



Understanding Society

THE UK HOUSEHOLD LONGITUDINAL STUDY

The Effects of Personalized Feedback on Participation and Reporting in Mobile App Data Collection

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ESRA Conference 2019

An initiative by the Economic and Social Research Council, with scientific leadership by the Institute for Social and Economic Research, University of Essex, and survey delivery by NatCen Social Research and Kantar Public

Challenges of mobile app data collection



Low participation rates in general population

- ▶ UKHLS Spending Study 1: 13% used app at least once
- ▶ IAB-SMART App Study: 16% installed app

Reasons for non-participation

- ▶ No access to compatible smartphone
- ▶ Not confident or able to use smartphone for such tasks
- ▶ Not willing or interested to participate in app studies

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Study aims




How effective is **personalized feedback** in increasing participation in app data collection on consumer expenditure?

Provide summary of reported expenditure, similar to budgeting app

- ▶ Motivate sample members to open the app
- ▶ Motivate participants to continue participating and to accurately report their expenditure
- ▶ Well-known risk of providing feedback: panel conditioning

Research questions




1. Does feedback increase participation?
2. Which types of participants used the feedback – and how?
3. Does feedback improve ongoing adherence to the study?
4. What effect does feedback have on reported expenditure?

Providing feedback to participants



- ▶ Induce behaviour change
 - ▶ Medical intervention studies
- ▶ Ethical reasons
 - ▶ Medical checks: information on health outcomes
- ▶ Increase survey participation, study engagement, motivation
 - ▶ Effect of aggregated feedback on participation (Scherpenzeel & Toepoel 2014; Göritz & Luthe 2012)
 - ▶ Effect of personalized feedback on participation (Marcus et al. 2007), data quality and satisfaction (Kühne & Kroh 2018)

Study design



Lightspeed Online Access Panel

- ▶ Sample of panelists aged 16+ in Great Britain ($N = 1,964$)
- ▶ Asked to download app on own smartphone (iOS or Android)
- ▶ Use diary app for one month to report all purchases
- ▶ If app declined:
 - ▶ Asked to use browser-based online diary
 - ▶ Replicated the app design
- ▶ Monetary incentive: max. total £5 ($\approx 5.50\text{€}$)
- ▶ Data collection: July-October 2018

(Parallel app study on UKHLS Innovation Panel)

Experimental design



Random allocation to treatment groups

- ▶ Group #1: Feedback announced in study invitation
- ▶ Group #2: Feedback not announced but provided
- ▶ Group #3: No feedback

Experimental design



Group #1: Study invitation

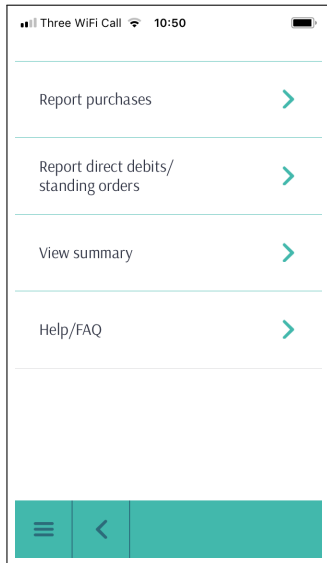
We are interested in how people are getting on these days. To help us with this, we would like you to take part in an additional task. We would like to collect more information about the patterns of spending in British households across a month.

This information will be valuable to researchers who are looking at how people manage their spending, and how this differs across households. It will also be used to see how British households are managing in the current economic climate, and how changes in society and the economy affect people's behaviour.


The information you report might also be useful to you: you will be able to see how much you spend on different types of things.

Experimental design

Groups #1 and #2: Cumulative summary of reported expenditure



Research questions



1. **Does feedback increase participation?**
2. Which types of participants used the feedback – and how?
3. Does feedback improve ongoing adherence to the study?
4. What effect does feedback have on reported expenditure?


Results: Participation

- ▶ Announcing personalized feedback in the study invitation did not increase initial participation

| | Feedback announced | Feedback not announced | No feedback |
|------------------------------|--------------------|------------------------|-------------|
| % Entered 1+ purchase in app | 14.3 | 15.2 | 13.1 |

N = 1,964 panelists completed baseline survey

Research questions



1. Does feedback increase participation?
2. **Which types of participants used the feedback – and how?**
3. Does feedback improve ongoing adherence to the study?
4. What effect does feedback have on reported expenditure?

Results: Feedback use


- ▶ Most participants with access to feedback clicked on summary screen at least once

| | Feedback announced | Feedback not announced | Sig. |
|----------------------|--------------------|------------------------|------|
| % Looked at screen | 86.2 | 73.2 | * |
| # Looked at screen | 5.9 | 6.8 | n.s. |
| Mins spent on screen | 2.0 | 2.2 | n.s. |

N = 195 panelists used app at least once and were given feedback

- ▶ No difference between those who used vs. didn't use feedback in terms of age, gender, education, employment status, income and mobile device usage

Research questions



1. Does feedback increase participation?
2. Which types of participants used the feedback – and how?
3. **Does feedback improve ongoing adherence to the study?**
4. What effect does feedback have on reported expenditure?


Results: Ongoing adherence

- ▶ Providing personalized feedback did not improve ongoing adherence to the study

| | Feedback announced | Feedback not announced | No feedback |
|----------------------|-----------------------|---------------------------|-------------|
| # Days used app | 18.0 | 18.5 | 18.5 |
| # Purchases reported | 29.8 | 28.9 | 28.7 |

N = 279 panelists used app at least once

Research questions



1. Does feedback increase participation?
2. Which types of participants used the feedback – and how?
3. Does feedback improve ongoing adherence to the study?
4. **What effect does feedback have on reported expenditure?**

Results: Reported expenditure

- ▶ No difference in reported expenditure by treatment group
- ▶ Types of expenditures tested

Total expenditure

Category expenditure

| | |
|-------------------------|-------------------------|
| Food and groceries | Socialising and hobbies |
| Eating and drinking out | Books, magazines |
| Transport and car | Games and toys |
| Child costs | Haircuts, massages |
| Household goods | Holidays |
| Health expenses | |

- ▶ Restricted to panelists who
 - ▶ Used app at least once
 - ▶ Used app at least once and stayed in study for 2+ weeks

Discussion




Goal of motivating sample members to open the app and to continue participating – without affecting measurement

- ▶ Most participants viewed feedback at least once
- ▶ Did not increase initial participation or adherence
- ▶ Did not affect reported expenditure

Other ways of providing feedback


- ▶ More prominent announcement
- ▶ Nicer presentation, e.g. diagrams, notifications, reminders
- ▶ Expenditure categories that can be customized



Thank you.

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Appendix: Sample composition



| | % |
|------------------------------------|------|
| Female | 73.6 |
| Age (mean) | 46.1 |
| Has degree | 40.0 |
| In work | 64.5 |
| Gross HH income (annual) | |
| — Less than £21,000 | 25.3 |
| — £21,000-£39,999 | 37.5 |
| — £40,000 or more | 37.2 |
| Has smartphone | 81.3 |
| Uses smartphone every day | 64.2 |
| Uses smartphone for online banking | 47.1 |
| Uses budgeting app on smartphone | 3.6 |
| <hr/> | |
| $N = 1,964$ | |