What Does it Mean to be Cost Effective?

- Lowest survey cost
  - Based on optimistic assumptions or goals (e.g., declining RR environment)

- Including efforts to maximize response (at the lowest survey cost)
  - Incentives?
  - Large upfront cost
  - Focus on response - well known effectiveness
  - Lesser focus on return on investment (ROI) - research limited on reductions in effort

- Lowest fixed cost + maximizing response + improving representativeness
  - Incentives generally bring in more of the same
    - Is this a bad thing?
Hypotheses & Research Questions

• Incentives & special mail delivery
  – H1: Incentives are more effective (higher RR) than special mail delivery methods
  – H2: Incentives and special mail delivery is more effective than either alone
  – What effects will these have on:
    ▪ Sample compositions, key outcomes, and attitude measures and perceptions

• Costs (main focus)
  – H3: Incentives are more cost effective than without
  – H4: Special mail delivery methods are less cost effective than incentives
  – How do we measure cost
    ▪ Base cost - does not account for yield
    ▪ Cost per complete - accounts for yield
    ▪ Cost to achieve equivalent yields - what would the cost have been to reach same goals
Background: American Crime Victimization Survey (ACVS)
Companion to the National Crime Victimization Survey (NCVS)

• American Crime Victimization Survey (ACVS)
  – Companion survey to parallel the National Crime Victimization Survey (NCVS)
  – Sponsored by the Bureau of Justice Statistics

• Purpose
  – Lower-cost approach for producing local-area estimates of victimization and community measures
  – Designed for use by local jurisdictions

• Other Differences
  – ACVS is an equal-probability addressed-base sample (ABS), NCVS is area-probability
  – ACVS a 2-year repeated cross-section, NCVS a rotating panel
  – ACVS self-administered by mail, NCVS interviewer-administered by Census
    ▪ ACVS limited in content compared to NCVS
Data Collection Methodology of ACVS Field Test

• Sample selected within the 40 largest metropolitan areas
  – Allocated across 6 incentive-by-mail treatment groups
    ▪ Experiments in year 2 of field test: 3 incentive levels \( \times 2 \) delivery methods

• General data collection methodology
  - Survey mailing packet #1 (first-class postage)
    \( \text{Incentive level varied ($0, \$1, \$2)} \)
  - Postcard thank you/reminder
  - Survey mailing packet #2 (first-class postage)
  - Survey mailing packet #3
    \( \text{Mail delivery method varied (1st class USPS / FedEx)} \)
  – All Survey packets included:
    ▪ cover letter, survey, return envelope

\[ \text{Timing} \]

\[ \text{Initial Mailing} \]

\[ 10 \text{ days after initial mailing} \]

\[ 6 \text{ weeks after initial mailing} \]

\[ 9-10 \text{ weeks after initial mailing} \]
Treatment Groups

- Incentive and Mail delivery treatments: (3 incentive * 2 mail conditions)

<table>
<thead>
<tr>
<th>Treatment Group</th>
<th>Incentive in Survey Mailing 1</th>
<th>Delivery Mode in Survey Mailing 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>0U</td>
<td>$0</td>
<td>USPS</td>
</tr>
<tr>
<td>1U</td>
<td>$1</td>
<td>USPS</td>
</tr>
<tr>
<td>2U</td>
<td>$2</td>
<td>USPS</td>
</tr>
<tr>
<td>0F</td>
<td>$0</td>
<td>Federal Express</td>
</tr>
<tr>
<td>1F</td>
<td>$1</td>
<td>Federal Express</td>
</tr>
<tr>
<td>2F</td>
<td>$2</td>
<td>Federal Express</td>
</tr>
</tbody>
</table>
Response

• Final response after all mailings (after 17 week field period)

*Comparison group
Response & Cost per Complete

*Comparison group

- **Response**: 0U* - $1.63, 1U - $1.64, 2U - ($3.75), 0F - ($1.23), 1F - ($1.37), 2F

- **Cost / Complete**: 0U* - $0, 1U - $35, 2U - $40, 0F - $45, 1F - $5, 2F

2018 FCSM
Sample Composition

• Identified compositions correlated with experiencing victimization
  – Presence of anyone age 18-24
  – Presence of a male age 18-24
  – African-American in household
  – Hispanic in household
  – High mobility—household moved in last year

• Did incentive/delivery alternatives change achieved compositions?

• Impact: Increase in groups correlated with victimization can affect estimates of victimization
Sample Composition - Results

• Observed changes in some compositions, but not all
  – Presence of anyone 18-24 & Presence of a male 18-24: no changes across conditions
    ▪ Largest difference: presence of anyone 18-24 (0.5% between base and $2+FedEx)
  – African-American in household
    ▪ Incentive conditions increased proportions - no differences in FedEx.
      – Larger increase from $2 vs $1
  – Hispanic in household
    ▪ Incentive + FedEx conditions increased proportions
      – Incentive levels roughly equivalent (within FedEx group).
  – HH moved within past year
    ▪ Incentive conditions increased proportions - FedEx: small but positive additional increase
      – No difference between incentive groups.
Key Outcomes - Results

• Measures: proportions of households experiencing different types of victimization (e.g., touched by crime or victimization prevalence)

• No change across all outcome measures
  – Household reports serious violent crime
  – Household reports violent crime
  – Household reports property crime

• Overall, some differences in compositions, but no effect on victimization prevalence
  – Differences may lie in number of victimizations experienced (victimization rate) - unable to examine with these instruments
Attitude Measures and Perceptions

• Collect perceptions of community safety and attitudes toward police
  – Subset of selected items
    ▪ On the whole, how much of the time is the community where you live safe?
    ▪ Overall, how much of the time is the place where you work safe?
    ▪ How would you rate the local police on treating people respectfully?
    ▪ How consistent are the local police in applying the laws in the same way to everyone?
    ▪ Taking everything into account, how would you rate the job the local police are doing?

• No differences in reports by treatment groups
  – Suggesting attitudes and perceptions not affected by incentive
Variable Costs

• Assumed cost: cost a hypothetical local area/jurisdiction would face
  – Printing
    ▪ English and Spanish
  – Outgoing Postage
    ▪ USPS Presorted First Class
    ▪ Federal Express
  – Incentives: $0, $1, or $2 (depending on treatment group)
  – Incoming Postage (survey return)

• Metrics:
  – Initial cost; cost per completed survey; cost for same realized goal
Cost Results

- Detailed results: production and costs across metrics
  - Total cost and cost per complete

<table>
<thead>
<tr>
<th></th>
<th>Completes</th>
<th>Ineligibles</th>
<th>Nonresponse</th>
<th>AAPOR RR2</th>
<th>Total cost</th>
<th>Estimated Cost per complete</th>
</tr>
</thead>
<tbody>
<tr>
<td>0U</td>
<td>9,615</td>
<td>3,200</td>
<td>23,392</td>
<td>29.1%</td>
<td>$ 254,694</td>
<td>$ 26.49</td>
</tr>
<tr>
<td>1U</td>
<td>11,249</td>
<td>3,103</td>
<td>21,857</td>
<td>34.0%</td>
<td>$ 279,670</td>
<td>$ 24.86</td>
</tr>
<tr>
<td>2U</td>
<td>12,456</td>
<td>3,040</td>
<td>20,712</td>
<td>37.6%</td>
<td>$ 309,520</td>
<td>$ 24.85</td>
</tr>
<tr>
<td>0F</td>
<td>11,449</td>
<td>2,856</td>
<td>21,903</td>
<td>34.3%</td>
<td>$ 346,197</td>
<td>$ 30.24</td>
</tr>
<tr>
<td>1F</td>
<td>13,077</td>
<td>2,826</td>
<td>20,306</td>
<td>39.2%</td>
<td>$ 362,441</td>
<td>$ 27.72</td>
</tr>
<tr>
<td>2F</td>
<td>13,957</td>
<td>2,753</td>
<td>19,499</td>
<td>41.7%</td>
<td>$ 388,823</td>
<td>$ 27.86</td>
</tr>
</tbody>
</table>
### Cost to Reach Same Goal

- **Base condition $0/USPS:** What change in cost to reach same goal of treatment groups?
  - Base cost per complete ($26.49); 8% ineligible; base RR 29.1%
  - Original sample size per treatment group: ~36,207

<table>
<thead>
<tr>
<th>Treatment Group</th>
<th>Complete Goal (target group)</th>
<th>Add’l Sample Needed</th>
<th>% Increase</th>
<th>New Total Sample</th>
<th>Change in Total Cost</th>
<th>% Cost Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>0U to 1U</td>
<td>11,249</td>
<td>5,768</td>
<td>15.9%</td>
<td>41,975</td>
<td>$18,316</td>
<td>6.1%</td>
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<tr>
<td>0U to 2U</td>
<td>12,456</td>
<td>10,271</td>
<td>28.4%</td>
<td>46,478</td>
<td>$20,439</td>
<td>6.2%</td>
</tr>
<tr>
<td>0U to 0F</td>
<td>11,449</td>
<td>6,514</td>
<td>18.0%</td>
<td>42,721</td>
<td>-$42,913</td>
<td>-14.1%</td>
</tr>
<tr>
<td>0U to 1F</td>
<td>13,077</td>
<td>12,589</td>
<td>34.8%</td>
<td>48,796</td>
<td>-$16,031</td>
<td>-4.6%</td>
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<tr>
<td>0U to 2F</td>
<td>13,957</td>
<td>15,872</td>
<td>43.8%</td>
<td>52,079</td>
<td>-$19,102</td>
<td>-5.2%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Treatment Group Cost</th>
<th>New Base Cost (0U)</th>
</tr>
</thead>
<tbody>
<tr>
<td>$279,670</td>
<td>$297,986</td>
</tr>
<tr>
<td>$309,520</td>
<td>$329,959</td>
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<tr>
<td>$346,197</td>
<td>$303,284</td>
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<tr>
<td>$362,441</td>
<td>$346,410</td>
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<tr>
<td>$388,823</td>
<td>$369,721</td>
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</tbody>
</table>
Summary

• Further confirmation of incentive effects
  – Incentives increased RR and were just as effective as FedEx delivery
    ▪ Combining both = larger increase in RR (increase declined with greater incentive)
      – Future research: given the high cost of FedEx, would larger incentive be better?
    ▪ Modest and mixed differences in key compositions; no changes in key outcome
      – Some different groups brought in, but not consistent with any single treatment

• Focus on cost effectiveness of more expensive approaches
  – Overall cost - not effective as does not account for return “bang for your buck”
  – Cost per complete: a small incentive has positive return - more cost effective
    ▪ Future research: inflection point; interventions to bring in different groups
  – FedEx: Just as effective as $1, but at higher cost
Summary

• Comparing cost to achieve number of completes for incentive/mail conditions under base group assumptions
  – Incentive cheaper than additional sample
    ▪ Greater analytic power at lower total cost
  – Additional sample cheaper than FedEx
    ▪ FedEx showed modest differences in proportion of movers (especially when paired with incentive)
  – Additional sample unlikely to change compositions vs incentive (i.e., more of the same)
    ▪ For some compositions (% African American), incentive increased proportion
Thank you!

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