

Challenges Collecting Real-Time Survey Data Using Smartphones

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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



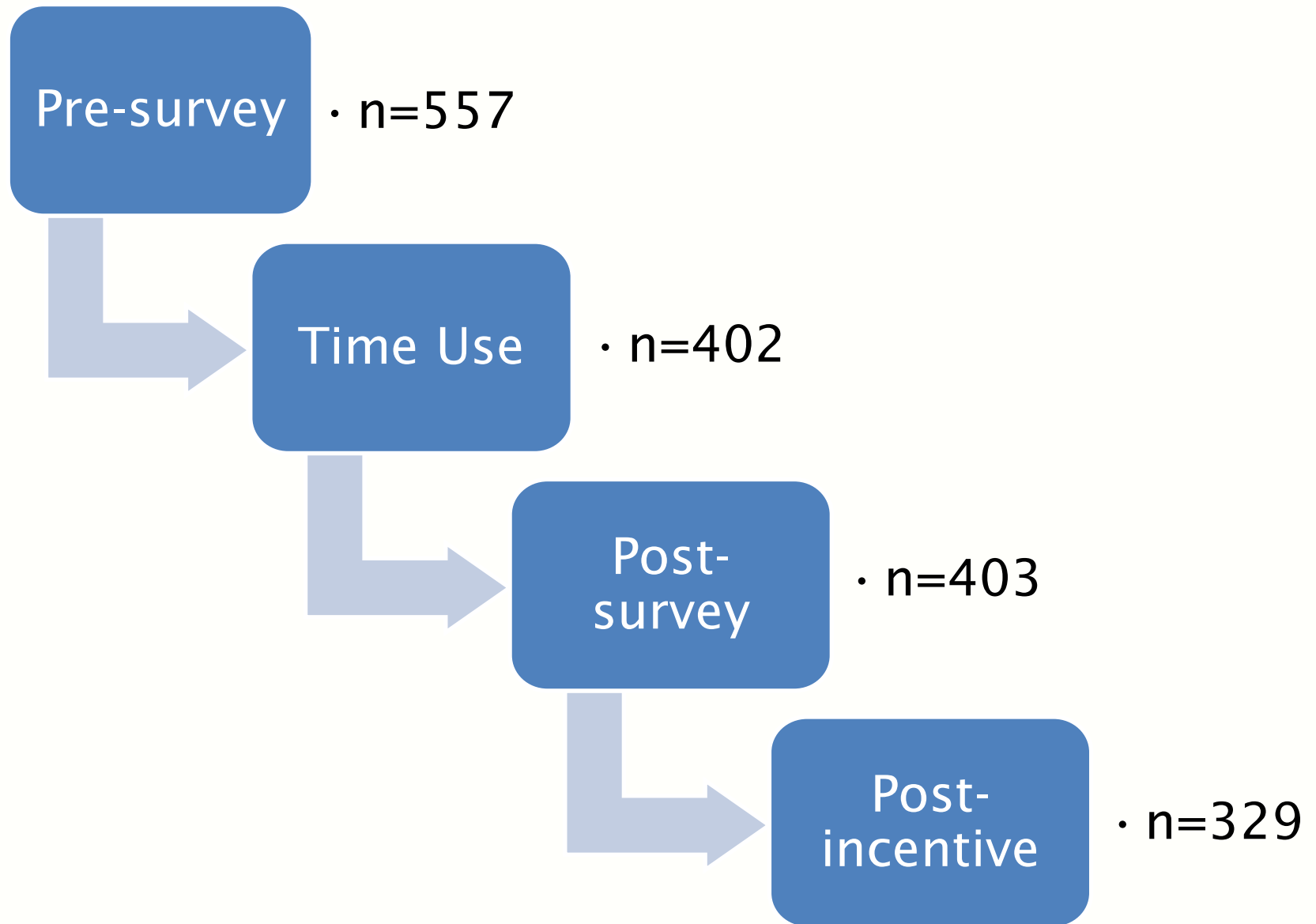
- Purpose

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

- Method

- Ecological Momentary Assessment
- Experience Sampling Method (ESM)

Study protocol



Development Considerations



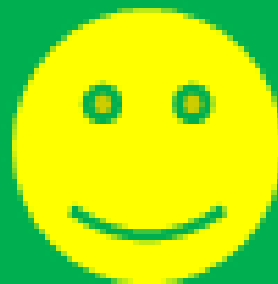
Text (SMS)

Application

- Requires phone plan
- Skip patterns difficult
- Limited question formats
- Analyzing data

- No data plan required
- More question formats
- Higher quality interface
- Greater technical complexity

NEED



WANT

Software needs

- Low cost
- User-friendly
- Developed
 - iOS and Android compatible



PACO

The Personal Analytics Companion

ADMINISTERED

JOINED

INVITED

NEW EXPERIMENT

Copy of WiscAid Time Use Study 2016 administered by University of Wisconsin Survey Center

Admin

EDIT

COPY

DELETE

STATS

VIEW DATA

ANON DATA

WiscAid Time Use Study 2016 administered by University of Wisconsin Survey Center

Admin

EDIT

COPY

DELETE

STATS

VIEW DATA

ANON DATA

WiscAid Time Use Study (November)

Admin

EDIT

COPY

DELETE

STATS

VIEW DATA

ANON DATA

BASICS

GROUPS

ADMIN

SOURCE

PREVIEW

SAVE EXPERIMENT

DISCARD CHANGES

Duration

☐ Ongoing ☒ FixedStart date
2016-04-26End 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

☐ Required

As you were beeped, where were you? (Be specific)

☐ Conditional

Input 1 Variable Name

location

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As you were beeped, where were you? (Be specific)

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Input 1 Variable Name

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Random sampling (ESM) ▼

Minimum between

120



minutes

Frequency

8



day ▼

Start Time

00:00:00.000

End Time

23:59:00.000

☐ User editable

☐ Editable on Join

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Open Text

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☐ Required

As you were beeped, where were you? (Be specific)

☐ Conditional

Input 1 Variable Name

location

Inputs (1)

ADD INPUT



productivity



likert



☒ Required

☐ Conditional

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



Response Type

Scale

5 Point Smiley Scale

Number

Open Text

List

Photo

Location

Audio

BASICS

GROUPS

ADMIN

SOURCE

PREVIEW

SAVE EXPERIMENT

Experiment Status



Published

Creator

tapiche@gmail.com

Experiment ID

6213084021522432

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

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
- ☒ 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

Data ▾ All Groups ▾						
EXPERIMENTS > COPY OF WISCAID TIME USE STUDY 2016 > >						
who ↑	responseTime	scheduledTime	experimentGroupName	concentrate	location	excited
marie.e.stark@gmail.com		2016/04/26 19:48:00-0500	New Group			
marie.e.stark@gmail.com	2016/04/26 17:57:57-0500	2016/04/26 17:46:00-0500	New Group	2	on the couch	4
marie.e.stark@gmail.com	2016/04/26 14:40:59-0500	2016/04/26 14:38:00-0500	New Group	1	couch	4
marie.e.stark@gmail.com	2016/04/26 11:30:52-0500	2016/04/26 11:24:00-0500	New Group	2	work	4
marie.e.stark@gmail.com		2016/04/26 08:48:00-0500	New Group			
marie.e.stark@gmail.com		2016/04/26 05:54:00-0500	New Group			
marie.e.stark@gmail.com		2016/04/26 02:46:00-0500	New Group			
marie.e.stark@gmail.com	2016/04/25 14:26:42-0500					
tapiche@gmail.com	2016/04/27 14:57:06-0500	2016/04/27 14:43:00-0500				

[REPORT OPTIONS](#)

Stat View

Switch between
Stats & Data pages

Filter by
Experiment Group

Overall stats

89

invited

82

joined

79

participated on
01/22/16

4%

non-responders on
01/22/16

Date selector



1/22/2016

Total

who

Responses / Signals

Misses

Self-Report

Responses / Signals

Misses ↓

Self-Reports

Last Report

██████@google.com

0 / 5

5

0

4 / 84

80

2

2m

██████@google.com

0 / 6

6

0

3 / 37

34

8

2m

██████@google.com

0 / 5

5

0

7 / 30

23

0

2m

██████@google.com

0 / 4

4

0

2 / 22

20

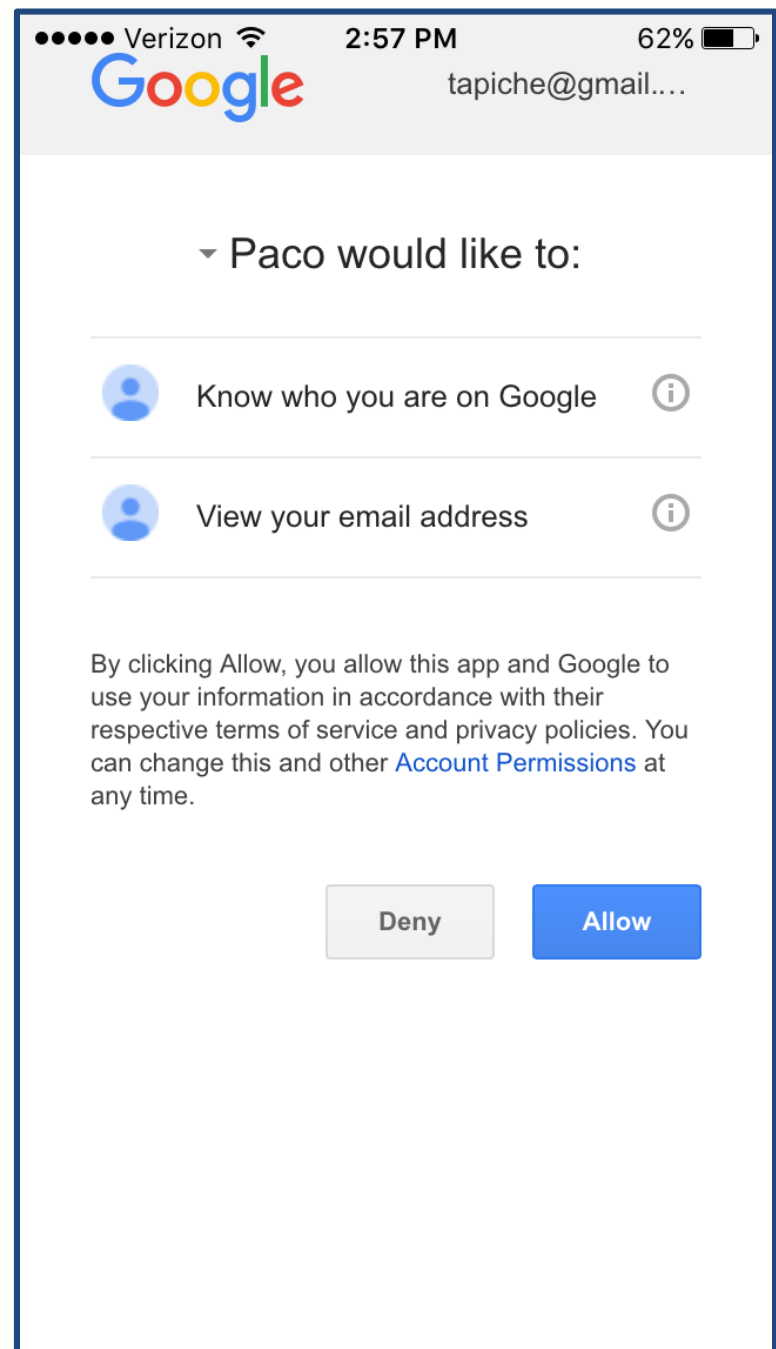
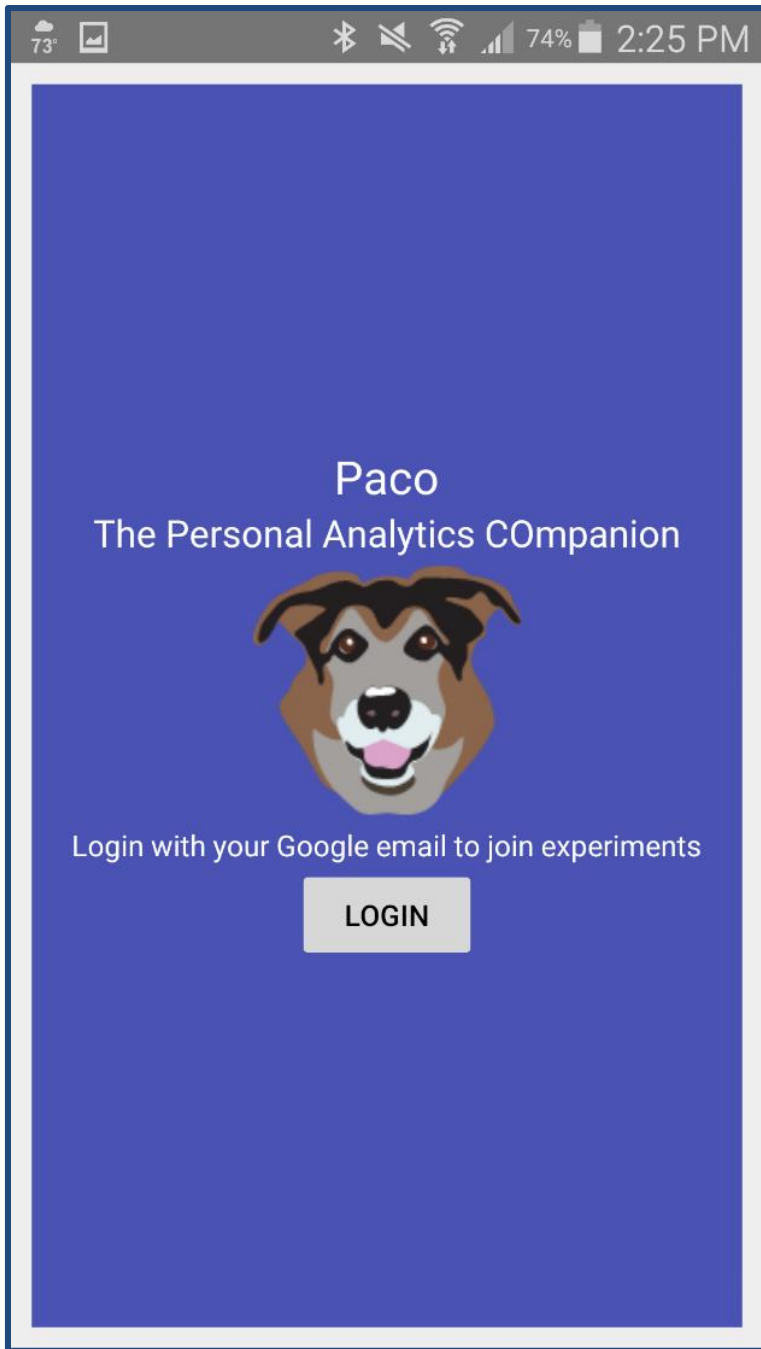
0

2m

Participants who
have joined

Response rates per
participant for a given day

Total response rates
per participant



73°

73%2:26 PM

Informed Consent

You Agree to Share Information with the Experimenters

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

I CONSENT

73°

73%2:26 PM

Participation Instructions

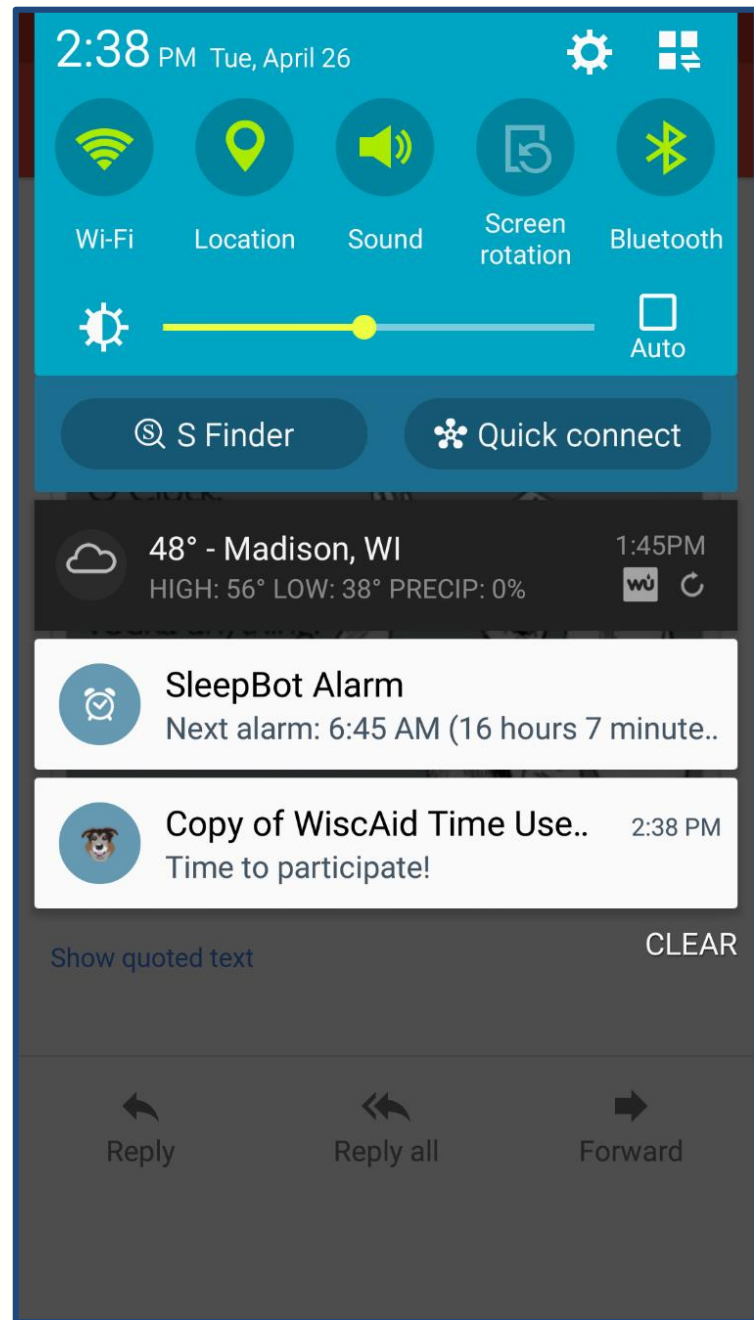
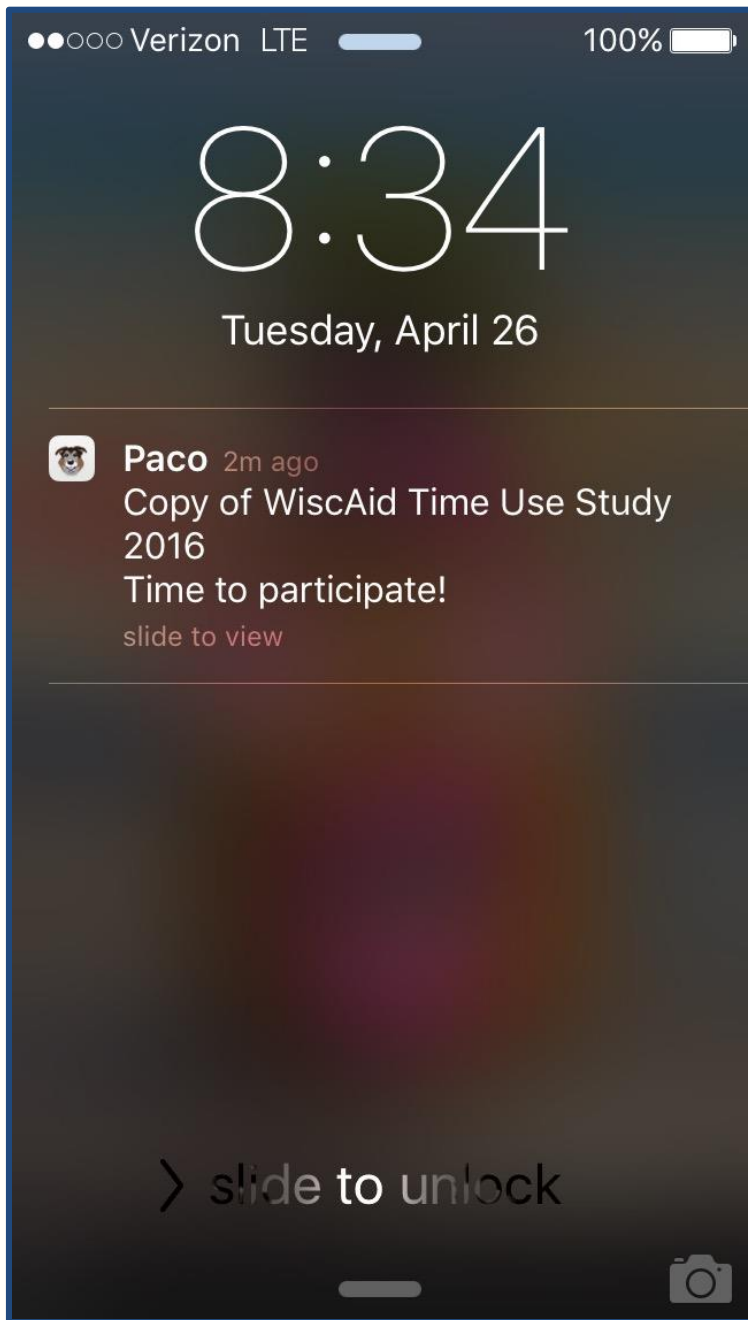
You have successfully joined the experiment!

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.

DONE



●●○○ Verizon LTE 8:34 AM 100%

[Cancel](#) **Participate!** [Submit](#)

As you were beeped, where were you? (Be specific)

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

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

41° 78% 11:28 AM

Copy of WiscAid Time Use...

As you were beeped, where were you? (Be specific)

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

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

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

Main

Running Experiments Refresh



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



Pros

- Free, Google-based
- Open-source/
Collaborative

Cons

- Technical support
 - PACO team
 - Respondents
- Small development team

The screenshot shows the GitHub repository page for 'google/paco'. At the top, the repository name 'google / paco' is displayed. To the right are buttons for 'Watch' (41), 'Star' (215), and 'Fork' (62). Below this is a navigation bar with links for 'Code', 'Issues' (229), 'Pull requests' (5), 'Wiki', 'Pulse', and 'Graphs'. A description of the repository is provided: 'This is the Paco behavioral science mobile research platform <http://www.pacoapp.com/>'. Below the description, statistics are shown: '2,851 commits', '115 branches', '6 releases', and '11 contributors'. A progress bar is visible. The 'Branch: develop' dropdown is shown, along with a 'New pull request' button. At the bottom, there are buttons for 'New file', 'Find file', 'HTTPS' (with a dropdown arrow), the repository URL 'https://github.com/google/paco', and buttons for 'Download ZIP' and 'Download SRI'. A commit message 'BobEvans Merge branch 'master' into develop' is shown, along with the text 'Latest commit 3150e55 19 hours ago'.



Pros

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

Cons

- Sample management
 - Enrolling respondents
- Follow-up

User Manual

[Introduction](#)

[What is Paco?](#)

[How Paco Works](#)

[A Note about iOS](#)

[Creating a Paco Experiment](#)

[Overview](#)

[Defining Your Experiment](#)

[Triggers and Actions](#)

[Schedule and Random Triggers](#)

[Event Triggers](#)

[Actions](#)

[Inputs and Experiment Groups](#)

[Inputs](#)

[Experiment Groups](#)

[Using Advanced Data Collection Features](#)

[Controlling Access to Your Experiment](#)

[Informed Consent](#)

[Study Management](#)

[Recruiting Participants](#)

[Onboarding Participants](#)

[Monitoring Participation](#)

[Download Results for All Participants](#)

[Analyzing Results](#)

[Troubleshooting](#)

[No Pings](#)

[Missing Data](#)

[FAQs](#)

[About Experiential Sampling Methodology \(ESM\)](#)

[Do participants need a Google email?](#)

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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tpiche@ssc.wisc.edu

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