



# Unpacking the use of incentives in probability-based web surveys: Evidence across recent experimental studies.

Michael J. Stern, PhD

Erin Fordyce, MS

NORC at the University of Chicago

FedCASIC, April 17, 2018

# Overview

- In survey that are to be collected on the web, the process is complicated by at least two factors.
  - First, to deliver the pre-incentive it is common practice to include in a mailing the per-incentive and a URL in the cover letter.
    - We ask the respondent to type this web address into their computer's web browser. Adding a burdensome step to the process, which can discourage participation.
  - Second, not everyone is comfortable with the web; therefore, need increased motivation for answering the survey.
    - This fact makes the pre-incentive all the more important

# Overview

- Sudman (1975) argues that there are three elements that can increase the saliency of a survey:
  - (1) the survey's uniqueness;
  - (2) high economic or social benefits and low costs; and
  - (3) the potential for positive long-term consequences.
- In general, these refer to the outcome of engaging in the survey process as motivated by the questionnaire or the perceived outcome.
- In a general population studies, one can never assume that the questionnaire topic will have wide-scale appeal nor do many cross sectional studies convincingly offer potential for long-term beneficial corollaries for the population as whole.
- However, it is possible to make the survey seem unique and provide some economic benefits using various monetary and material incentives.

# Overview

- The theory generally used to explain a means by which a researcher inspires motivation to complete a survey is known as Leverage Saliency Theory (Groves, Singer, and Corning 2000; Groves et al. 2004).
  - The theory suggests that respondents are differentially motivated to respond to a survey by varied aspects of a survey.
- Groves (2000) argues that some people will be highly motivated to participate in a survey based solely on sponsoring whereas cash incentives are more persuasive with other respondents and time needed to complete to still others.
- This issue is particularly important in web surveys where there is the additional burden associated with transferring the URL from the letter to one's browser.

# As such, the questions that researchers need address more fully include:

- What form and denomination of monetary incentives can offset a potential lack of saliency for the respondent such that they engage in a web survey?
  - Proxy: Early Bird incentive (refers to a special incentive given to respondents who participate within a specific timeframe; for example, complete the interview within 10 days and receive an incentive)
- What kind of incentive leverages the benefits of participation to outweigh the costs for respondents in surveys offered over the web survey?
  - Proxy: Length of survey
- What other design or administrative features interact with incentives?
  - Proxy: Inclusion of other visual features in contact material

# Studies

- **Social and Economic Impacts of Gambling in Massachusetts/ Massachusetts Gambling Impact Cohort**
  - Sequential Multimode Study
  - Baseline survey (Web, Mail, CATI) plus subgroup selected for longitudinal study of which there are two waves thus far; Wave 1 (Web, Mail, CATI) and Wave 2 (Web, Mail)
- **National Immunization Study, Multimode Experiments**
  - Sequential Multimode Study
  - Early Bird Incentives
- **National Survey of Children's Health Redesign**
  - Three modes fielded concurrently
    - Web, Mail, CATI
    - Screener for children
    - Long and Short Versions

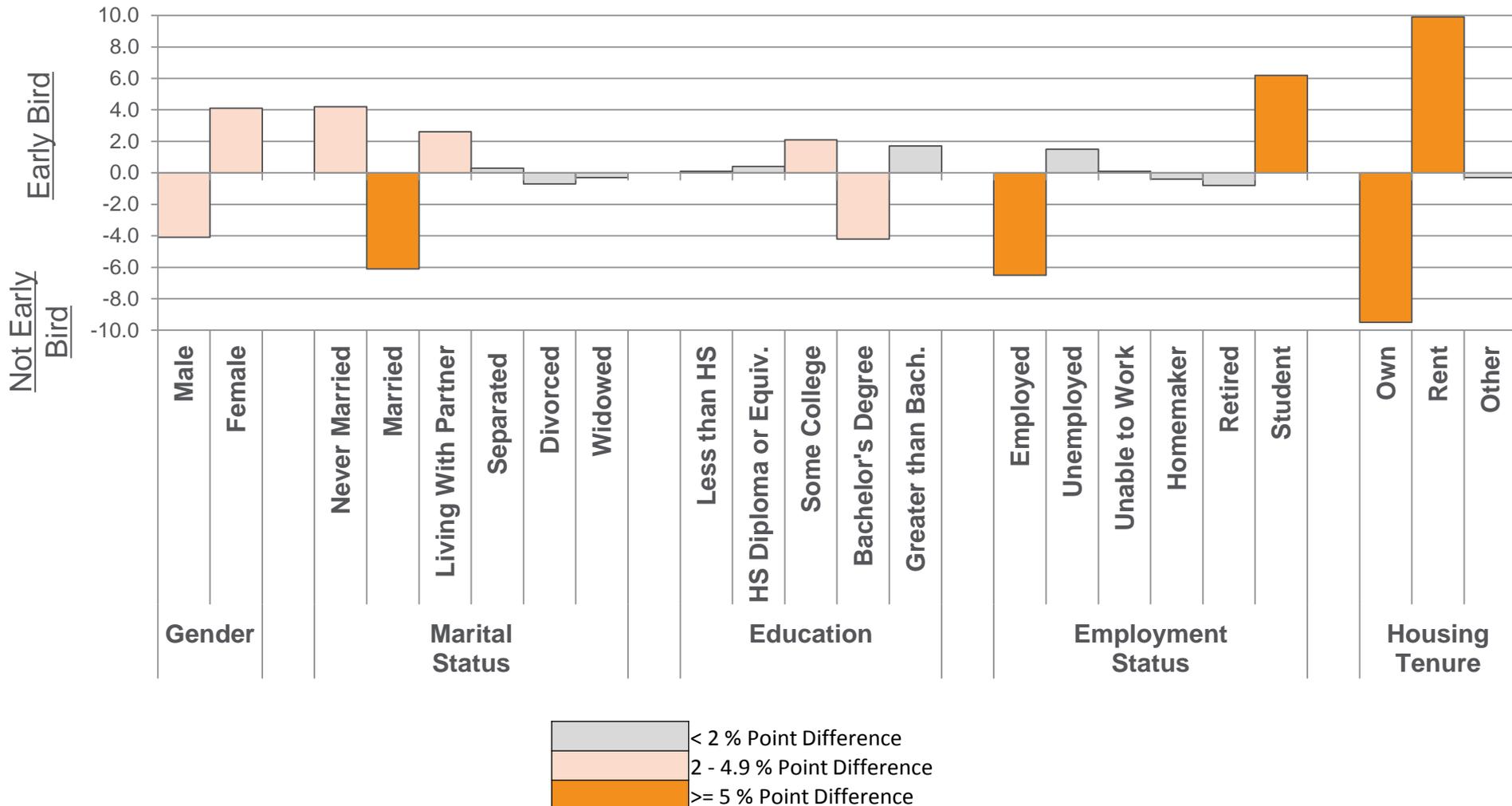
# What form and denomination of monetary incentives can offset a potential lack of saliency?

Do early bird and non-early bird respondents differ in terms of data quality?

1. How do completion times differ?
2. How do the number of skips differ?
3. Is one more likely to straight-line through the survey?

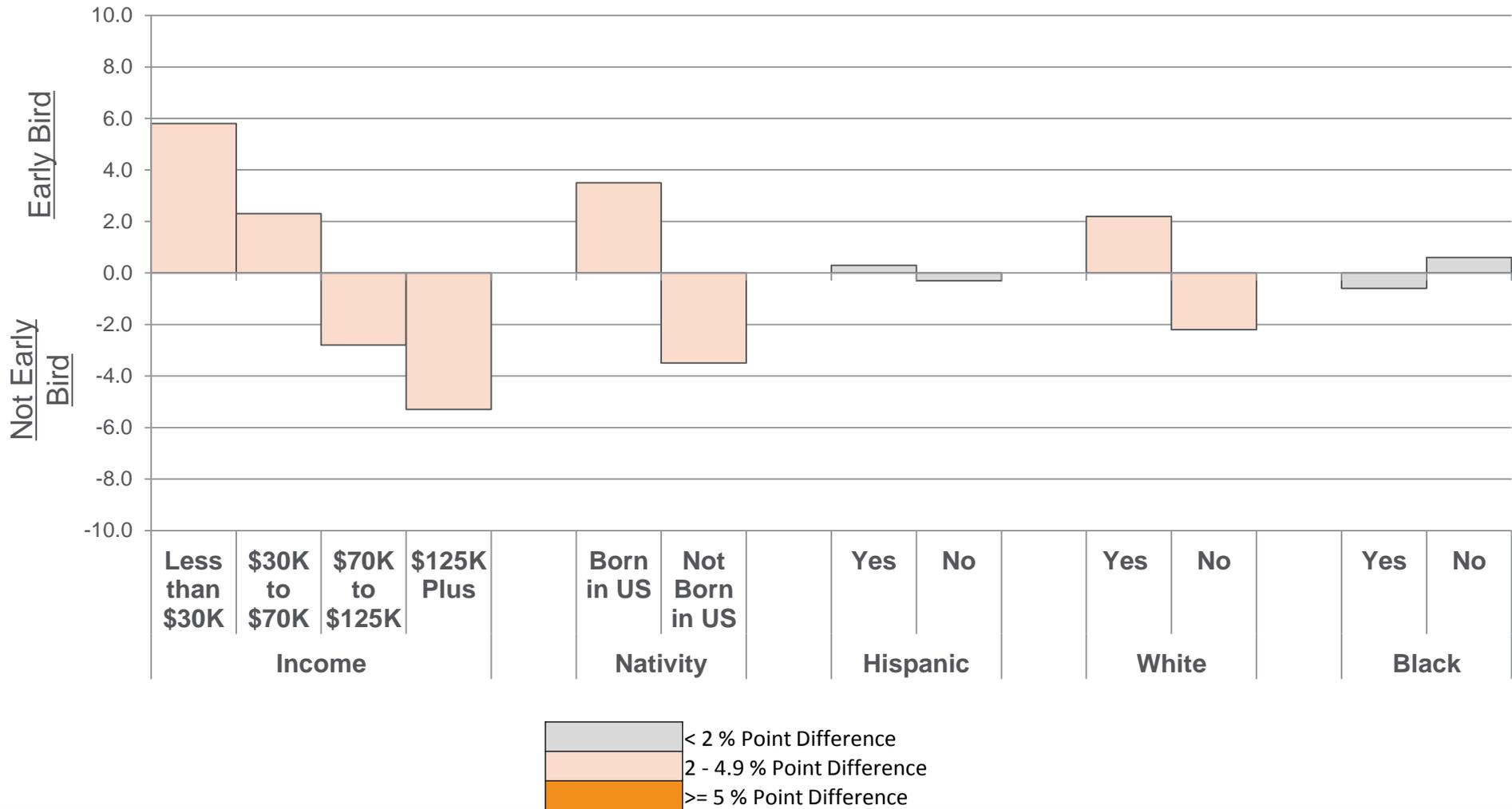
# Respondent Profiles

## % Point Difference



# Respondent Profiles

## % Point Difference



# Survey Metrics for Data Quality

- Survey Completion Times
- Skipped Questions
- Straight-lining

# Survey Completion Times

**Table 1. Average Completion Time (Minutes)**

	Early Bird	Not Early Bird
<b>WEB</b>	18.0	17.7

# Skipped Questions (Cont'd)

**Table 2. Number of Questions Skipped (Web)**

	Early Bird*	Not Early Bird*
0-4	98.0%	96.7%
5-9	1.4%	2.4%
10-14	0.3%	0.5%
15-19	0.1%	0.2%
20-24	0.1%	0.1%
25-29	0.0%	0.0%
30+	0.2%	0.2%
Total	100.0%	100.0%

\*Significant at 0.05

# Straight-lining

**Table 3. Straight-lining Patterns (Web Only)**

	Early Bird	Not Early Bird
% Questions Answered with First Response Option	23.4%	23.1%
% Questions Answered with Last Response Option	53.0%	53.3%

# Summary of Survey Metrics Findings

- **Completion times**
  - Average completion time not significant
- **Questions skipped**
  - Average number of questions skipped was significant ( $p < .05$ )
- **Straight-lining**
  - Number of respondents selecting FIRST option was not significant
  - Number of respondents selecting LAST option was significant
- **Overall, data quality as shown by survey metrics was the same if not better for early bird respondents**

# What kind of incentive leverages the benefits of participation to outweigh the costs for respondents in surveys offered over the web survey?

- Is questionnaire length an incentive?
  - Equal monetarily
- 3 x 2 experiment (Mode by Type of Questionnaire)
  - Participants were given the same time estimate to complete long and short instrument in Web and Phone (30 mins)

Mode	Type of Questionnaire	
	<u>Short</u>	<u>Long</u>
Phone	223	217
Mail	179	114
Web	538	494
<b>Total</b>	<b>940</b>	<b>825</b>

# Results

- Overall comparison of Short vs. Long
  - Results from a two sample t-test
    - Using p-value < .10 as marginally significant
    - Also, using conventional statistical levels (p < .001; p < .01; p < .05)

Overall	Short	Long	Diff.	Sig.	p-value
CASRO response rate	11%	10%	1%	<i>Marginally significant</i>	<.10
Interview completion rate	59%	56%	3%	<i>Significant</i>	<.001

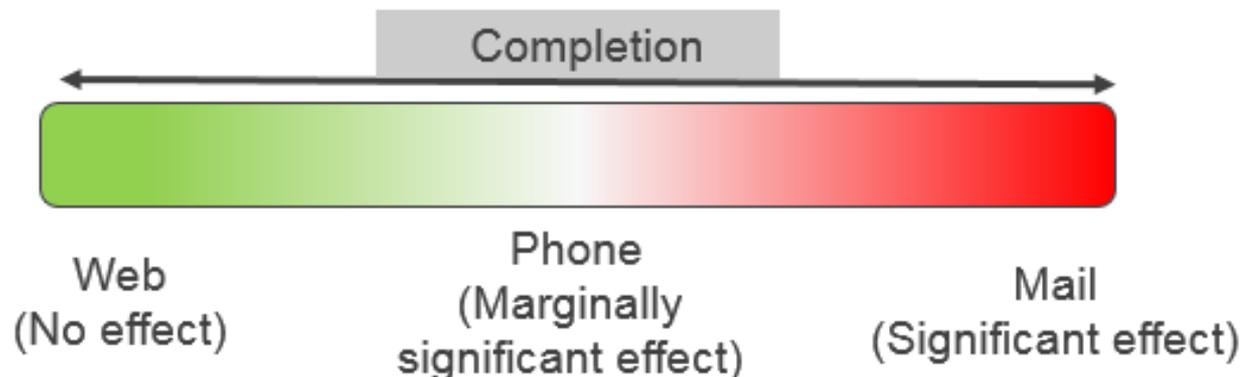
# Results

- Overall comparison of Short vs. Long by Mode

Interview completion rate	Short	Long	Diff.	Sig.	p-value
Mail	45%	42%	3%	Significant	<.001
Phone	56%	51%	5%	<i>Marginally significant</i>	<.10
Web	69%	67%	2%	Not significant	>.10
Overall	59%	56%	3%	Significant	<.001

# Take away—length is an incentive when noticeable

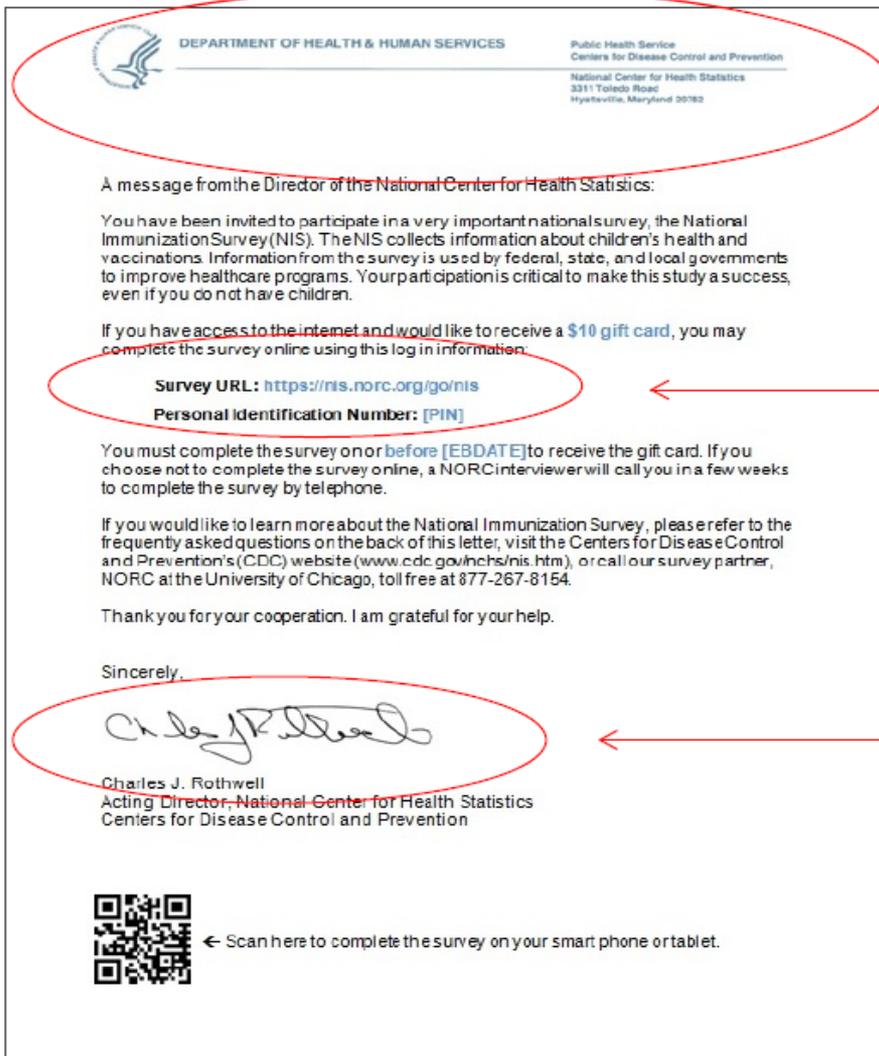
- Questionnaire length
  - Likely to have an impact on **completion rates**, but not likely to have an effect on **response rates**
- In terms of completion rate:
  - Likely to have a *marginally* significant effect in phone (~5%)
  - Likely to have a statistically significant effect in mail (~3%)



# What other design or administrative features interact with incentives?

- We know the using official letterhead from a named organization does “legitimize” a survey. Thus, there is leverage in including it.
- What we don’t know as much about it other visual features and their interactions with monetary incentives.

# Letter with features and QR Code



CDC Official  
Logo

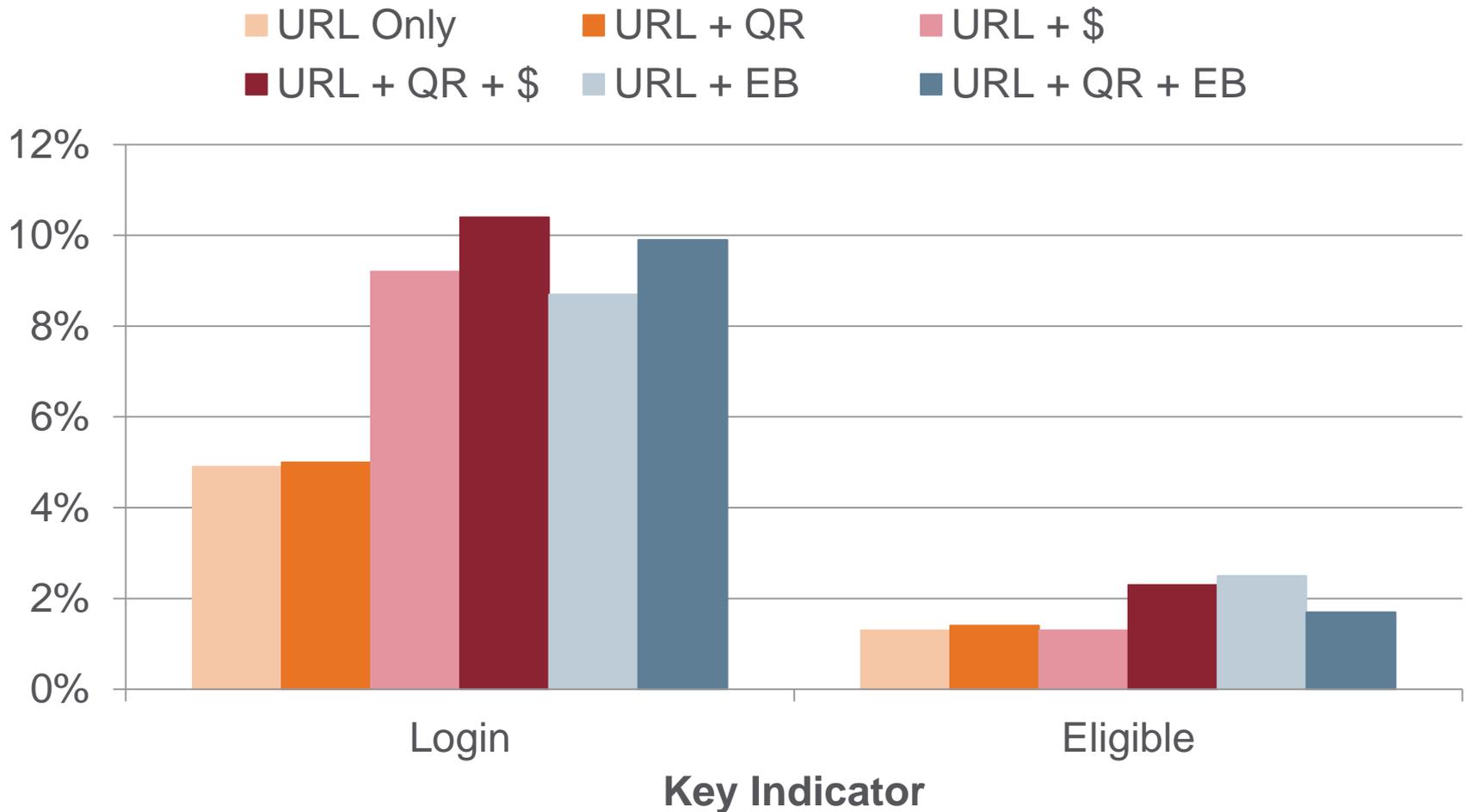
URL and PIN

Signature

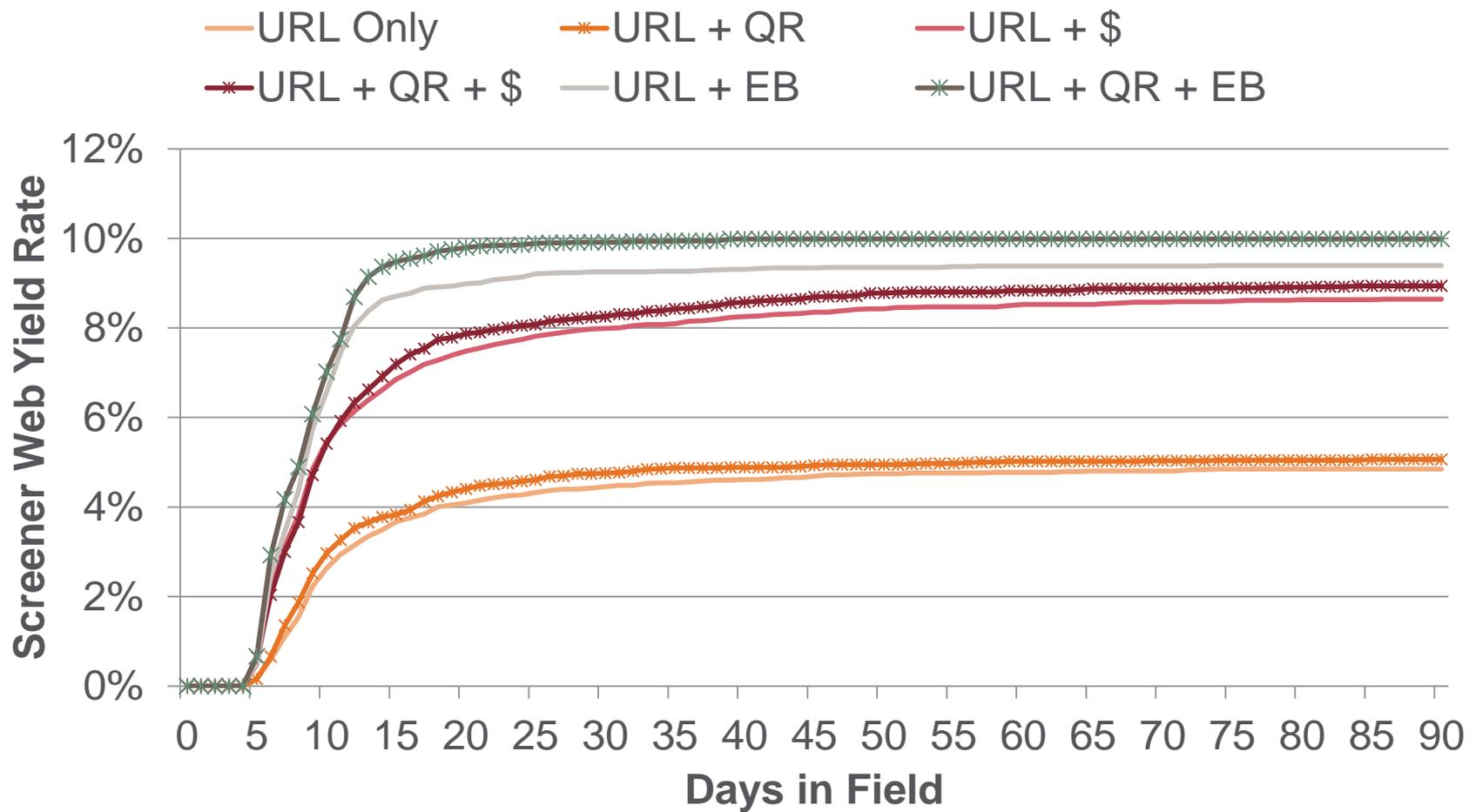
# Web First Experimental Design

Incentive Experimental Groups	QR Code Experimental Groups	
	No QR Code	QR Code
<b>No Incentive</b>	<ul style="list-style-type: none"> <li>• Advance letter with URL</li> <li>• Cardstock insert</li> </ul>	<ul style="list-style-type: none"> <li>• Advance letter with URL and QR code</li> <li>• Cardstock insert with QR code</li> </ul>
<b>Prepaid Incentive</b>	<ul style="list-style-type: none"> <li>• Advance letter with URL</li> <li>• Cardstock insert</li> <li>• \$1 prepaid incentive</li> </ul>	<ul style="list-style-type: none"> <li>• Advance letter with URL and QR code</li> <li>• Cardstock insert with QR code</li> <li>• \$1 prepaid incentive</li> </ul>
<b>Early Bird Incentive</b>	<ul style="list-style-type: none"> <li>• Advance letter with URL</li> <li>• Cardstock insert</li> <li>• \$1 prepaid incentive</li> <li>• Promised incentive if completed within 10 days</li> </ul>	<ul style="list-style-type: none"> <li>• Advance letter with URL and QR code</li> <li>• Cardstock insert with QR code</li> <li>• \$1 prepaid incentive</li> <li>• Promised incentive if completed within 10 days</li> </ul>
<b>No Web offer</b>		

# NIS-MM Web First Indicators by Experimental Group



# NIS Screener Web Rate by Days in Field and Experimental Group

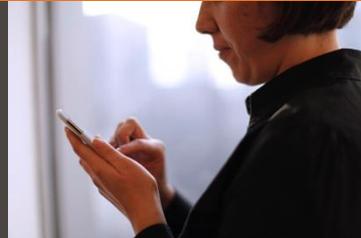


# Overall summary and recommendations

- What form and denomination of monetary incentives can offset a potential lack of saliency for the respondent such that they engage in a web survey?
  - Early bird works without evident data quality issues
- What kind of incentive leverages the benefits of participation to outweigh the costs for respondents in surveys offered over the web survey?
  - Questionnaire length can create leverage in mail surveys. Can we find this effect in web?
- What other design or administrative features interact with incentives?
  - Other visual features can work in conjunction with monetary incentives

Comments and questions can be sent to [stern-michael@norc.org](mailto:stern-michael@norc.org)

**Thank You!**



**NORC**<sup>75</sup>  
*at the UNIVERSITY of CHICAGO*

 insight for informed decisions™