Factors to consider for web-based collection of time diary data in the ATUS

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American Time Use Survey (ATUS)
July 16, 2019
Why is ATUS considering web-based data collection?

- Response to the American Time Use Survey (ATUS) is falling
- Tight budgets
- Might the addition of an online collection mode boost survey response and reduce costs?
- Concerns
Outline

- Brief overview of the ATUS
- Research
- General concerns
ATUS Overview
**ATUS Interview**

- 15- to 20-minute CATI interview
- Household composition, labor force questions are asked
- Time-use diary is collected
  - What did you do yesterday?
  - Where were you while you were ______?
  - Who was in the room with you while you were ______?
ATUS Interview

**Question text**

Read if necessary: An activity is anything you did during the day. Activities include both active tasks like socializing, preparing food, or eating; and more quiet tasks like thinking and relaxing. Right now, you are talking to me on the telephone. Talking on the telephone is one type of activity.

**Interviewer Instructions**

**Pre-coded activities**

1. Sleeping
2. Grooming (self)
3. Watching TV
4. Working at main job
5. Working at other job
6. Preparing meals or snacks
7. Eating and drinking
8. Cleaning kitchen
9. Doing Laundry
10. Grocery shopping
11. Attending religious service
12. Paying household bills
30. Don't know/Can't remember
31. Refusal/ None of your business

**Variables**

<table>
<thead>
<tr>
<th>Start Time</th>
<th>Activity</th>
<th>TIME</th>
<th>Hrs</th>
<th>Mins</th>
<th>Stop Time</th>
<th>Who</th>
<th>Who_2</th>
<th>Where</th>
<th>Where Specify</th>
</tr>
</thead>
<tbody>
<tr>
<td>4:00AM</td>
<td>Sleeping</td>
<td></td>
<td>1</td>
<td>4</td>
<td>8:00AM</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8:00AM</td>
<td>Grooming</td>
<td></td>
<td>1</td>
<td>30</td>
<td>8:30AM</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8:30AM</td>
<td>Driving to work</td>
<td>1</td>
<td>30</td>
<td></td>
<td>9:00AM</td>
<td>0</td>
<td></td>
<td>12</td>
<td>Car, truck, or motor</td>
</tr>
<tr>
<td>9:00AM</td>
<td>Working</td>
<td>1</td>
<td>30</td>
<td></td>
<td>9:30AM</td>
<td>0</td>
<td></td>
<td>2</td>
<td>Respondent's work</td>
</tr>
</tbody>
</table>
ATUS Interview

- Additional questions after time diary
  - Summary questions to clearly identify work, income-generating, and volunteer activities
  - Secondary childcare
  - Eldercare
- Modules on special topics
**ATUS Interview**

Were there any activities that you were paid for or will be paid for?

<table>
<thead>
<tr>
<th>Start</th>
<th>Activity</th>
<th>Stop</th>
<th>Where</th>
<th>For main job</th>
<th>For other job</th>
<th>For pay</th>
</tr>
</thead>
<tbody>
<tr>
<td>12:00PM</td>
<td>Preparing meals and snacks</td>
<td>1:00PM</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1:00PM</td>
<td>Laundry/Playing with the dog</td>
<td>1:30PM</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1:30PM</td>
<td>Preparing meals and snacks</td>
<td>2:00PM</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2:00PM</td>
<td>Eating and drinking</td>
<td>2:30PM</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2:30PM</td>
<td>Driving to mall</td>
<td>2:45PM</td>
<td>12</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2:45PM</td>
<td>Shopping for clothes</td>
<td>5:00PM</td>
<td>7</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5:00PM</td>
<td>Driving home</td>
<td>5:25PM</td>
<td>12</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5:25PM</td>
<td>Preparing meals and snacks</td>
<td>5:50PM</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5:50PM</td>
<td>Watching TV</td>
<td>6:30PM</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6:30PM</td>
<td>Eating and drinking</td>
<td>7:00PM</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7:00PM</td>
<td>Driving to the ice cream shop</td>
<td>7:30PM</td>
<td>12</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7:30PM</td>
<td>Eating ice cream</td>
<td>8:15PM</td>
<td>4</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
17 Major activity categories of the ATUS lexicon

- Personal Care
- Household activities
- Caring for and helping household members
- Caring for and helping nonhousehold members
- Work and work-related activities
- Education
- Consumer purchases
- Professional and personal care services
- Household services
17 Major activity categories of the ATUS lexicon

- Government services and civic obligations
- Eating and drinking
- Socializing, relaxing, and leisure
- Sports, exercise, and recreation
- Religious and spiritual activities
- Volunteer activities
- Telephone calls
- Traveling
For release 10:00 a.m. (EDT) Wednesday, June 19, 2019

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AMERICAN TIME USE SURVEY — 2018 RESULTS

In 2018, 89 percent of full-time employed persons worked on an average weekday, compared with 31 percent on an average weekend day, the U.S. Bureau of Labor Statistics reported today. Full-time employed persons averaged 8.5 hours of work time on weekdays they worked, and 5.4 hours on weekend days they worked. Multiple jobholders were more likely to work on an average weekend day than were single jobholders—56 percent, compared with 28 percent.

These and other results from the American Time Use Survey (ATUS) were released today. These data include the average amount of time per day in 2018 that individuals worked, did household activities, and engaged in leisure and sports activities. Additionally, measures of the average time per day spent providing childcare—both as a primary (or main) activity and while doing other things—for the combined years 2014-18 are provided. For a detailed description of ATUS data and methodology, see the Technical Note.

Table A-4A. Percent of employed persons working on their main job on days they worked 1 AM to 11 AM, average for the combined years 2013-17

<table>
<thead>
<tr>
<th>Occupation</th>
<th>12 AM</th>
<th>1 AM</th>
<th>2 AM</th>
<th>3 AM</th>
<th>4 AM</th>
<th>5 AM</th>
<th>6 AM</th>
<th>7 AM</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total, 15 years and over</td>
<td>4.3</td>
<td>3.6</td>
<td>3.2</td>
<td>3.0</td>
<td>4.5</td>
<td>6.7</td>
<td>13.5</td>
<td>28.2</td>
</tr>
<tr>
<td>Management, professional, and related occupations</td>
<td>2.7</td>
<td>1.9</td>
<td>1.5</td>
<td>1.5</td>
<td>2.3</td>
<td>3.6</td>
<td>8.7</td>
<td>22.0</td>
</tr>
<tr>
<td>Management occupations</td>
<td>2.1</td>
<td>1.3</td>
<td>0.8</td>
<td>1.0</td>
<td>1.8</td>
<td>3.8</td>
<td>9.7</td>
<td>23.4</td>
</tr>
<tr>
<td>Business and financial operations occupations</td>
<td>2.4</td>
<td>1.8</td>
<td>1.4</td>
<td>1.4</td>
<td>1.1</td>
<td>2.8</td>
<td>7.8</td>
<td>19.0</td>
</tr>
<tr>
<td>Professional and related occupations</td>
<td>3.2</td>
<td>2.4</td>
<td>2.0</td>
<td>1.9</td>
<td>2.7</td>
<td>3.4</td>
<td>7.9</td>
<td>21.0</td>
</tr>
<tr>
<td>Computer and mathematical occupations</td>
<td>1.7</td>
<td>1.3</td>
<td>0.9</td>
<td>1.0</td>
<td>1.1</td>
<td>1.6</td>
<td>3.6</td>
<td>7.6</td>
</tr>
<tr>
<td>Architecture and engineering occupations</td>
<td>1.9</td>
<td>1.3</td>
<td>1.3</td>
<td>0.6</td>
<td>1.6</td>
<td>2.9</td>
<td>12.9</td>
<td>33.3</td>
</tr>
<tr>
<td>Life, physical, and social science occupations</td>
<td>4.1</td>
<td>3.0</td>
<td>3.4</td>
<td>3.3</td>
<td>3.3</td>
<td>3.9</td>
<td>14.0</td>
<td>24.0</td>
</tr>
<tr>
<td>Community and social services occupations</td>
<td>2.7</td>
<td>1.5</td>
<td>1.4</td>
<td>0.6</td>
<td>1.2</td>
<td>1.8</td>
<td>3.5</td>
<td>13.5</td>
</tr>
</tbody>
</table>

Data series
Tables
Public use data files and documentation
News releases
Web collection
Westat study

- Research Question: Should ATUS move from CATI to self-administered web and CATI mixed-mode data collection?
  - What would the effect be on response rates?
  - What would the effect be on measurement error?
  - Would the data be comparable between modes?

- Literature review
- Design Proposal
- Comparability report
- Mock-up of an instrument for collecting time diary info via the web
Literature review

- Little research on web-collected diaries
- Many of the studies they identified:
  - Are pilot studies
  - Are mixed-mode
  - Use light diaries
  - Use incentives
- Time-use data collected online is of similar quality to data collected by phone and paper
Literature review

Literature on web collection

- Online surveys achieve lower response than other modes
- Web has higher breakoff rates than CATI, especially for complex surveys
Survey design proposal

- Allocation of sample to mode
- Contact procedures
- Diary design
  - Survey questions and layout
  - Summary of diary day
  - Other summary questions
  - Probes/data quality checks
  - Changes to activity classification
Survey design proposal—allocation of sample to the mode

<table>
<thead>
<tr>
<th>Week</th>
<th>Day</th>
<th>Telephone HH</th>
<th>Low Web Use</th>
<th>Non-telephone HH</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>7 days before diary day</td>
<td>Advance mailing</td>
<td>Advance mailing</td>
<td>Advance mailing</td>
</tr>
<tr>
<td></td>
<td>1 day after diary day (if not complete)</td>
<td>Replacement letter</td>
<td>Replacement letter</td>
<td>Replacement letter</td>
</tr>
<tr>
<td>2</td>
<td>1 day after diary day (if not complete)</td>
<td>Replacement letter</td>
<td>Switch to phone for remaining weeks; calls begin on the day after the diary day on week three</td>
<td>Replacement letter</td>
</tr>
<tr>
<td>3</td>
<td>1 day after diary day (if not complete)</td>
<td>Switch to phone for remaining weeks; calls begin on the day after the diary day on week four</td>
<td>Interviewer calls for interview on day after diary day</td>
<td>Switch to phone for remaining weeks; Send letter with pre-paid calling card and call-in number</td>
</tr>
<tr>
<td>4-8</td>
<td>1 day after diary day (if not complete)</td>
<td>Interviewer calls for interview on day after diary day</td>
<td>Interviewer calls for interview on day after diary day</td>
<td>Respondent calls in for interview on day after diary day</td>
</tr>
</tbody>
</table>
Survey design proposal - layout
Survey design proposal – summary of the day

<table>
<thead>
<tr>
<th>Start Time</th>
<th>End Time</th>
<th>Activity</th>
</tr>
</thead>
<tbody>
<tr>
<td>4:00 AM</td>
<td>7:00 AM</td>
<td>Sleeping</td>
</tr>
<tr>
<td>7:00 AM</td>
<td>7:30 AM</td>
<td>Personal Care</td>
</tr>
<tr>
<td>7:30 AM</td>
<td>8:00 AM</td>
<td>Eating and Drinking</td>
</tr>
<tr>
<td>8:00 AM</td>
<td>8:30 AM</td>
<td>Travel</td>
</tr>
<tr>
<td>8:30 PM</td>
<td>12:00 PM</td>
<td>Work</td>
</tr>
<tr>
<td>12:00 PM</td>
<td>5:00 PM</td>
<td>Eating and Drinking</td>
</tr>
<tr>
<td>5:00 PM</td>
<td>5:30 PM</td>
<td>Travel</td>
</tr>
<tr>
<td>5:30 PM</td>
<td>6:30 PM</td>
<td>Eating and Drinking</td>
</tr>
<tr>
<td>6:30 PM</td>
<td>9:30 PM</td>
<td>Watching TV</td>
</tr>
<tr>
<td>9:30 PM</td>
<td>10:00 PM</td>
<td>Personal Care</td>
</tr>
<tr>
<td>10:00 PM</td>
<td>4:00 AM</td>
<td>Sleeping</td>
</tr>
</tbody>
</table>
Survey design proposal – summary questions

You indicated that Jimmy Doe was awake between 7:00 AM and 8:00 PM.

Please indicate during which times or which activities during that time period Jimmy Doe was in your care by checking the box on the right.

<table>
<thead>
<tr>
<th>Time</th>
<th>Activity</th>
<th>Jimmy Doe in your care?</th>
</tr>
</thead>
<tbody>
<tr>
<td>7:00 AM</td>
<td>Personal Care</td>
<td></td>
</tr>
<tr>
<td>7:30 AM</td>
<td>Eating and Drinking</td>
<td></td>
</tr>
<tr>
<td>8:00 AM</td>
<td>Travel</td>
<td></td>
</tr>
<tr>
<td>8:30 PM</td>
<td>Work</td>
<td></td>
</tr>
<tr>
<td>12:00 PM</td>
<td>Eating and Drinking</td>
<td></td>
</tr>
<tr>
<td>5:00 PM</td>
<td>Travel</td>
<td></td>
</tr>
<tr>
<td>5:30 PM</td>
<td>Eating and Drinking</td>
<td></td>
</tr>
<tr>
<td>6:30 PM</td>
<td>Watching TV</td>
<td></td>
</tr>
</tbody>
</table>
Survey design proposal – probing & activity classification

- Probing
  - Follow-ups can be asked in two locations
    - As the respondent completes the diary
    - On the summary screen

- Changes to activity classification
  - Drop boxes or search fields can be used
  - Analyzed data to identify most prevalent activities
Research question: How much detail to collect in a Web diary?

- Collect activities as open-ended responses?
- Ask respondents to identify their activities from a list?
- Continue to ask “Who?” and “Where?” for activities?
- Continue to ask about secondary childcare?
- Include clarifying probes within the diary?
- To minimize breakoffs, we need to reduce the complexity of the diary
How might ATUS be impacted?

- ATUS products: Negative impact
  - Potential breaks in thousands of data series
  - Potential loss in comparability within a given year and compared to previous years
  - Less data for research
Final thoughts

- Current situation
  - Declining response rates
  - Increasing costs

- Future is online data collection
  - Web-based
  - Mobile apps

- Transition
  - Understand limitations & possibilities
  - Identify priorities
Contact Information

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