Examining Response Fatigue and Non-cooperation in the National Household Food Acquisition and Purchase Survey (FoodAPS)

Consumer Expenditure Survey
Survey Methods Symposium
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John A. Kirlin, USDA/ERS
Acknowledgements and Disclaimer

• Co-authors Brady T. West, Mengyao Hu, and Garrett Gremel (University of Michigan)
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• The views expressed are those of the authors and should not be attributed to the Economic Research Service or the U.S. Department of Agriculture.
What’s the issue?

• FoodAPS is a diary survey designed to collect data on all food acquisitions by household members over a 7-day period.
  – “Acquisition” is an event in which food is purchased or otherwise acquired

• Potential for non-reporting of food acquisitions in FoodAPS by household members
  – Refuse to participate on given day or entire week
  – Report some but not all food events on a given day
  – Report some but not all food items for a given event
Today’s focus

• Potential for non-reporting of food acquisitions in FoodAPS by household members
  – Refuse to participate on given day or entire week (at person level)
    – Report some but not all food events on given day
    – Report some but not all food items for a given event
Research questions

• How often did members refuse to participate?
• Who refused to participate?
• Was there variation in the rate of refusals over data collection week?
  – Any evidence of response fatigue?
Data source?

- Survey paradata from FoodAPS

- But first, need to understand overall structure of data collection in FoodAPS
Data collection in FoodAPS

• **Primary respondent (PR)** identified as the person “who does most of the grocery shopping or who is the main meal planner”

• 2 in-person interviews

• All members 11 or more years old track their food acquisitions

• PR gathers info and calls survey center 3 times during week
## Overview of planned data collection week

<table>
<thead>
<tr>
<th>Mon</th>
<th>Tues</th>
<th>Wed</th>
<th>Thu</th>
<th>Fri</th>
<th>Sat</th>
<th>Sun</th>
<th>Mon</th>
<th>Tue</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
<td>8</td>
</tr>
</tbody>
</table>

- **Members track food acquisitions in booklets and with scanner**
- **PR calls to report**
- **PR calls to report**
- **PR calls to report**

**Screener**

**Initial Interview and training**

**Final Interview**

**Feedback Survey**
Phone calls provide paradata

• For each household member on each day, whether status was:
  – Acquired food (confirmed yes)
  – Did not acquire food (confirmed no)
  – Refused to provide info (refused)
  – PR didn’t know (unconfirmed)

• 14,317 members → 100,219 person-days
Results

• How often do members refuse to participate?
• Who refuses?
• Is there variation over data collection week (response fatigue)?
How often do members refuse to participate?

- 50.7% Food
- 38.3% No food
- 3.3% Refused
- 7.7% Don’t know
Collapsed distribution

- Confirmed: 88.9%
- Refused: 3.3%
- Don’t know: 7.7%
To address questions of who and week-day effects...

• Model member reporting status
  – Multinomial logistic regression
  – Confirmed (reference), refused, unconfirmed
Covariates

• Sex, age, education, race, marital status, income, BMI, completed Meals & Snacks form
• Relationship to PR
• Household size, days since last SNAP issuance
• Self-reported financial condition, frequency of bill review, frequency of paying bills on time
Paradata covariates

• Difficulty to get members to participate, ease of keeping track of foods
• Numbers of inbound and outbound calls
• Start-date cohort (day of week)
• Fielding day (continuous and centered as 0-6)
• Interaction of start-date and fielding day
Who refuses to participate? … by marital status

Refused  Unconfirmed

Married *  Widowed  Divorced  Separated  Never (Ref)

6.1%  2.5%  2.9%  2.9%  1.7%  9.6%

6.4%
Who refuses to participate? ... by marital status

- Refused
- Unconfirmed

Married * 6.1% 2.5%
Widowed 9.5% 2.9%
Divorced 5.8% 2.9%
Separated 7.5% 1.7%
Never (Ref) 6.4%
Who refuses to participate?  
... by relation to PR

<table>
<thead>
<tr>
<th>Relation</th>
<th>Refused</th>
<th>Unconfirmed</th>
</tr>
</thead>
<tbody>
<tr>
<td>PR (Ref)</td>
<td>5.9%</td>
<td>0.1%</td>
</tr>
<tr>
<td>Partner/child***</td>
<td>7.8%</td>
<td>4.2%</td>
</tr>
<tr>
<td>Other relative***</td>
<td>11.4%</td>
<td>15.5%</td>
</tr>
<tr>
<td>Non-relative***</td>
<td>16.3%</td>
<td>18.8%</td>
</tr>
</tbody>
</table>

Total: 40%
Who refuses to participate? 
... by age group

<table>
<thead>
<tr>
<th>Age Group</th>
<th>Refused</th>
<th>Unconfirmed</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 to 10***</td>
<td>10.3%</td>
<td>1.3%</td>
</tr>
<tr>
<td>11 to 15***</td>
<td>7.0%</td>
<td>3.3%</td>
</tr>
<tr>
<td>16 to 20</td>
<td>6.3%</td>
<td>6.4%</td>
</tr>
<tr>
<td>21 to 30</td>
<td>9.4%</td>
<td>3.0%</td>
</tr>
<tr>
<td>31 to 55</td>
<td>7.2%</td>
<td>5.6%</td>
</tr>
<tr>
<td>55+ (Ref)</td>
<td>2.4%</td>
<td></td>
</tr>
</tbody>
</table>
Who refuses to participate?  
... by race

Refused  Unconfirmed

<table>
<thead>
<tr>
<th>Race</th>
<th>Refused</th>
<th>Unconfirmed</th>
</tr>
</thead>
<tbody>
<tr>
<td>White</td>
<td>2.8%</td>
<td>6.4%</td>
</tr>
<tr>
<td>Black</td>
<td>5.3%</td>
<td>11.1%</td>
</tr>
<tr>
<td>Other</td>
<td>4.4%</td>
<td>12.8%</td>
</tr>
<tr>
<td>Multiple</td>
<td>0.3%</td>
<td>7.8%</td>
</tr>
</tbody>
</table>
Who refuses to participate?

... by ease of getting members to participate

- Easy/Very easy: 5.8% Refused, 1.4% Unconfirmed
- Neither: 9.3% Refused, 4.2% Unconfirmed
- Diff/Very diff: 14.0% Refused, 16.8% Unconfirmed
- NA/Missing: 9.7% Refused, 4.8% Unconfirmed
Who refuses to participate? ... by ease of keeping track of foods

- Easy/Very easy:
  - Refused: 2.9%
  - Unconfirmed: 5.8%
  - Total: 5.7%

- Neither:
  - Refused: 4.8%
  - Unconfirmed: 13.6%
  - Total: 18.4%

- Diff/Very diff:
  - Refused: 4.4%
  - Unconfirmed: 15.6%
  - Total: 20%

- NA/Missing:
  - Refused: 5.5%
  - Unconfirmed: 16.7%
  - Total: 22.2%
Temporal effects and response fatigue

- Graphs are now predicted probabilities of reporting status by fielding day
- Covariates are:
  - Fielding day (continuous and centered),
  - Start-date (Sun, Mon,..etc), and
  - Interaction of fielding day and start-date
Predicted refusals by fielding day

Predicted probability of refusal

Fielding Day Indicator

Sunday **
Saturday **
Friday (ref)

Predicted Probability of reporting status

Sunday
Monday
Tuesday
Wednesday
Thursday
Friday
Saturday
Predicted confirmeds by fielding day

Predicted probability of confirmed

Fielding Day Indicator

Sunday
Monday
Wednesday

predicted Probability of reporting status

Sunday
Monday
Tuesday
Wednesday
Thursday
Friday
Saturday
Predicted unconfirmeds by fielding day

Predicted probability of unconfirmed

Fielding Day Indicator

- Sunday
- Monday
- Tuesday
- Wednesday
- Thursday
- Friday
- Saturday
Again, predicted refusals by fielding day

Predicted probability of refusal

- Sunday **
- Saturday **
- Friday (ref)

Fielding Day Indicator

- Sunday
- Monday
- Tuesday
- Wednesday
- Thursday
- Friday
- Saturday
Reality check (same scale)

- Confirmed
- Refused
- Not confirmed
Recap – Variation over time?

• Some evidence of response fatigue
• But seems to be focused on those households that start data collection on a Friday, Saturday or Sunday
• Survey protocol led to many unconfirmed days of no reported acquisitions near end of week
Recap - Who most likely to refuse?

- Older teens, adults and seniors
- Never married
- African-Americans
- Non-relatives and “other” relatives of PR
Implications for Diary Surveys

• Day-by-day variation in response rates may be important and informative
• Response fatigue exists in FoodAPS, but not to a great degree
• Is there a cohort effect? Maybe, but why? Worthy of additional research.
Implications (cont)

• For next FoodAPS, need to work on reducing the unconfirmeds

• Provide extra training, reminders, or other inducements to those expected to have higher rates of non-participation.
Thank you!

John A. Kirlin

jkirlin@ers.usda.gov

Extra slides, if needed
Key Characteristics of FoodAPS

- Fielded from April 2012 to January 2013
- Oversampled households participating in the Supplemental Nutrition Assistance Program (SNAP) and other low-income households
- Nationally representative, $N \approx 5,000$
FAH vs. FAFH

- **FAH**
  - Groceries and other foods and drinks you brought home

- **FAFH**
  - Meals, snacks, and drinks you got outside your home
Who refuses to participate?  
... by days since SNAP issuance

- 0 to 10 days: 12.3% Refused, 4.1% Unconfirmed
- 11 to 20 days: 10.8% Refused, 4.3% Unconfirmed
- 21 to 31 days: 12.4% Refused, 5.7% Unconfirmed
- Missing: 11.8% Refused, 14.7% Unconfirmed
- Valid skip (Ref): 6.9%, 3.0%
Status by fielding day

Fielding Day

Refused | Unconfirmed
---|---
1 | 5% | 3.0%
2 | 5% | 3.3%
3 | 7% | 3.4%
4 | 7% | 3.5%
5 | 8% | 3.4%
6 | 10% | 3.3%
7 | 12% | 3.2%

Percentage of total: 20%
Who refuses to participate? ... by inbound calls