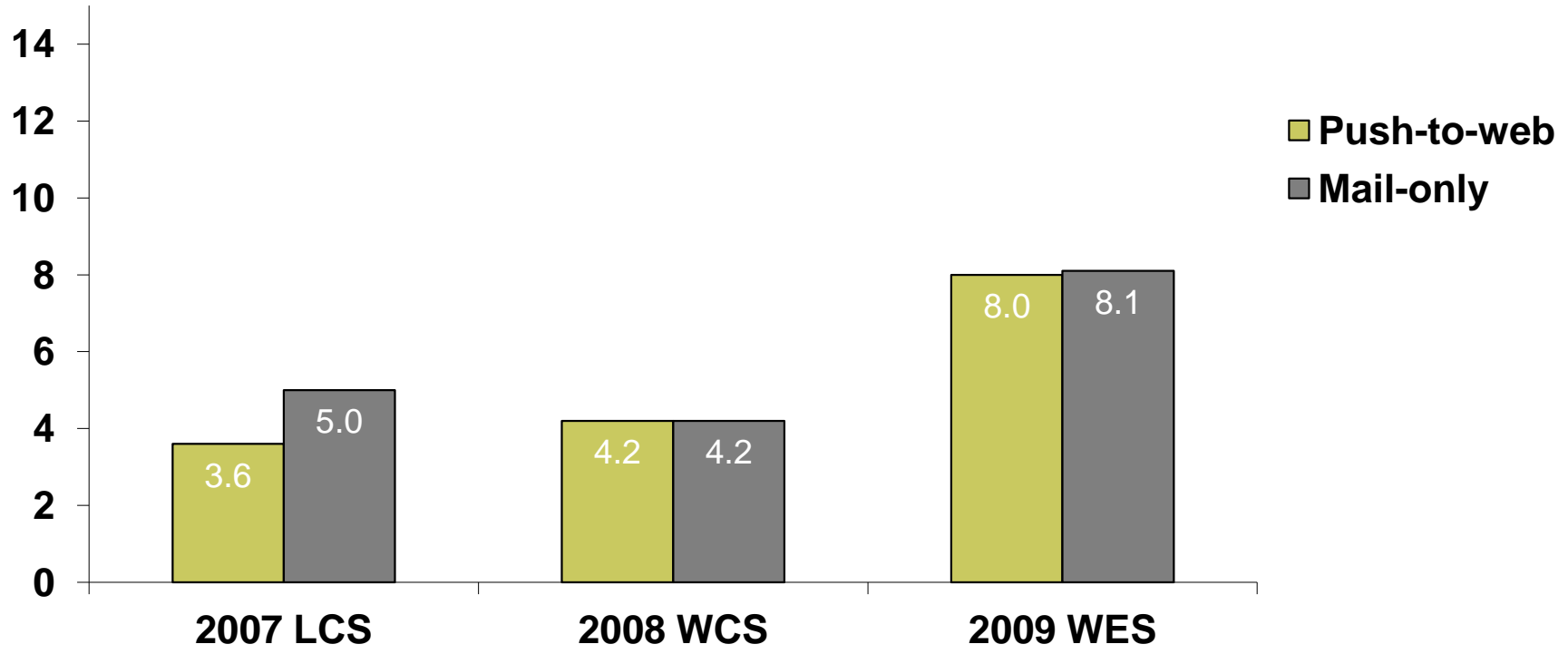
Mail-only was less expensive that push-to-web because pushing to web required postal contact, incentives, & obtained a lower response rate

Average WCS & WES costs/respondent

Bar chart with y-axis "Cost/Respondent" ranging from $0.00 to $45.00. Push-to-web: $39.05. Mail-only: $30.26.

Legend: ■ Push-to-web ■ Mail-only
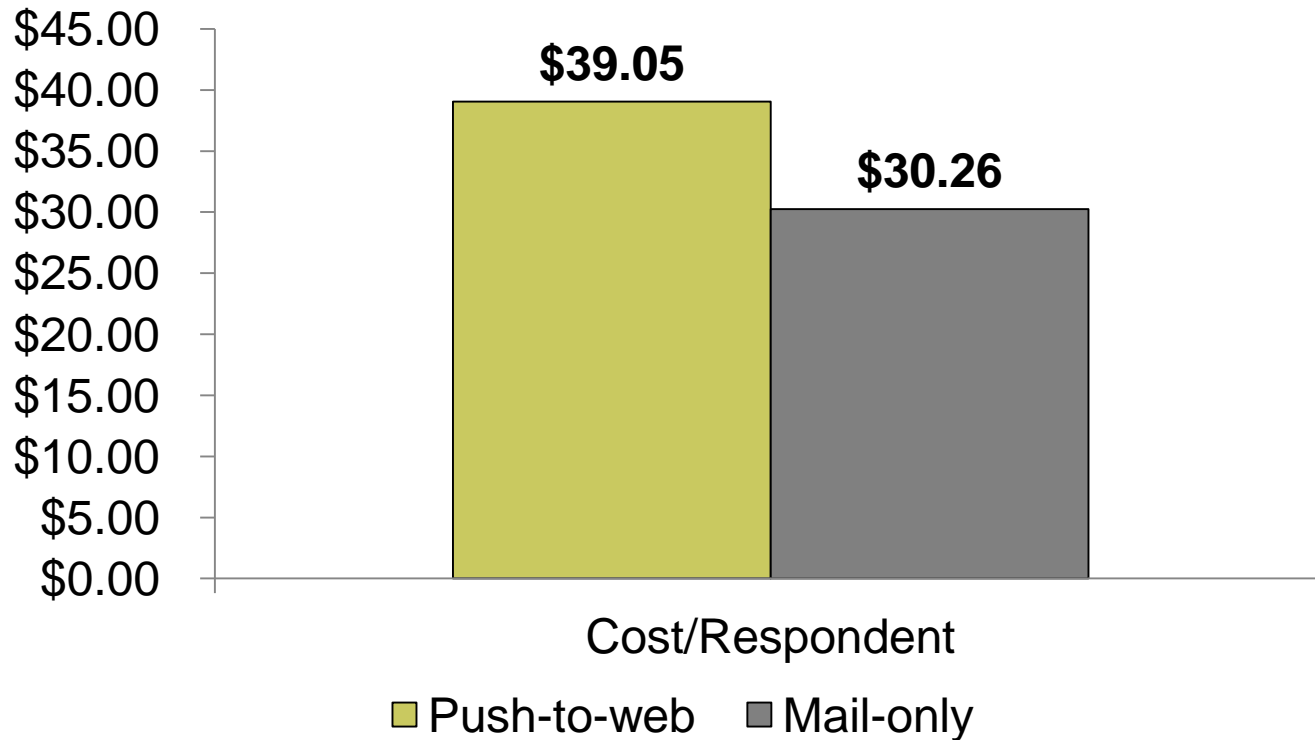
In the WES, the response times were longer when web was used

2009 WES response times

Legend:
- 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
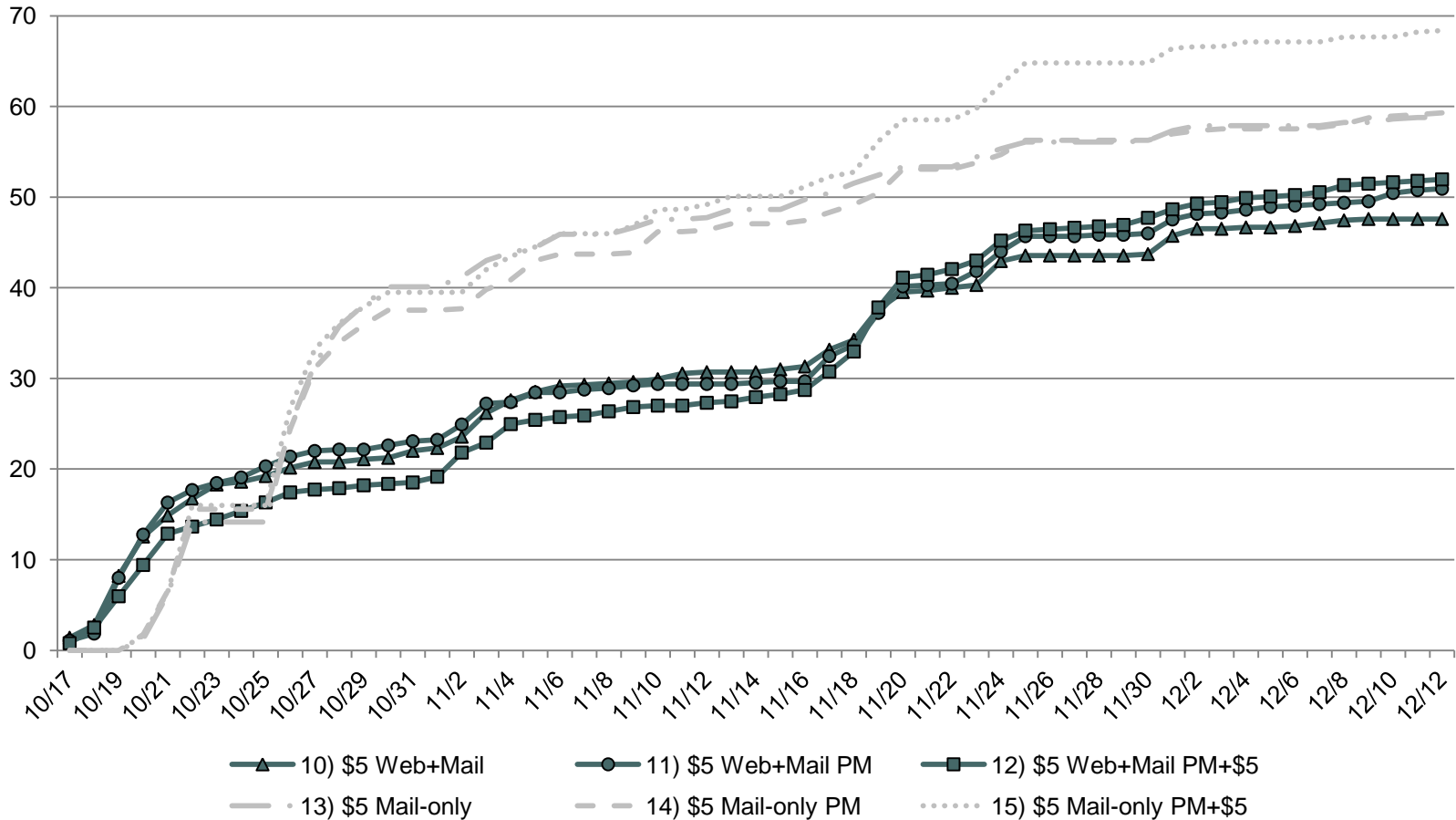
Why was web more expensive?

- 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 <u>statewide population</u> 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 4th contact) more effective for pushing respondents to the web than is introducing mail in the 3rd 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.

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
1-800-833-0867

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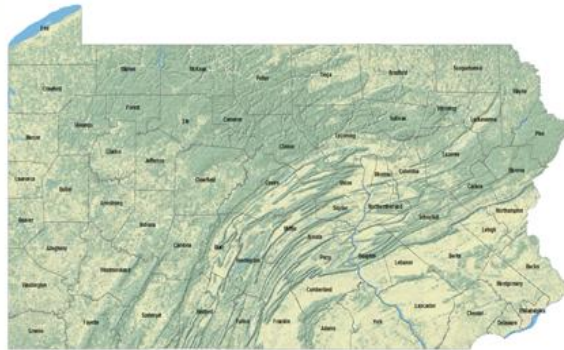
To be completed by the adult (age 18 and older) in your household who has had the most recent birthday.

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

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
1-800-833-0867

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

Legend:
- Web Returns
- Mail Returns

Chart data:

Alabama
- Web+Mail: 31% (Web Returns 11.4, Mail Returns 19.6)
- Mail-only: 38%

Pennsylvania
- Web+Mail: 34% (Web Returns 12.8, Mail Returns 21.2)
- Mail-only: 49%

Washington
- Web+Mail: 48% (Web Returns 28, Mail Returns 20.3)
- Mail-only: 50%
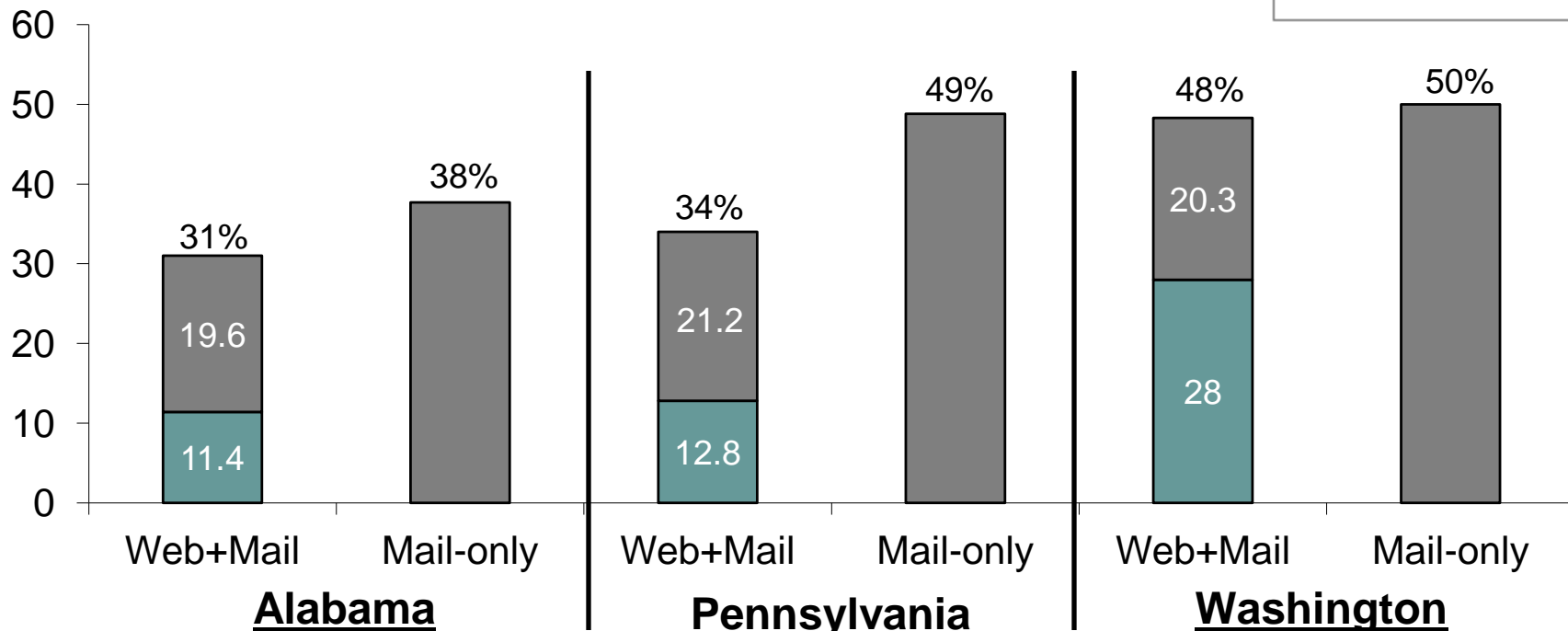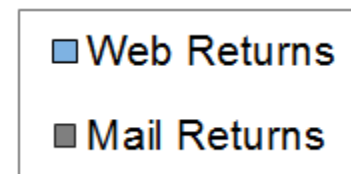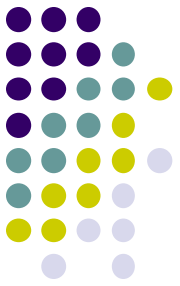
Key observation:

- 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

- <u>Push-to-mail</u> means we asked for a mail response and withheld the web option until the 3rd of 4 contacts.

- <u>Push-to-web (web+ mail)</u> means we asked for a web response and withheld a mail option until the 3rd of 4 contacts

- A <u>double push-to-web (2web+mail)</u> means we withheld mail to the 4th 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

Legend: ☐ Web Returns ☐ Mail Returns

	Washington		Pennsylvania	
	2Web+Mail	Web+Mail	2Web+Mail	Web+Mail
Total	44%	48%	37%	34%
Mail Returns	11.9	20.3	17.6	21.5
Web Returns	32.3	28	19.4	12.6
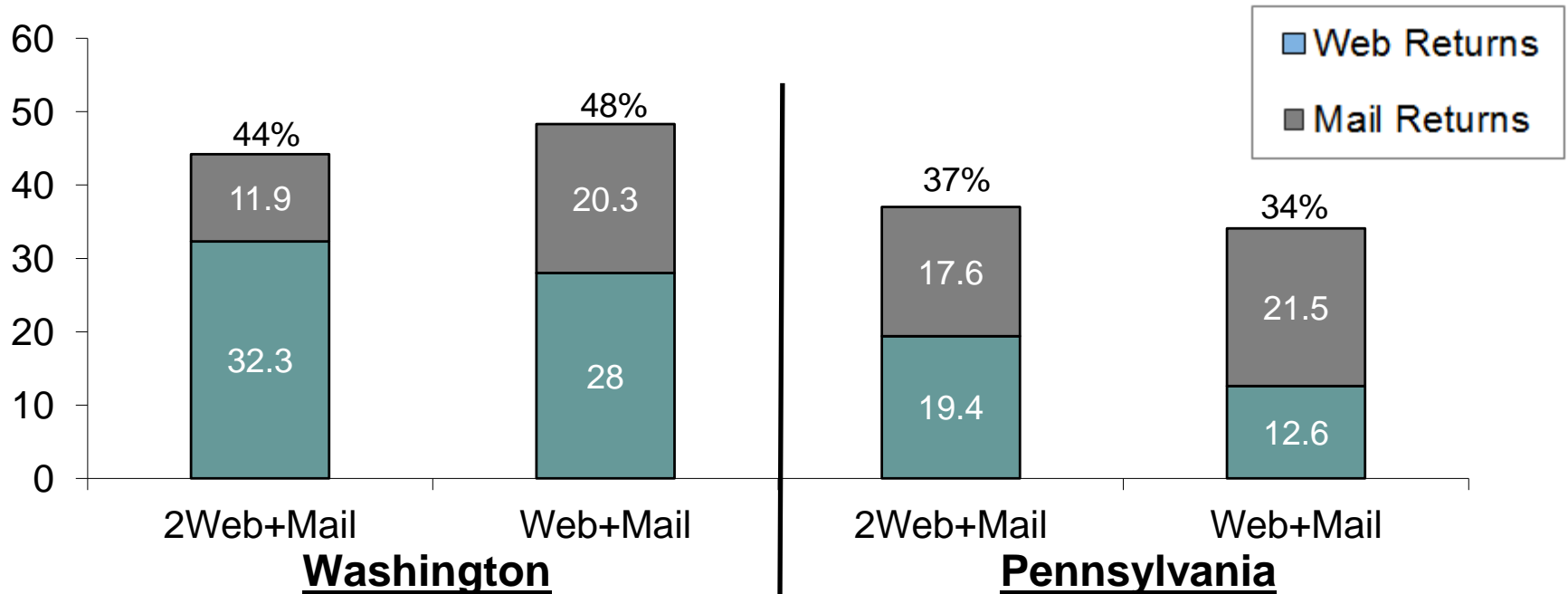
Conclusions from Tri-state study

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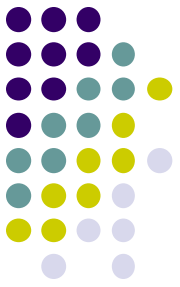
- Continued building on prior studies (LCS, WCS, WES, TSES)

- 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?

WA

NE
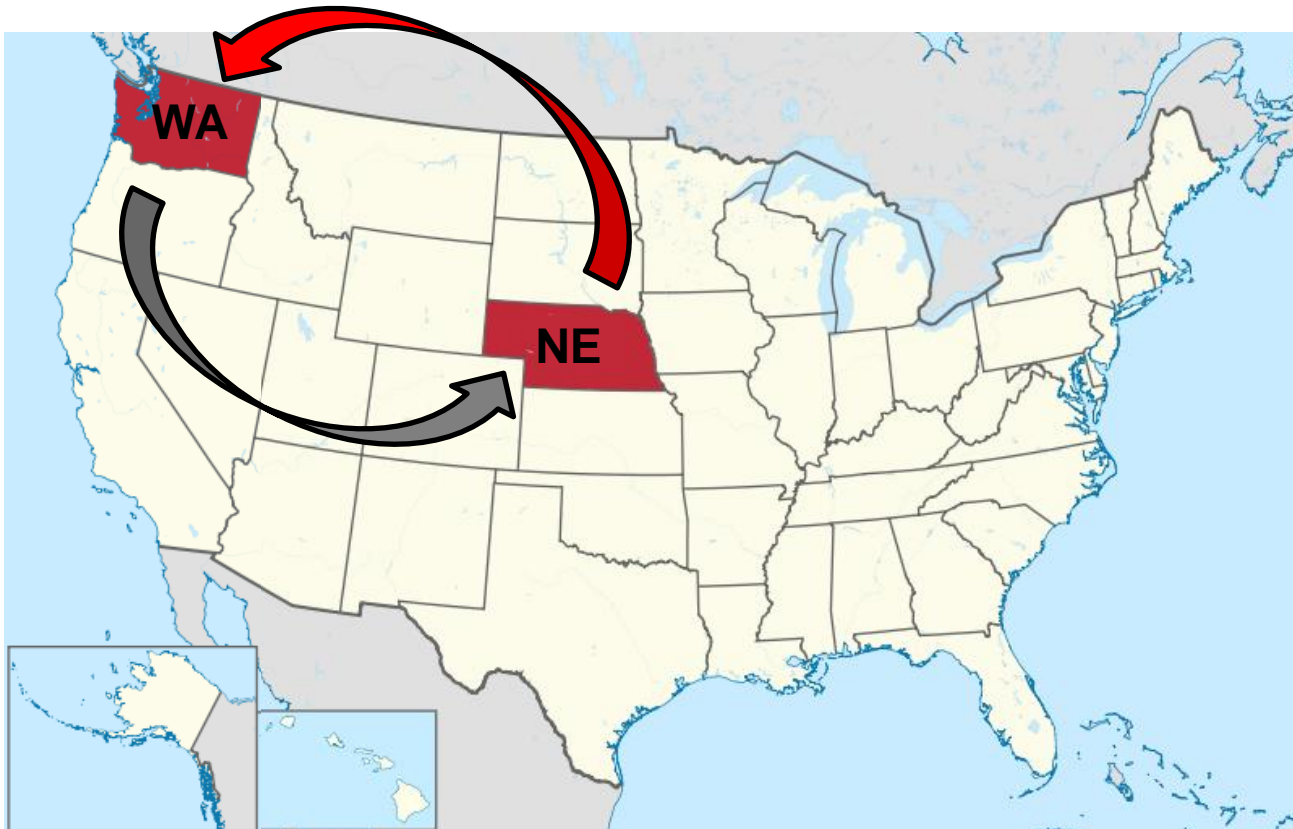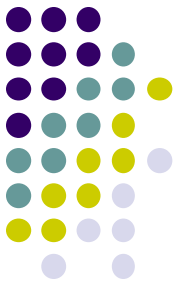
2012 Water Management Survey

- Examples of the mail covers:

Water in Nebraska

A statewide study of people's opinions on water supplies and how they should be managed to meet resident concerns

Bureau of Sociological Research
University of Nebraska-Lincoln
Nebraska, NE 68588
1-800-833-0867
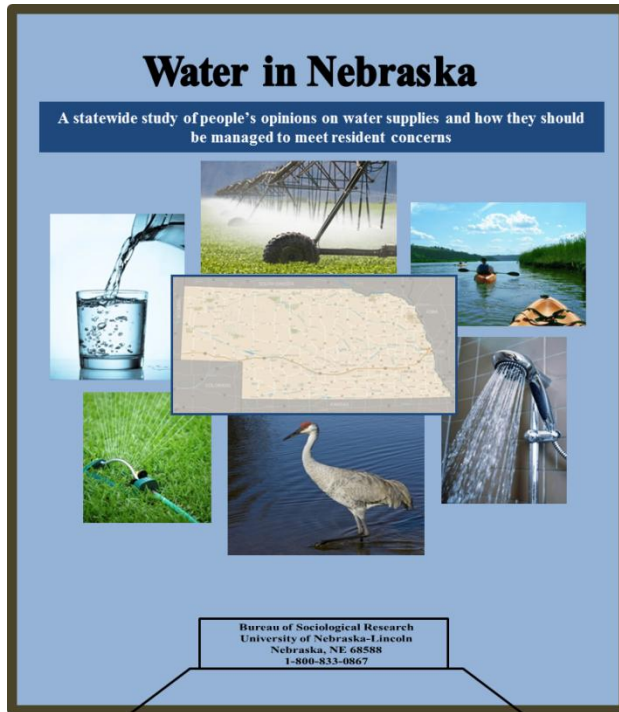
Bureau of Sociological Research
University of Nebraska-Lincoln
Lincoln, NE 68588
1-800-833-0867
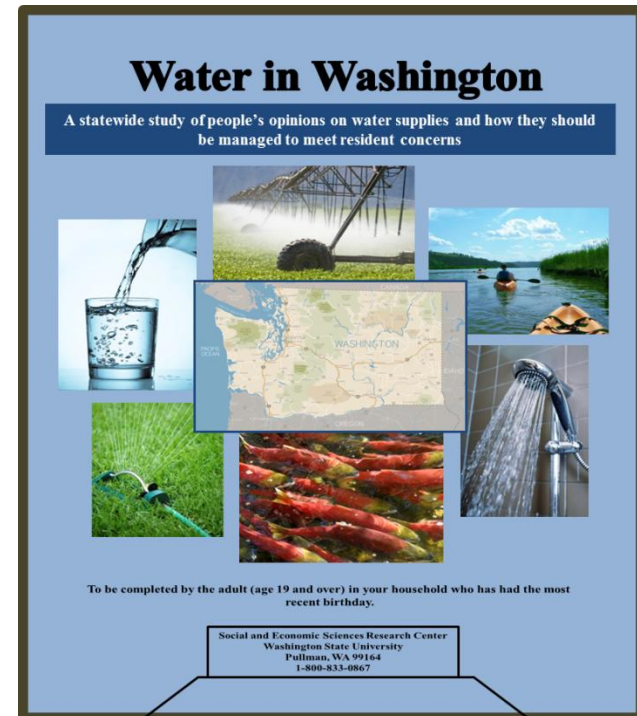
Water in Washington

A statewide study of people's opinions on water supplies and how they should be managed to meet resident concerns

To be completed by the adult (age 19 and over) in your household who has had the most recent birthday.

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

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

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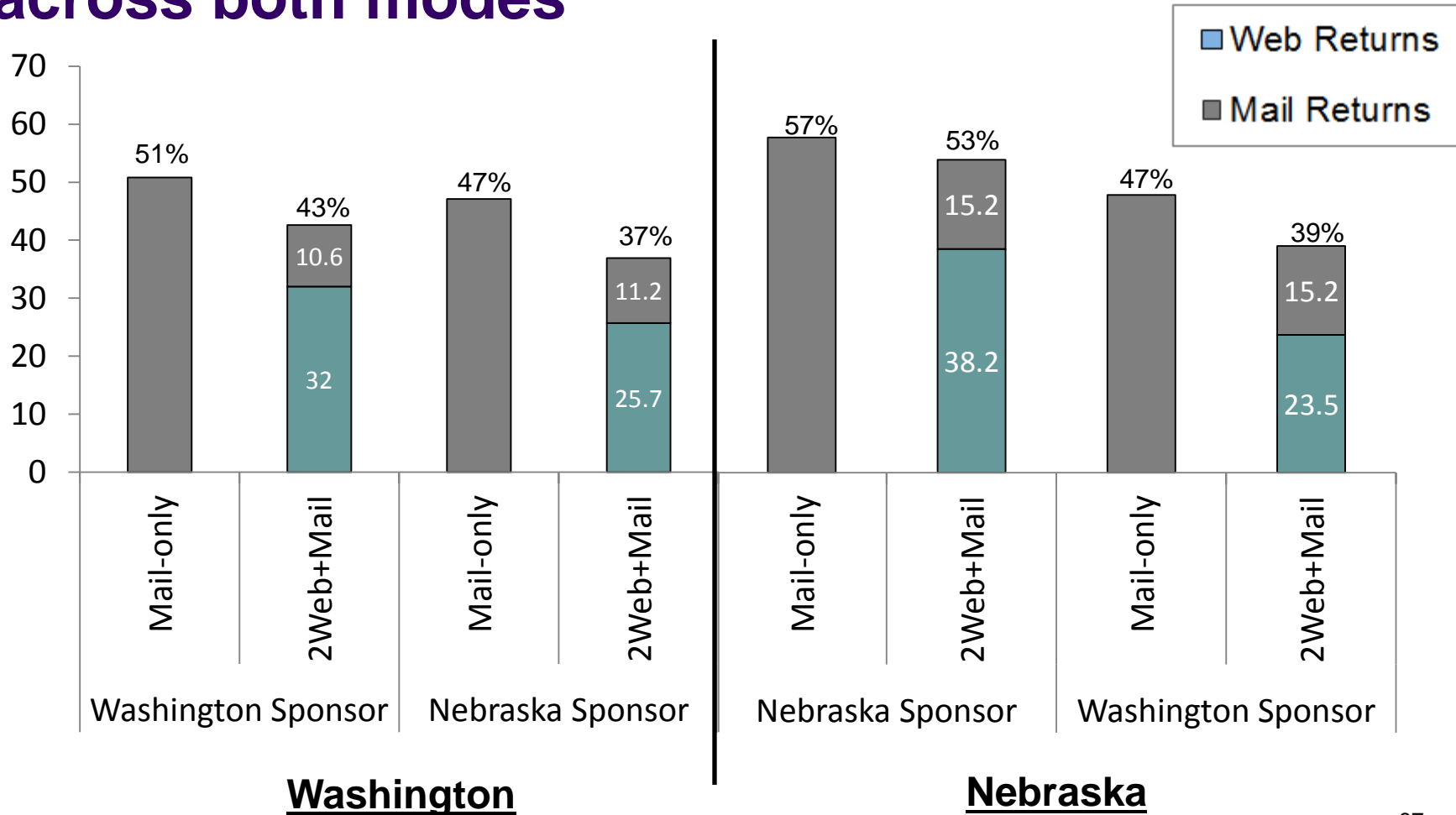
When we combined data across states, we found the same trends; also mail-only groups obtained higher response rates than 2web+mail groups

c Don A. Dillman December 2013
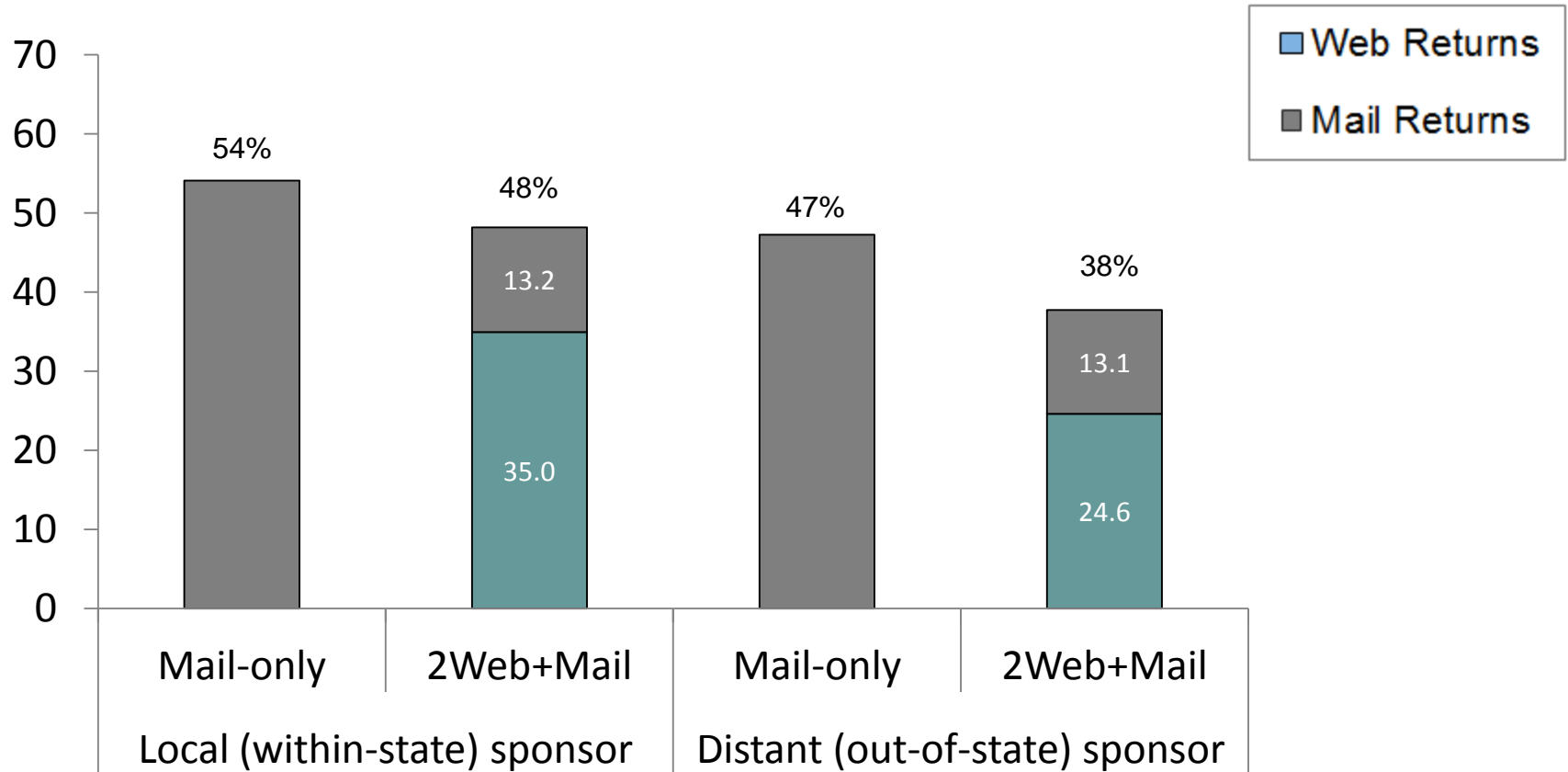
In sum, within-state-sponsored surveys obtained <u>higher</u> response rates than out-of-state-sponsored surveys

- 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 <u>mail-only</u> groups
  - 6-15% higher response rates for <u>web</u> groups of the 2web+mail mode
  - Same response rates for <u>mail</u> groups of the 2web+mail mode

<u>Final summary</u>: What did we learn from the five studies?

1. Lewiston, ID-Clarkston, WA Regional Study   2007
2. Washington Community Survey   2008
3. Washington Economic Survey   2009
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)

Legend: ☐ Web Returns ▪ Mail Returns

Category	Mail	Web+mail (Mail)	Web+mail (Web)
Lewiston-Clarkston	71%	14%	41%
Washington Community	57%	15%	31%
Washington Economic	68%	18%	34%
Washington Electricity	50%	20%	28%
Pennsylvania Electricity	46%	22%	12%
Alabama Electricity	38%	20%	11%
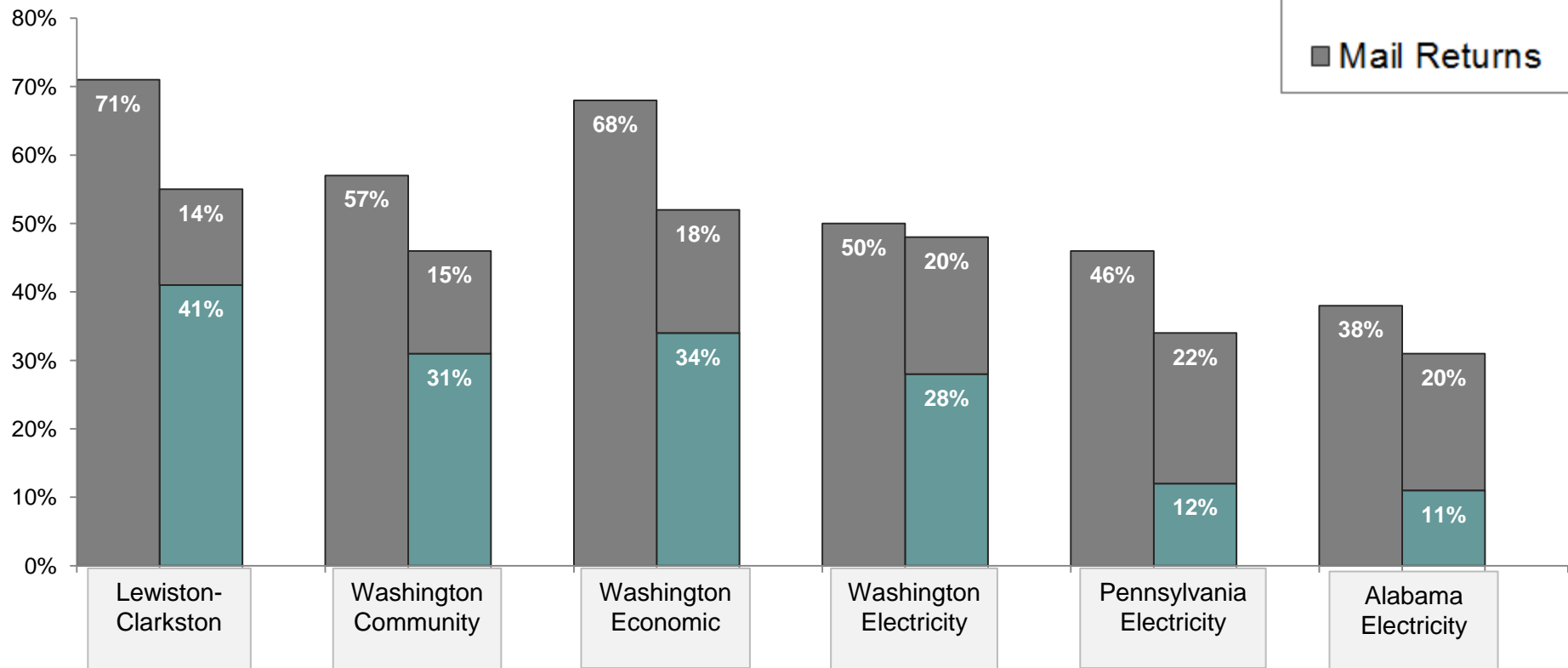
Response rates for more stringent tests of 2web+mail vs. mail-only designs, 2011-2012 studies

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

Legend:
- Web Returns
- Mail Returns

Study	Mail-Only (Mail)	2Web+Mail (Mail)	2Web+Mail (Web)
Washington Electric	50%	12%	32%
Pennsylvania Electric	46%	18%	19%
Washington Water	50%	11%	32%
Nebraska Water	51%	15%	24%
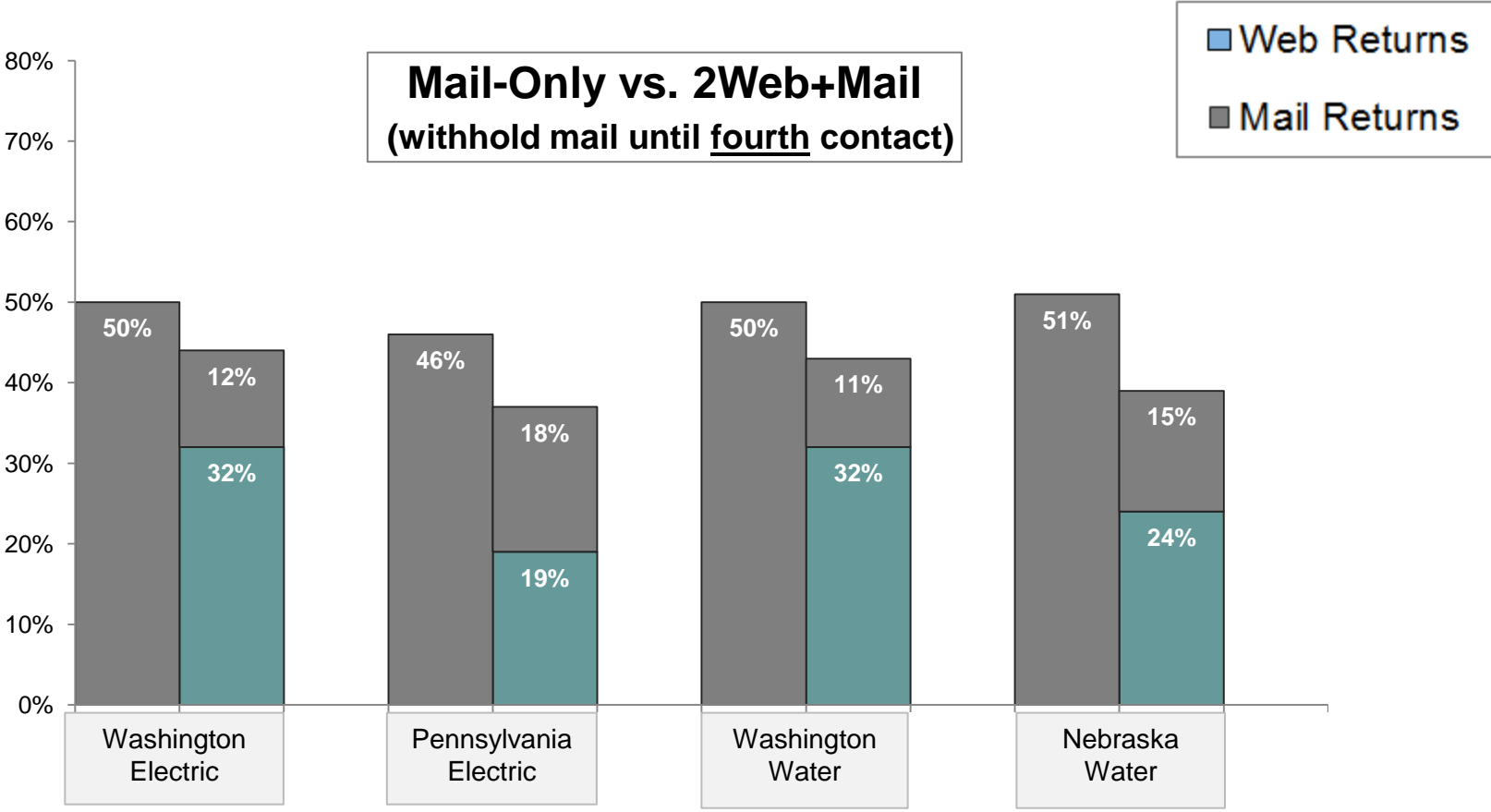
Summary of findings (1)

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 <u>mail contact only</u>, 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 <u>email</u> 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 <u>Email Augmentation</u>
- 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; <u>mail-only contact</u> except column 2 and 5!
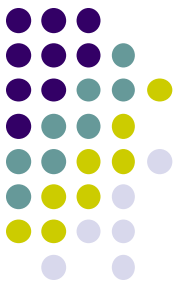
	2/13 Postal Invitation	2/18 Email	2/20 Thank-you	3/6 Replace-ment	3/10 Email	4/6 Mode Switch
1. Choice	🟩 🔺 $		🟩 🔺	🟩 🔺		🟩 🔺
2. Mail	🟩 $		🟩	🟩		🔺
3. Web	🔺 $		🔺	🔺		🟩
4. Web + Email Augment.	🔺 $	🔺	🔺	🔺	🔺	🟩

🟩 **Request for Mail Response**, 🔺 **Request for Web Response**, $ **Incentive included**

Response Rates: Mail > Choice > Web; Web with <u>email augmentation</u> has highest response
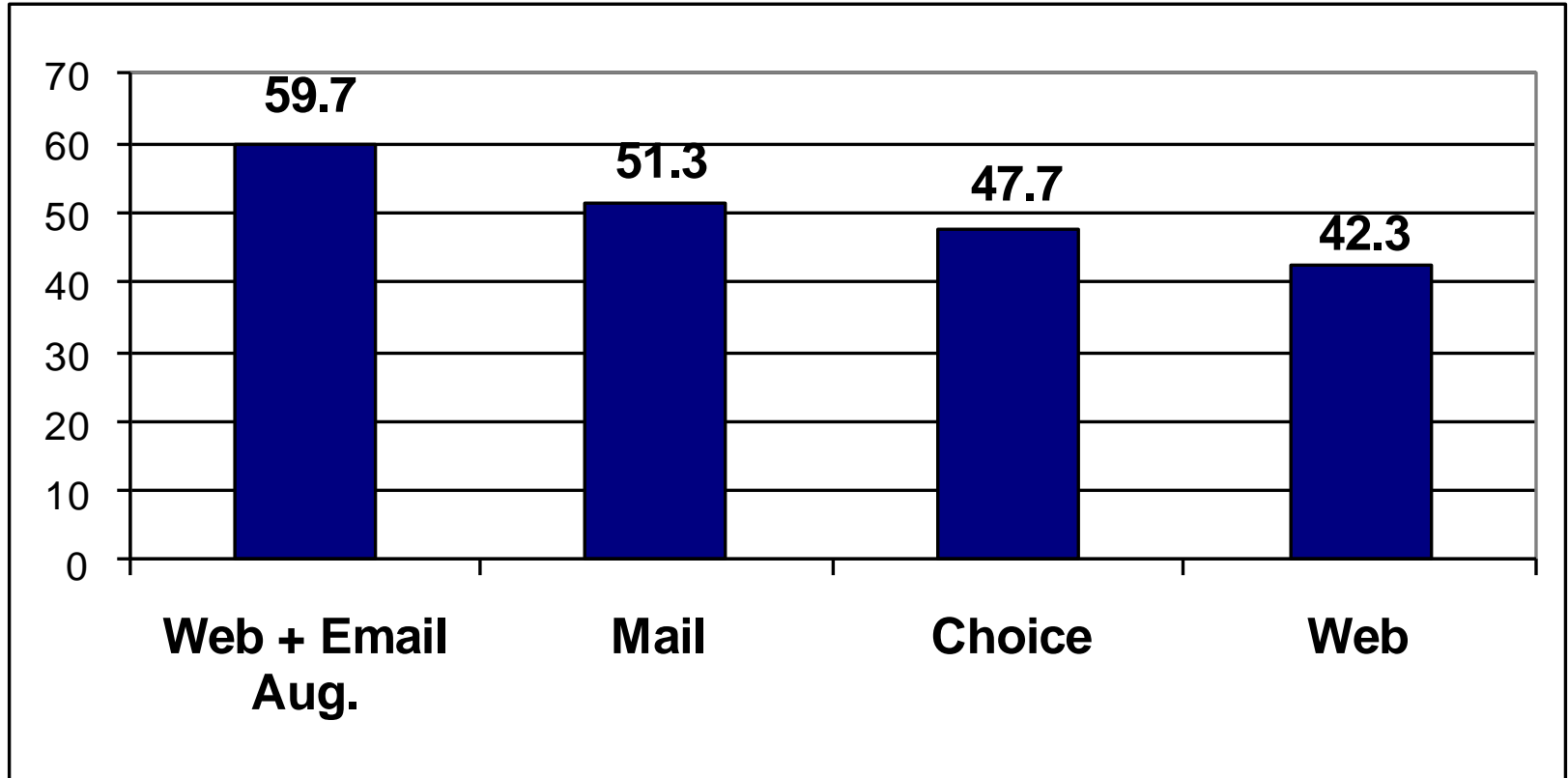
p=.001

Additional response obtained after final "mode switch" contact

p=.246   *p*=.002   *p*=.036

Legend: ■ Response by Mail   ■ Response by Web
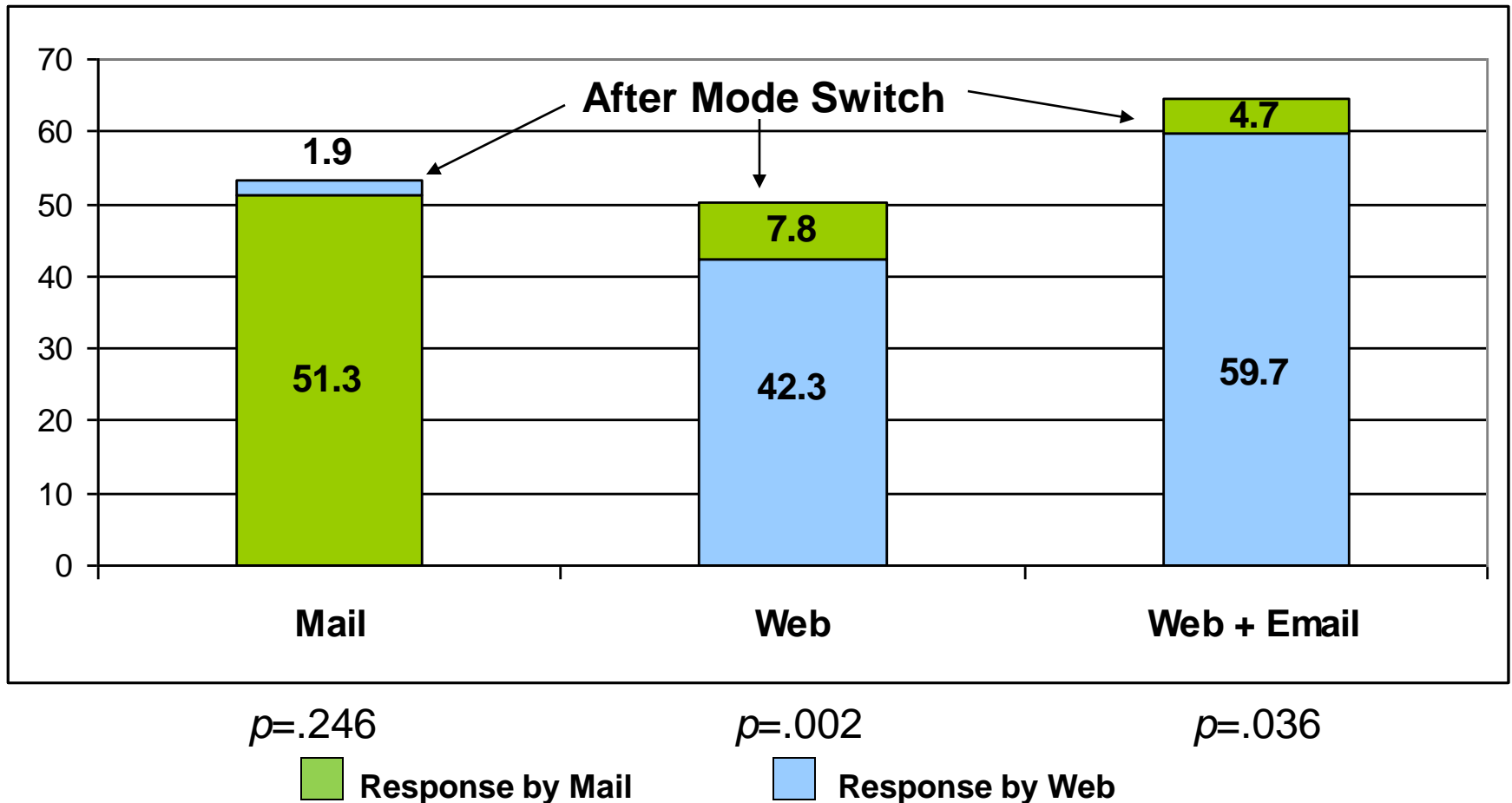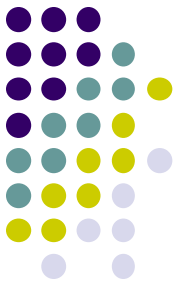
Advancing From Test 1 to Test 2
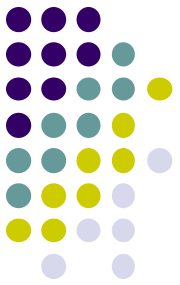
- The email augmentation that offers 'easy link" to the web is powerful.

- 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).
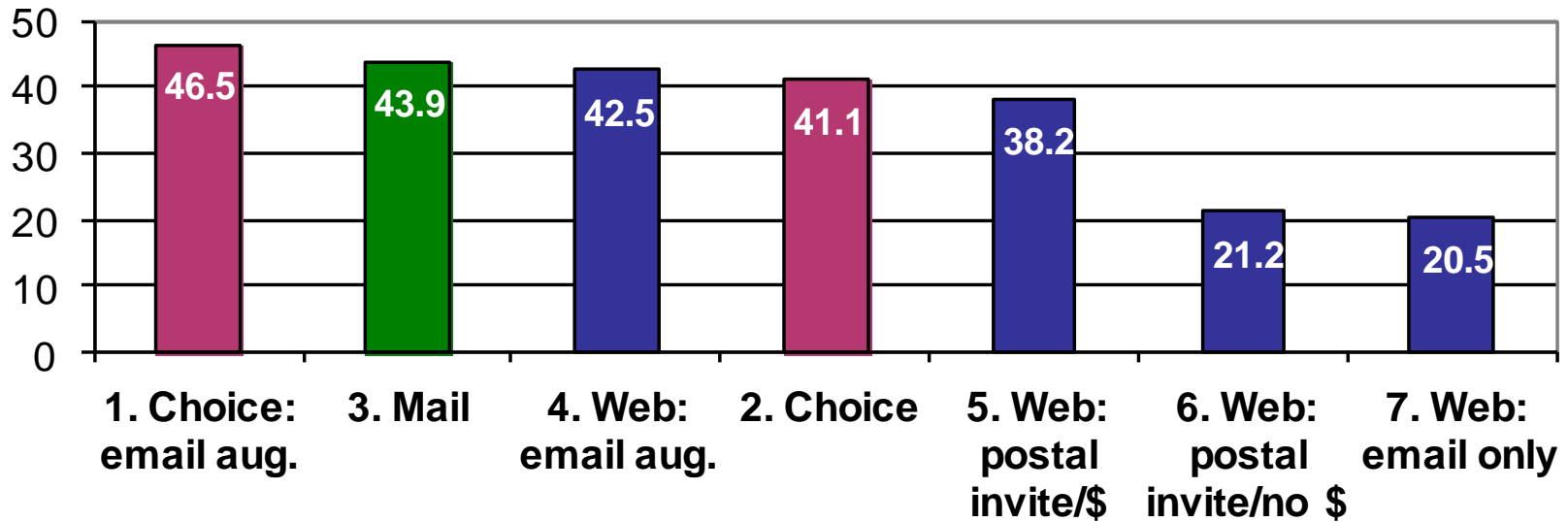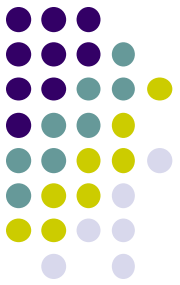
Treatment groups: Tests of email plus postal contacts on response rates (with and without $2)

Requested Mode of response	Nov 9/10 Invitation	Nov 12/13 Invite prompt	Nov 18/19 Thank you/ reminder	Dec 7/8 Replacement	Dec 10/14 Replacement prompt
1. Choice	$ ■	▲	■	■	▲
2. Choice	$ ■	■	■	■	■
3. Mail	$ ■	■	■	■	■
4. Web	$ ■	▲	■	■	▲
5.Web	$ ■	▲	▲	▲	▲
6. Web	■	▲	▲	▲	▲
7. Web	▲	▲	▲	▲	▲

■ Contact sent via MAIL   ▲ Contact sent via EMAIL $2 Incentive included

Response Rates from 2009 Test

Legend: Choice of Mail/Web Response, Mail Response, Web Response

Bar chart values:
- 1. Choice: email aug. — 46.5
- 3. Mail — 43.9
- 4. Web: email aug. — 42.5
- 2. Choice — 41.1
- 5. Web: postal invite/$ — 38.2
- 6. Web: postal invite/no $ — 21.2
- 7. Web: email only — 20.5

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

(Millar, Morgan. July 2013. Determining Whether Research is Interdisciplinary: An Analysis of New Indicators. Technical Report #13-049. The Washington State University Social and Economic Sciences Research Center: Pullman)

A paper questionnaire was mailed on April 14th

Two inside pages of the paper questionnaire
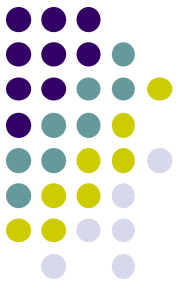
Q15. Do the theories, concepts, and/or perspectives you use to shape your dissertation research questions:
- O₁ All come from one field of study
- O₂ Mostly come from one field, but a feware from other field(s)
- O₃ Come extensively from more than one field

Q16. Do the methods, tools, techniques, and/or data used in your dissertation research:
- O₁ All come from one field of study
- O₂ Mostly come from one field, but a feware from other field(s)
- O₃ 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?
- O₁ One field
- O₂ 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?
- O₁ No
- O₂ 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?
- O₁ No
- O₂ Yes

Q20. Would you say that your dissertation research modifies (alters) elements of multiple fields in order to create common ground between them?
- O₁ No
- O₂ Yes

Please explain your answer to the above question.

Next, we'd like to ask a few questions about your impressions and experiences in your doctoral program.

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

[ ] Department/center/committee/program

Q22. How much training would you say your doctoral program has provided you in each of the following?

	None	A Little	Some	A Great Deal	Not Sure
Formulating original research questions	O₁	O₂	O₃	O₄	O₅
Designing and conducting data analysis	O₁	O₂	O₃	O₄	O₅
Designing and teaching your own classes	O₁	O₂	O₃	O₄	O₅
Preparing and delivering presentations at conferences or meetings	O₁	O₂	O₃	O₄	O₅
Preparing and submitting research manuscripts for publication	O₁	O₂	O₃	O₄	O₅
Preparing and submitting grant proposals	O₁	O₂	O₃	O₄	O₅
Preparing job application materials	O₁	O₂	O₃	O₄	O₅
Interviewing for jobs	O₁	O₂	O₃	O₄	O₅

Q23. How would you rate the guidance your program provides to its doctoral students for each of the following issues?

	Poor	Fair	Good	Excellent
Finding an advisor	O₁	O₂	O₃	O₄
Forming a committee	O₁	O₂	O₃	O₄
Overcoming obstacles to successful degree completion	O₁	O₂	O₃	O₄
Finding appropriate balance between work/school and personal/family life	O₁	O₂	O₃	O₄

Q24. To what extent does each of the following statements describe the students in your doctoral program?

	Not at all	A little	Some what	A great deal
The students are supportive of one another	O₁	O₂	O₃	O₄
There is high morale amongst students	O₁	O₂	O₃	O₄
Students are confident about their future job prospects	O₁	O₂	O₃	O₄

4

5

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 Augmentation April 1, 14:00

Email April 7, 9:30

Paper Questionniare April 15

Email April 19, 13:00

Mail Surveys
Web Surveys
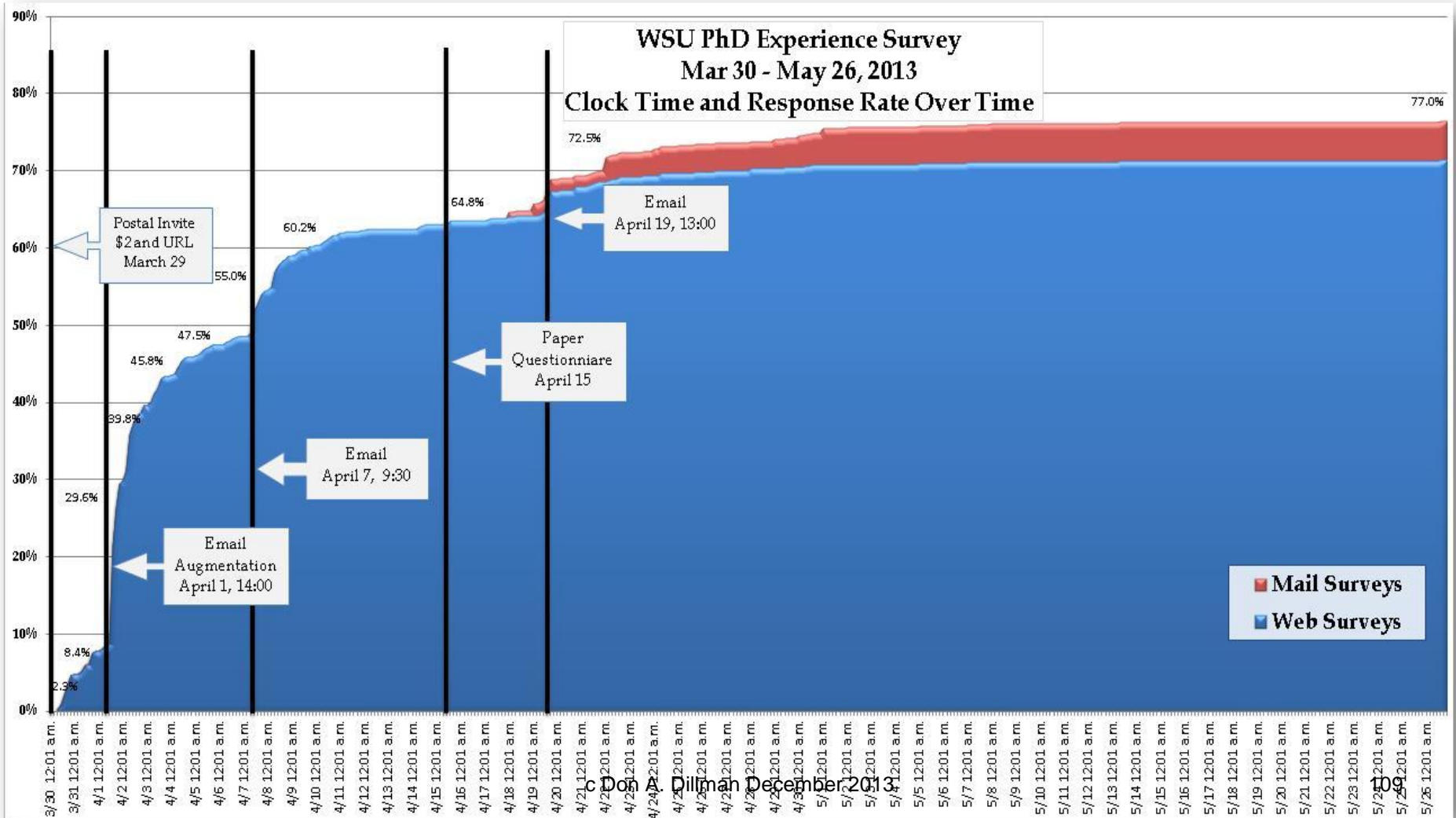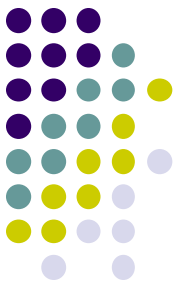
Elaboration

- 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.
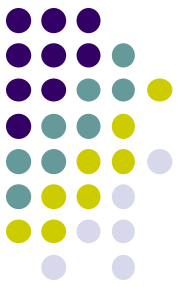
Bringing the parts together

- 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 .

- <u>Visual design</u> 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

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Thank you!

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