Third Time’s a Charm?
Systematic Analysis of the Effect of Sending a Third Questionnaire on Response Rates for Mail Surveys

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The problem

• We are doing a lot of mail surveys

• Recently seeing so little coming from our last mailings
Want to give our clients good advice

• Clients:
  • Want to implement their studies based on best practices
  • Want to describe their methods using industry standards
• Response rates to mail surveys declining
  • Proportion of sample requiring 3\textsuperscript{rd} mailing has increased
  • Cost of 3\textsuperscript{rd} mailing has increased
• We decided it was time to take a systematic look...
Impetus for re-evaluation … How did we get here?

• Observation that 3rd mailing is not yielding much

![Graph showing response rates over three mailings with data from Stevenson et al. 2017 and Dykema et al. 2018]
Outline

• Where are we now and how did we get here
  • Mail survey methods
  • Response rates
  • Why we care about response rates

• Methods for our review

• Results

• Modeling of field costs

• Discussion
Outline

• Where are we now and how did we get here
  • Mail survey methods
  • Response rates
  • Why we care
Current climate for survey data collection via mail surveys

• Have been and continue to be one of the “go to” methods (Stedman et al. 2019)

• Increasingly used to collect data from general population (Stern et al. 2014)

• Response rates to mail surveys overall declining
Best practices for conducting mail surveys … the past

• Codified in “Mail and Telephone Surveys: The Total Design Method” (Dillman 1978)

• 4-contact strategy
  • 1st contact (1st full mailing)
    • Questionnaire and cover letter
  • 2nd contact
    • Postcard
  • 3rd contact (2nd full mailing)
    • Questionnaire and cover letter
  • **4th contact (3rd full mailing)**
    • Questionnaire and cover letter
    • Sent by certified mail

• Later editions encouraged a 5-contact strategy with pre-notification
“No one disputes that mail survey response rates are declining”

Analysis
- 191 studies
- Data collected by same center
- Used 4-contact strategy

Results
- 77% in 1970s
- 43% in 2010s
- 21% by 2030s
More trends in mail survey response rates (Lesser et al. 2012)
Reminder - Why do we care about response rates anyway?

- Confer face validity to the data collection effort
- Client-centered needs
- Journal requirements
- Analysis and data quality
  - Smaller sample sizes increase sampling variance
  - Smaller sample size mean less “n” for analysis
  - Lower response rates increase the RISK for nonresponse bias
Best practices for conducting mail surveys … the present

• “Internet, Phone, Mail, and Mixed-Mode Surveys: The Tailored Design Method” (Dillman, Smyth and Christian 2014)

• “using multiple carefully designed contacts that are strategically timed is more important than using this exact system of contacts”

• Emphasis on
  • Tailoring to population, topic, contact attempt, study design
  • Personalization
  • Use of incentives

• Still recommend
  • Sending a 3rd questionnaire when budget allows
  • Using an alternative delivery method for 3rd mailing
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• **Methods for our review**
Methods

• Selected mail studies conducted by the UWSC: 2014-2018

• Inclusion criteria
  • Mail only design without a web or other data collection component
  • Three full mailings that include a paper instrument

• Exclusion criteria
  • Studies part of a longitudinal study design

• Overall
  • N = 22 studies
  • N = 38,547 sample members
• Where are we now and how did we get here
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Results

• Response rates by mailing

• Percentage of completes by mailing

• Did last full mailing behave differently by study type:
  • Incentive amount
  • Sample type
  • Length of instrument
Response rate after three full mailings by study
Average response rate increase after each full mailing

- Mailing 1: 31.2%
- Mailing 2: 8.7%
- Mailing 3: 3.7%
Percent distribution of overall completes by study
Average distribution of completes by each mailing

- Mailing 1: 69.9%
- Mailing 2: 21.1%
- Mailing 3: 9.0%
Average response rate by incentive

<table>
<thead>
<tr>
<th>Incentive Range</th>
<th>Mailing 1</th>
<th>Mailing 2</th>
<th>Mailing 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>$2 or less</td>
<td>27.75</td>
<td>8.89</td>
<td>3.85</td>
</tr>
<tr>
<td>$5 or more</td>
<td>36.15</td>
<td>8.34</td>
<td>3.48</td>
</tr>
</tbody>
</table>
Average response rate by sample type

- **ABS**
  - Mailing 1: 29.83
  - Mailing 2: 8.07
  - Mailing 3: 3.68

- **List**
  - Mailing 1: 29.40
  - Mailing 2: 8.74
  - Mailing 3: 3.71
Average response rate by booklet length

- Mailing 1
- Mailing 2
- Mailing 3

4 pages or less:
- Mailing 1: 24.76
- Mailing 2: 9.14
- Mailing 3: 3.53

8 pages or more:
- Mailing 1: 35.63
- Mailing 2: 8.33
- Mailing 3: 3.81
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• Modeling of field costs
Field cost modeling

• Modeled and examined both cost and yield
  • Not actual costs – just simulations
  • Cost of mailings – printing, postage & stuffing

• Started with a short survey – 4 pages
• Evaluated costs

• Then:
  • How did picture change if response rates were lower or higher
  • With longer survey
  • Surveys with no incentives
Field cost modeling

• For each of these:

• Evaluated fielded and achieved N (completes)
  • 3 contact survey
  • 4 contact survey
  • Same costs as 4 contact survey – but increase N and only 3 contacts: Full, postcard, full

• Determine: what could we get for N, if we give up ~4% increase.
Same field costs 25% more N
4 pages, $2 preincentive, high response rate survey outcome

Same field costs 19% more N

n=1000, 2 full mailings
- Unreturned: 600
- Completes: 400

n=1000, 3 full mailings
- Unreturned: 640
- Completes: 360

n=1190, 2 full mailings
- Unreturned: 761
- Completes: 429

Unreturned Completes

n=1000, 2 full mailings n=1000, 3 full mailings n=1190, 2 full mailings
Same field costs
35% more N

- n=1000, 2 full mailings
  - Unreturned: 400
  - Completes: 440
- n=1000, 3 full mailings
  - Unreturned: 400
  - Completes: 440
- n=1350, 2 full mailings
  - Unreturned: 592
  - Completes: 804

4 pages, $0 preincentive, low response rate survey outcome
12 pages, $2 preincentive, low response rate survey outcome

Same field costs 28% more N

- n=1000, 2 full mailings: 400 Unreturned, 440 Completes
- n=1000, 3 full mailings: 400 Unreturned, 440 Completes
- n=1280, 2 full mailings: 562 Unreturned, 562 Completes
Same field costs 21% more N

$2 pre - n=1000, 2 full mailings

$2pre - n=1000, 3 full mailings

$2 pre - n=1210, 2 full mailings

Unreturned

Completes
Cost modeling summary

- For a ~4% increase in N, we were:
  - Increasing costs 17-29%
  - Could have instead, been increasing yield 19-35% -> Instead of 4% (not include DE costs)

- Effects even more prominent when:
  - Expect response rates to be low (Hmmm)
  - Surveys are longer and costs are higher
  - Incentives are not being used (Hmmm)
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Discussion – More research

- These are only response rate, need to look more closely at non-response, examining:
  - Composition of respondents
  - Answers to key survey items

- We want to look at and experiment with other designs:
  - Are there other things we could/should be doing with that 3rd full mailing?
    - $5 Pre, but only 2 full mailings
    - $2 Pre, $5 sequential pre, but only two full mailings

- What will web-push w/mail follow-up bring?
Hope will be part of our discussion

• Questions - What are your shops doing vis a vis:

  • What do you think – is ~4% bump enough? (10% of completes?)
  • Mail surveys # of contacts & full mailings
  • Differentiation of mailings, especially 3rd full
  • What else are you trying?
  • Anybody else using sequential preincentives?
Thank you!

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SLIDES TO DELETE – PROBABLY 😊
Percent distribution of overall completes by incentive

- $2 or less:
  - Mailing 1: 66.22%
  - Mailing 2: 23.56%
  - Mailing 3: 10.22%

- $5 or more:
  - Mailing 1: 75.22%
  - Mailing 2: 17.56%
  - Mailing 3: 7.21%
Percent distribution of overall completes by booklet size

- **4 pages or less**
  - Mailing 1: 63.84%
  - Mailing 2: 25.96%
  - Mailing 3: 10.19%

- **8 pages or more**
  - Mailing 1: 74.10%
  - Mailing 2: 17.75%
  - Mailing 3: 8.16%