Challenges Collecting Real-Time Survey Data Using Smartphones

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University of Wisconsin-Madison

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Overview

• WiscAid Time Use study
  • Study design
  • Development considerations

• Introduction to PACO
  • Administrator & user walkthrough

• Software pros & cons
  • Features
  • Implementation/technical issues

• Alternative software options
Time Use Study

• Sponsor

• Purpose
  • Collect real-time data about time use from undergraduates receiving financial aid

• Method
  • Ecological Momentary Assessment
  • Experience Sampling Method (ESM)
Study protocol

- Pre-survey: n=557
- Time Use: n=402
- Post-survey: n=403
- Post-incentive: n=329
Development Considerations
<table>
<thead>
<tr>
<th>Text (SMS)</th>
<th>Application</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Requires phone plan</td>
<td>• No data plan required</td>
</tr>
<tr>
<td>• Skip patterns difficult</td>
<td>• More question formats</td>
</tr>
<tr>
<td>• Limited question formats</td>
<td>• Higher quality interface</td>
</tr>
<tr>
<td>• Analyzing data</td>
<td>• Greater technical complexity</td>
</tr>
</tbody>
</table>
Software needs

• Low cost

• User-friendly

• Developed

  • iOS and Android compatible
<table>
<thead>
<tr>
<th>ADMINISTERED</th>
<th>JOINED</th>
<th>INVITED</th>
<th>NEW EXPERIMENT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Copy of WiscAid Time Use Study 2016 administered by University of Wisconsin Survey Center</td>
<td>Admin</td>
<td></td>
<td></td>
</tr>
<tr>
<td>EDIT</td>
<td>COPY</td>
<td>DELETE</td>
<td>STATS</td>
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<td>DELETE</td>
<td>STATS</td>
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<td>WiscAid Time Use Study (November)</td>
<td>Admin</td>
<td></td>
<td></td>
</tr>
<tr>
<td>EDIT</td>
<td>COPY</td>
<td>DELETE</td>
<td>STATS</td>
</tr>
</tbody>
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**Groups**

**Duration**
- Ongoing
- Fixed
  - Start date: 2016-04-26
  - End date: 2016-04-29

**Triggers (1)**
- ADD SCHEDULED TRIGGER
- ADD EVENT TRIGGER

**Scheduled Trigger**
- ADD SCHEDULE
- ADD ACTION
  - **EDIT SCHEDULE 1**
    - Random sampling (ESM), 8 times per day
  - **EDIT ACTION 1**
    - Create notification to participate

**Inputs (20)**
- ADD INPUT

**Location**

- **Open Text**
  - Question for the Participant
  - As you were beeped, where were you? (Be specific)

- **Required**

- **Conditional**
  - Input 1 Variable Name
  - location
### Duration
- **Ongoing**  
- **Fixed**  
  - **Start date**: 2016-04-26  
  - **End date**: 2016-04-29

### Triggers (1)
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- **Fixed**

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- **ADD EVENT TRIGGER**

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- **EDIT SCHEDULE 1**: Random sampling (ESM), 8 times per day
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- **Input 1 Variable Name**
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### Inputs (20)

**ADD INPUT**

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<tr>
<th>Open Text</th>
<th>Question for the Participant</th>
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</thead>
<tbody>
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</tr>
<tr>
<td>Conditional</td>
<td>Input 1 Variable Name</td>
</tr>
<tr>
<td></td>
<td>location</td>
</tr>
</tbody>
</table>
productivity

Question for the Participant
Please rate your productivity at this moment.

Input 1 Variable Name
productivity

Likert Steps
5

Left Side Label
Not at all productive
Right Side Label
Extremely productive

Open Text
<table>
<thead>
<tr>
<th>Experiment Status</th>
<th>Creator</th>
<th>Experiment ID</th>
</tr>
</thead>
<tbody>
<tr>
<td>Published</td>
<td><a href="mailto:tapiche@gmail.com">tapiche@gmail.com</a></td>
<td>6213084021522432</td>
</tr>
</tbody>
</table>

**Administrators**

tapiche@gmail.com, marie.e.stark@gmail.com

Enter administrator email addresses, separated by commas. Administrators can edit this experiment and see its results.

**Published Audience**

Published Audience

Published Audience: tapiche@gmail.com, marie.e.stark@gmail.com

Enter emails separated by commas. An empty list is publishing publicly.

**Extra Types of Data Collection**

- [ ] App Usage and Browser History
- [ ] Location Information
- [x] Phone Details (Make, Model, Carrier)
- [ ] Apps installed on the phone
- [ ] Phone details
- [ ] Record phone details in the "Join" event

**Mobile Shareable Link**
pacoapp://experiment/6213084021522432
Let's define some of the basics for your experiment.

**Experiment Listing**

**Title**
Copy of WiscAid Time Use Study 2016
Your experiment title should be simple, specific and memorable.

**Contact Email**
tapiche@gmail.com

**Organization**
University of Wisconsin Survey Center
What organization is sponsoring the experiment? If it's not sponsored by an organization, you can just use your name.

**Description**
Welcome to the WiscAid Time Use Study. Your Experiment is scheduled to begin on Sunday, March 6th.
# Data View

## COPY OF WISCAI TIME USE STUDY 2016

<table>
<thead>
<tr>
<th>who</th>
<th>responseTime</th>
<th>scheduledTime</th>
<th>experimentGroupName</th>
<th>concentrate</th>
<th>location</th>
<th>excited</th>
</tr>
</thead>
<tbody>
<tr>
<td><a href="mailto:marie.e.stark@gmail.com">marie.e.stark@gmail.com</a></td>
<td>2016/04/26 19:48:00-0500</td>
<td>2016/04/26 17:46:00-0500</td>
<td>New Group</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><a href="mailto:marie.e.stark@gmail.com">marie.e.stark@gmail.com</a></td>
<td>2016/04/26 17:57:57-0500</td>
<td>2016/04/26 17:46:00-0500</td>
<td>New Group</td>
<td>2</td>
<td>on the couch</td>
<td>4</td>
</tr>
<tr>
<td><a href="mailto:marie.e.stark@gmail.com">marie.e.stark@gmail.com</a></td>
<td>2016/04/26 14:40:59-0500</td>
<td>2016/04/26 14:38:00-0500</td>
<td>New Group</td>
<td>1</td>
<td>couch</td>
<td>4</td>
</tr>
<tr>
<td><a href="mailto:marie.e.stark@gmail.com">marie.e.stark@gmail.com</a></td>
<td>2016/04/26 11:30:52-0500</td>
<td>2016/04/26 11:24:00-0500</td>
<td>New Group</td>
<td>2</td>
<td>work</td>
<td>4</td>
</tr>
<tr>
<td><a href="mailto:marie.e.stark@gmail.com">marie.e.stark@gmail.com</a></td>
<td>2016/04/26 08:48:00-0500</td>
<td>2016/04/26 11:24:00-0500</td>
<td>New Group</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><a href="mailto:marie.e.stark@gmail.com">marie.e.stark@gmail.com</a></td>
<td>2016/04/26 05:54:00-0500</td>
<td>2016/04/26 11:24:00-0500</td>
<td>New Group</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><a href="mailto:marie.e.stark@gmail.com">marie.e.stark@gmail.com</a></td>
<td>2016/04/26 02:46:00-0500</td>
<td>2016/04/26 11:24:00-0500</td>
<td>New Group</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><a href="mailto:marie.e.stark@gmail.com">marie.e.stark@gmail.com</a></td>
<td>2016/04/25 14:26:42-0500</td>
<td>2016/04/27 14:57:06-0500</td>
<td>New Group</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><a href="mailto:tapiche@gmail.com">tapiche@gmail.com</a></td>
<td>2016/04/27 14:57:06-0500</td>
<td>2016/04/27 14:43:00-0500</td>
<td>New Group</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Paco
The Personal Analytics C0mpanion

Login with your Google email to join experiments

LOGIN

Paco would like to:

- Know who you are on Google
- View your email address

By clicking Allow, you allow this app and Google to use your information in accordance with their respective terms of service and privacy policies. You can change this and other Account Permissions at any time.

Deny
Allow
Informed Consent

You Agree to Share Information with the Experimenter

By joining this experiment, you will be sharing your responses with the creator and administrators of this experiment, and they may use that information for research, product development, or other purposes. Please read the privacy policy or data handling statement they have provided below to decide whether you want to participate in this experiment.

Types of Data Collected

User responses to experiment form

Experimenter's Informed Consent Statement

---

Participation Instructions

You have successfully joined the experiment!

No need to do anything else for now.

Paco will send you a notification when it is time to participate.

Be sure your ringer/buzzer is on so you will hear the notification.

---

I CONSENT

DONE
Paco 2m ago
Copy of WiscAid Time Use Study
2016
Time to participate!
slide to view

SleepBot Alarm
Next alarm: 6:45 AM (16 hours 7 minute..}

Copy of WiscAid Time Use..
Time to participate!
As you were beeped, where were you? (Be specific)

<type response here>

As you were beeped, what were you doing? (Be specific)

<type response here>

As you were beeped, what were you thinking about? (Be specific)

<type response here>

As you were beeped, who were you with? (Select all that apply)

MAKE SELECTIONS

As you were beeped, how much did you ENJOY what you were doing?
not at all
very much
Copy of WiscAid Time Use Study 2016

6 pings, 3 responses
50% response rate

Participate

Stop Experiment

Cancel
PACO Pros & Cons

- Features
  - Open-source
  - Usability
  - Data

- Alternative apps and options
<table>
<thead>
<tr>
<th>Pros</th>
<th>Cons</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Free, Google-based</td>
<td>• Technical support</td>
</tr>
<tr>
<td>• Open-source/ Collaborative</td>
<td>• PACO team</td>
</tr>
<tr>
<td></td>
<td>• Respondents</td>
</tr>
<tr>
<td></td>
<td>• Small development team</td>
</tr>
</tbody>
</table>
Pros

• Project set-up
  • Simple, customizable inputs
  • Timing/alerts

Cons

• Sample management
  • Enrolling respondents
  • Follow-up
Data

- Paradata
- Data export
- Missing data
  - Syncing errors
Alternative apps/services

• Custom App Development

• Qualtrics SMS

• iHabbit

• Mobile Market Research

• iSURVEY/droidSURVEY

• Ondevice Research

How satisfied were you with our service today? (Standard messaging rates apply. Text "STOP" to opt out of this survey.)

1 - Very Dissatisfied
2 - Dissatisfied
3 - Neutral
4 - Satisfied
5 - Very Satisfied
Lessons learned

• Field considerations for PACO
  • Pilot to train respondents & staff
  • Software updates
  • Importing Gmail addresses
  • Troubleshooting with respondents
  • Guides/tutorials
• Managing data for progress monitoring
  • Expect some missing data due to bugs/errors
Thank You!

For copies of this presentation or more information, contact:

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mnitschke@ssc.wisc.edu

Tara Piché
tpiche@ssc.wisc.edu

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www.uwsc.wisc.edu