Effects of Mode and Incentives on Response Rates, Costs, and Response Quality in a Survey of Alcohol Use Among Young Adults

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Background

Central research question

What impact does mode order (mail/web or web/mail) have on response rates, costs, and data quality in a study of alcohol use and misuse among young adults

Motivation for study design

• Coverage problem with younger adults with RDD
• Response rate concern for younger adults
• Desire to drive respondents to web
• May need mixed mode solution
• Do small cash preincentives perform differently in web than mail
Study design

• Topic: binge drinking and impaired driving
• Sample of young drivers
  • DOT Drivers license file
  • 9 Counties in Wisconsin
  • N=7,200
• Short questionnaire (4 page SAQ)
• University Med School/Pop Health sponsor
Experimental groups

Sequential modes with differing preincentives

- Mail/Web -$1
- Mail/Web -$2
- Web/Mail -$1
- Web/Mail -$2
Mail/Web

Five contact points:

• First mail questionnaire with $1/$2 cash (Day 1)
• Postcard reminder (Day 4)
• Second mail questionnaire (Day 24)

• Mode switch – Letter with URL (Day 43)
• Postcard reminder (Day 47)
Web/Mail

Five contact points:

- First letter with URL $1/$2 cash (Day 1)
- Postcard reminder (Day 4)
- Second letter with URL (Day 24)
- Mode switch – mail questionnaire (Day 43)
- Postcard reminder (Day 47)
Response rates: Mail only vs web only (before mode switch)

- Mail $1: 39.2%
- Mail $2: 42.7%
- Web $1: 25.8%
- Web $2: 29.7%
Response rates with both modes: Mail/web vs web/mail

- **Mail/Web**
  - $1: 39.2%
  - $2: 42.7%

- **Web/Mail**
  - $1: 25.8%
  - $2: 29.7%
## Costs per complete with dual mode: Mail/Web vs. Web/Mail

<table>
<thead>
<tr>
<th>Cost</th>
<th>Mail/Web $1</th>
<th>Mail/Web $2</th>
<th>Web/Mail $1</th>
<th>Web/Mail $2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Variable Costs</td>
<td>$12,071</td>
<td>$13,748</td>
<td>$9,563</td>
<td>$11,248</td>
</tr>
<tr>
<td>Cost Per Complete</td>
<td>$17.99</td>
<td>$19.10</td>
<td>$16.35</td>
<td>$16.69</td>
</tr>
<tr>
<td>Response Rates</td>
<td>44.1%</td>
<td>47.2%</td>
<td>38.9%</td>
<td>44.0%</td>
</tr>
<tr>
<td>Total Number of Completes</td>
<td>671</td>
<td>720</td>
<td>577</td>
<td>674</td>
</tr>
</tbody>
</table>

**Cost Differences:**
- Mail/Web $1: +$1.11
- Web/Mail $1: +$0.34
- Mail/Web $2: +3.1%
- Web/Mail $2: +5.1%
Effects on data quality

• Item missing data
• Weak satisficing
• Responses to select survey questions
• Demographics/nonresponse bias

• There were NO differences due to incentives for ANY of these measures of data quality
Percent of cases with any missing data

<table>
<thead>
<tr>
<th>Mode</th>
<th>Mail/Web Initial</th>
<th>Web/Mail Mode</th>
<th>Mail Mode Completed</th>
<th>Web</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>31.4%</td>
<td>12.2%</td>
<td>32.9%</td>
<td>2.1%</td>
</tr>
</tbody>
</table>
Weak satisficing: Selecting offered “don’t know” response

Selecting offered “don’t know” response (%)

<table>
<thead>
<tr>
<th></th>
<th>Mail</th>
<th>Web</th>
</tr>
</thead>
<tbody>
<tr>
<td>6.7%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4.9%</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Mail: 6.7%
Web: 4.9%
Effects on survey responses

During the past 30 days…

• On how many days did you have one or more drinks of alcohol?
• On the days when you drank, how many drinks did you drink on average?
• On how many occasions did you have 4/5 or more drinks?
• How many times have you driven when you have had perhaps too much to drink?
Analysis of survey responses

We compared across:

- All 4 experimental groups
- $1 vs. $2
- Mail/Web vs. Web/Mail assigned
- Mode completed
- Men and women

Comparing:

- Mean days/occurrences
- Any vs. none days/occurrences
Results – Very little difference

- No differences
  - Experimental groups
  - $1 vs. $2
  - Mail/Web vs. Web/Mail assigned
Results – Very little difference, but…

• Men had higher levels of reporting to mail compared to web for:
  • Heavy drinking
    • 3.6 vs 3.1 times in last 30 days
    • 62% vs 56% ever
  • Drinking and driving
    • 0.6 vs 0.4 times in last 30 days
    • 20% vs. 14% ever
Analysis of nonresponse bias

We compared across:

- All 4 experimental groups

Combined:

- $1 \text{ vs. } $2
- Mail/Web vs. Web/Mail
- Completed Mode

Also looked at initial mode vs second mode assigned (within each treatment)
Analysis of nonresponse bias compared

Administrative data from drivers license files for:
- Age
- Gender

All survey item demographics:
- Gender
- Age
- Race
- Education
- Current enrollment in school or job training
Nonresponse bias

Gender

- No differences by experimental group, mode assigned, incentive amount
- Women more likely to respond overall
- Web did little to correct this

Age

- No differences by experimental group, mode assigned, incentive amount, first vs. second mode
- Only activity:
  Statistically significant difference between modes within Web-Mail-$2 group
  (Addition of mail brought in more older R’s)
Other demographic comparisons of respondents

Race
• No statistically significant differences across 4 experimental groups, incentive amount
• Mail/Web more nonwhites than Web/Mail (~2.5%)

Education
• No differences by experimental group, mode assigned, incentive amount
• Web/Mail-$1 - Mail brought in more lower education
Discussion

• Findings:
  • Response rates highest for Mail/Web-$2
  • Web-Mail-$2 performed well, with large reduction in missing data, and lower cost for complete
  • $2 performed significantly better than $1, particularly in Web-Mail
  • Adding Web as a second mode to Mail much less effective

• Notes:
  • Short survey on highly sensitive topic
  • Type of web request: USPS mailed request requiring URL and password
Limitations

- More admin data would be helpful
- Disentangling effects: additional mode vs. additional contacts
- Incentives:
  - Only slight increase from $1 and $2
  - What might $5 have looked like? Or $0?
Thank You!

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