



Understanding Society
THE UK HOUSEHOLD LONGITUDINAL STUDY

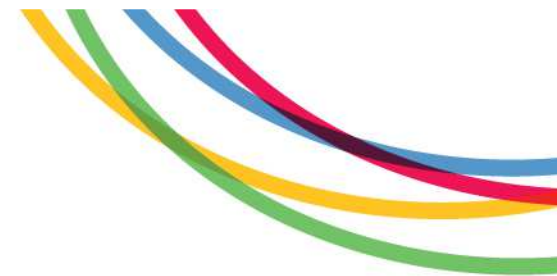
Data collection using mobile technologies: Changes over time in the barriers to participation

Annette Jäckle (University of Essex)
Alexander Wenz (University of Essex)
Mick P. Couper (University of Michigan)

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 Kantar Public and NatCen Social Research



Acknowledgements



- Project: “Understanding household finance through better measurement”

- Funders:

KANTAR W^{ORLD}PANEL

NiCRM
National Centre for
Research Methods

E · S · R · C
ECONOMIC
& SOCIAL
RESEARCH
COUNCIL

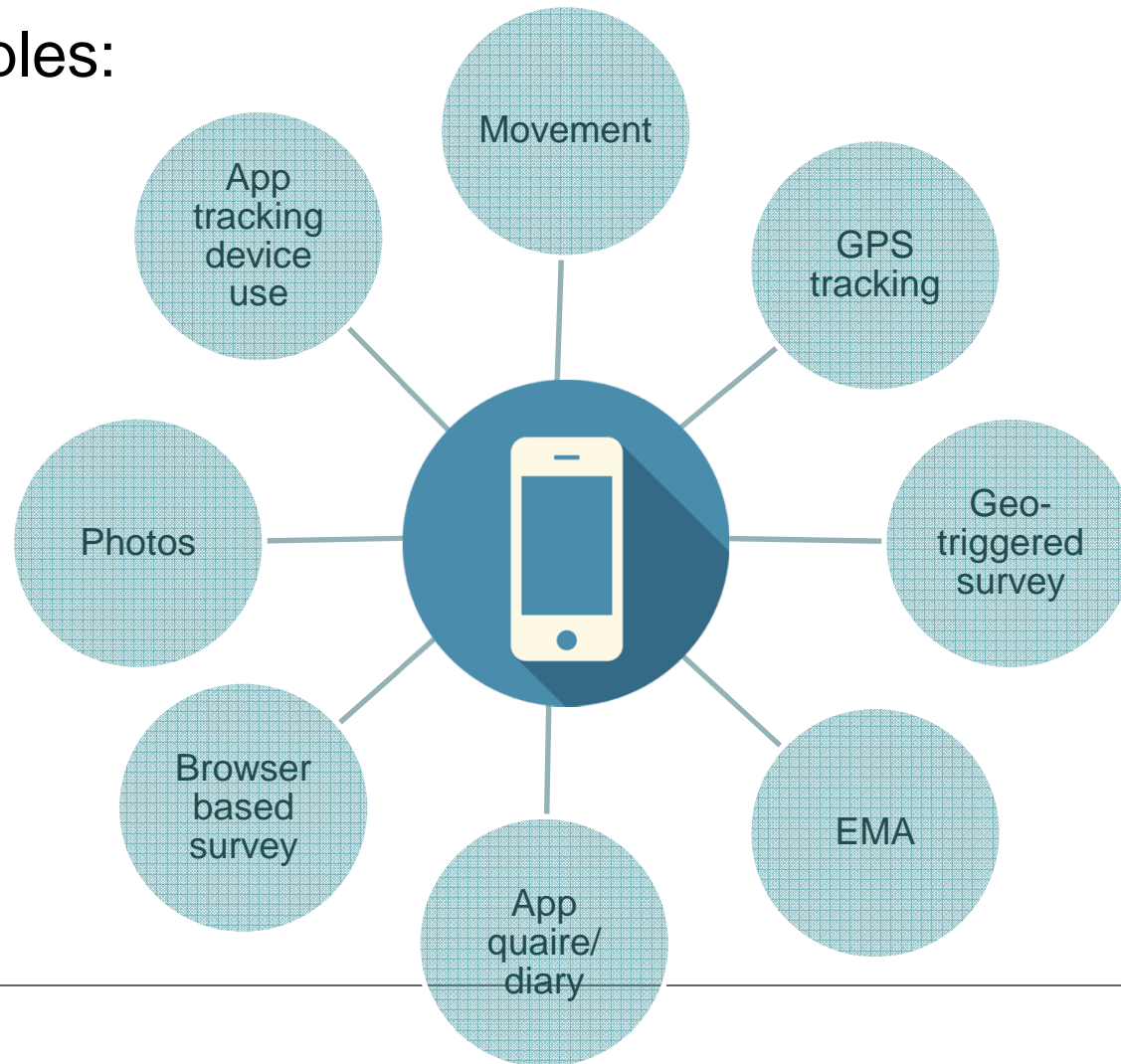
- Team members:

Annette Jäckle (PI, Essex)
Thomas Crossley (Essex)
Jonathan Burton (Essex)
Paul Fisher (Essex)
Mike Brewer (Essex)
Alexander Wenz (Essex)

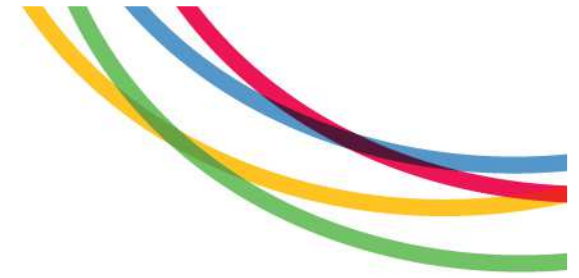
Brendan Read (Essex)
Mick Couper (Michigan)
Joachim Winter (Munich)
Carli Lessof (Southampton)
Alexandra Gaia (Bicocca-Milan)
Cormac O’Dea (Yale)

Smartphones (SP) increasingly used for data collection

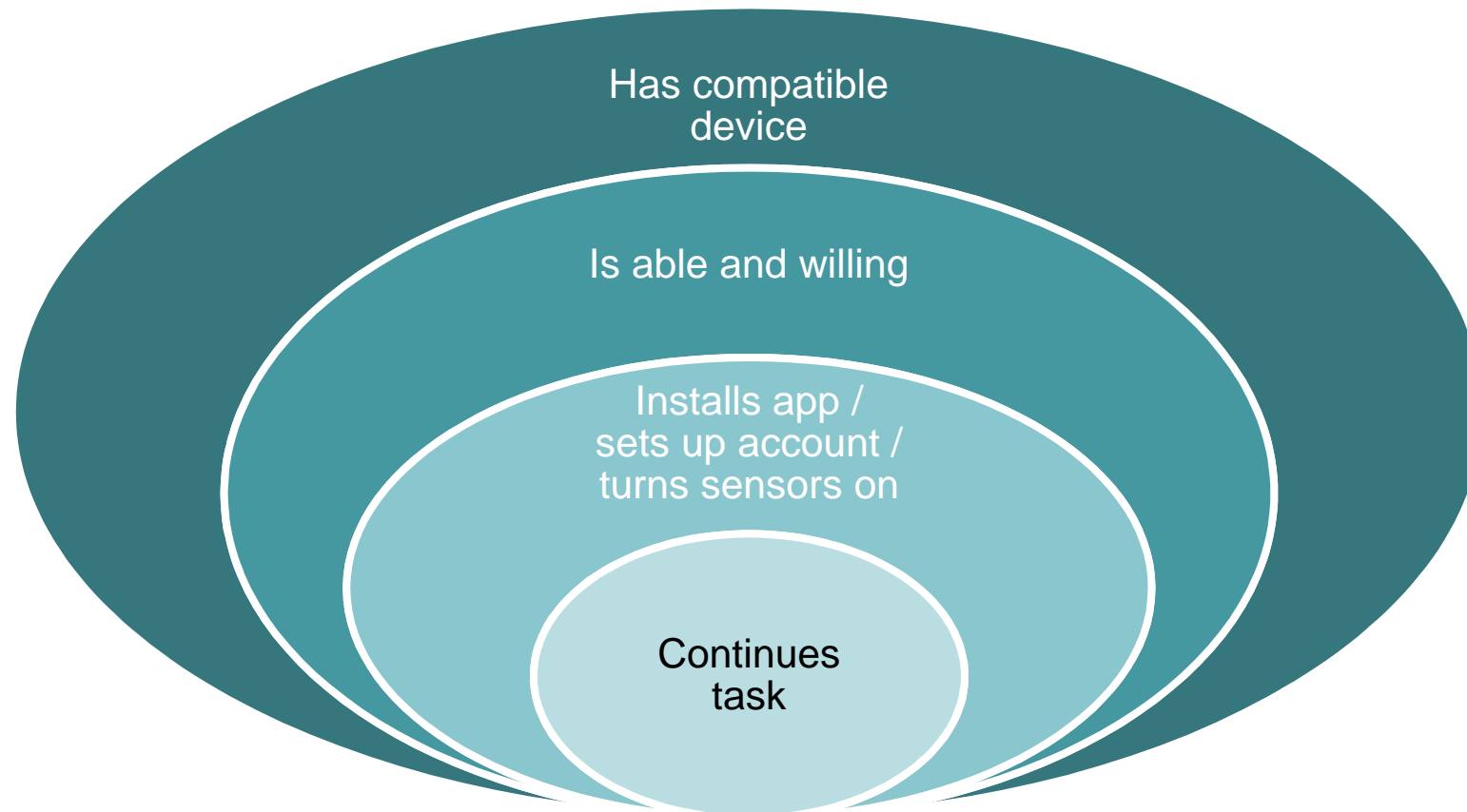
Examples:



Participation in SP studies still low



Many stages at which drop-out occurs:

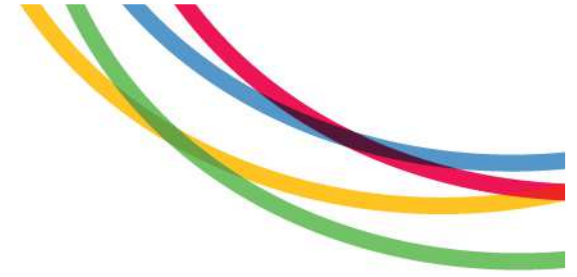




Why do / don't people
participate in SP studies

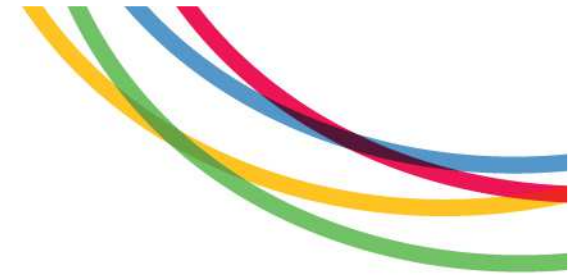


Predictors of actual participation in SP tasks

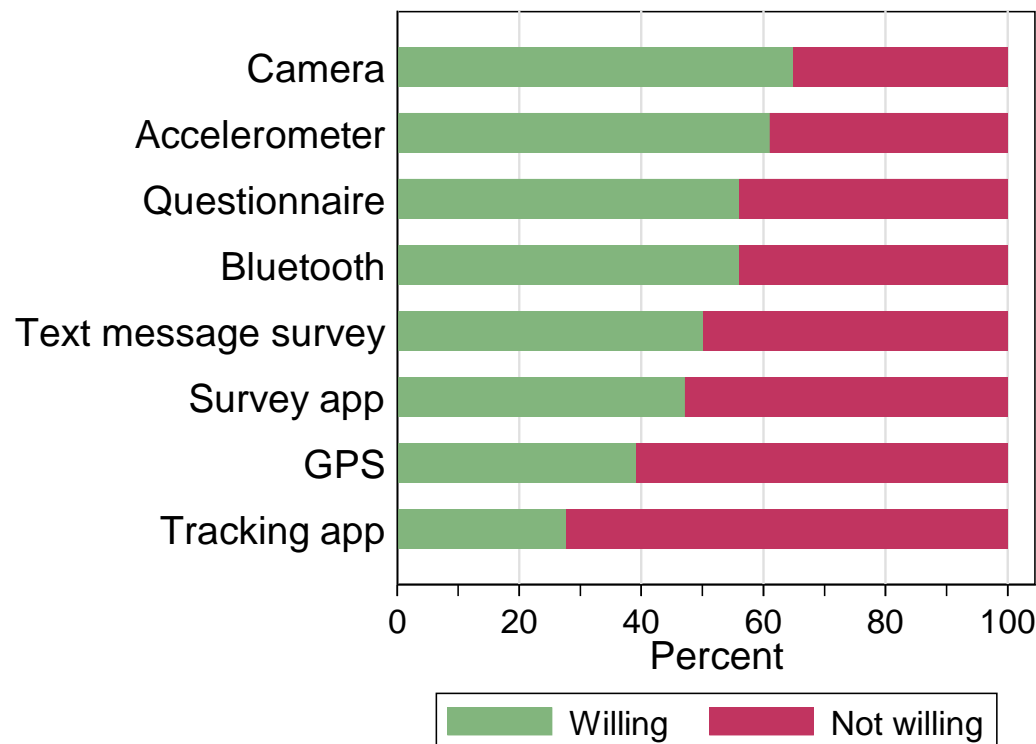


- App to scan shopping receipts and enter purchases
 - Understanding Society* Innovation Panel
 - Probability sample of households in Great Britain
 - 2016
- Predictors of participation:
 - Has a device
 - Frequency of device use
 - **Hypothetical willingness** to download an app for a survey
 - Cooperativeness with the survey (consent, item non-response)

Hypothetical willingness to participate



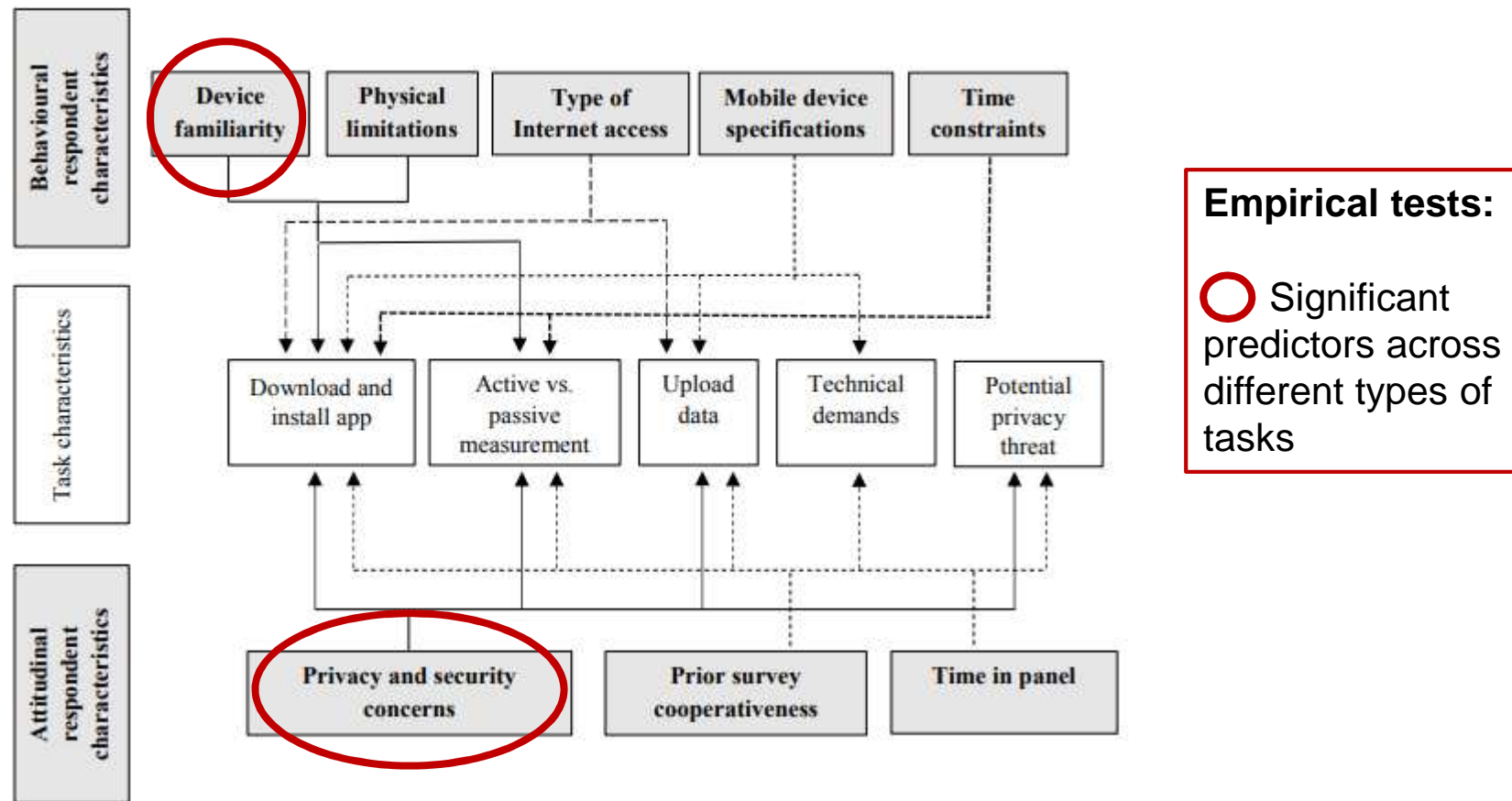
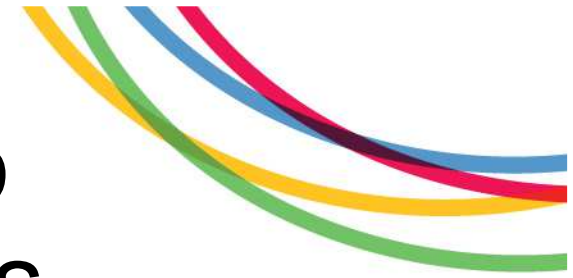
Varies between different types of tasks:



Source: Wenz, Jäckle & Couper (in press) *Survey Research Methods*

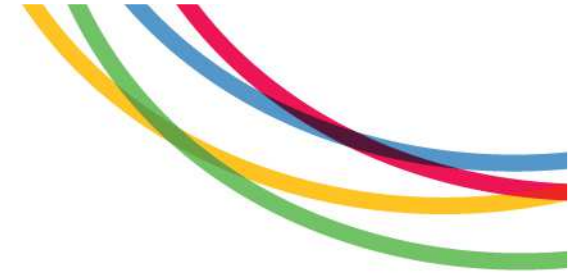
See also Revilla, Couper, & Ochoa (2018); Revilla, Toninelli, Ochoa, & Loewe (2016)

Predictors of willingness to participate in different tasks



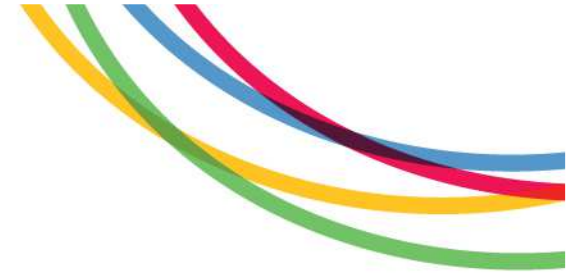
Source: Figure 1 in Wenz, Jäckle & Couper (in press) *Survey Research Methods*

In sum....



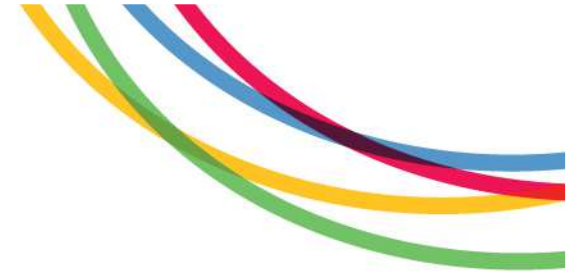
- Key known predictors of participation:
 - Has device
 - Frequency of device use
 - Intensity of device use (# activities)
 - Hypothetical willingness to do SP tasks for survey
 - Security concerns about providing info via SP features
-

Population trends



- **Increasing...**
 - Smartphone ownership
 - Intensity of smartphone use
 - Technical capability of devices
 - **But also public events that might increase data security concerns, e.g.**
 - Cambridge Analytica
 - GDPR legislation
-

The big questions

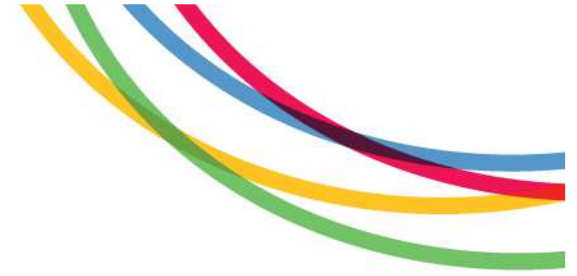


- What is the future scope of smartphone based data collection?
- Is participation likely to increase?
- Is selectiveness of who participates likely to decrease?

Here: use panel data to examine...

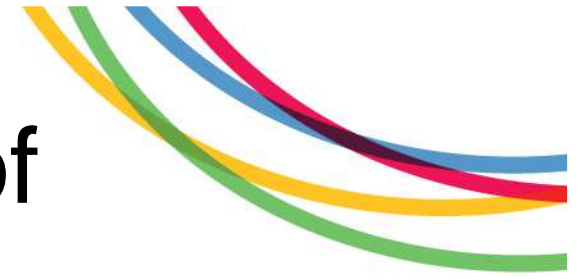
- **RQ1:** How are predictors of participation changing?
 - **RQ2:** How are selection biases changing?
-

Data

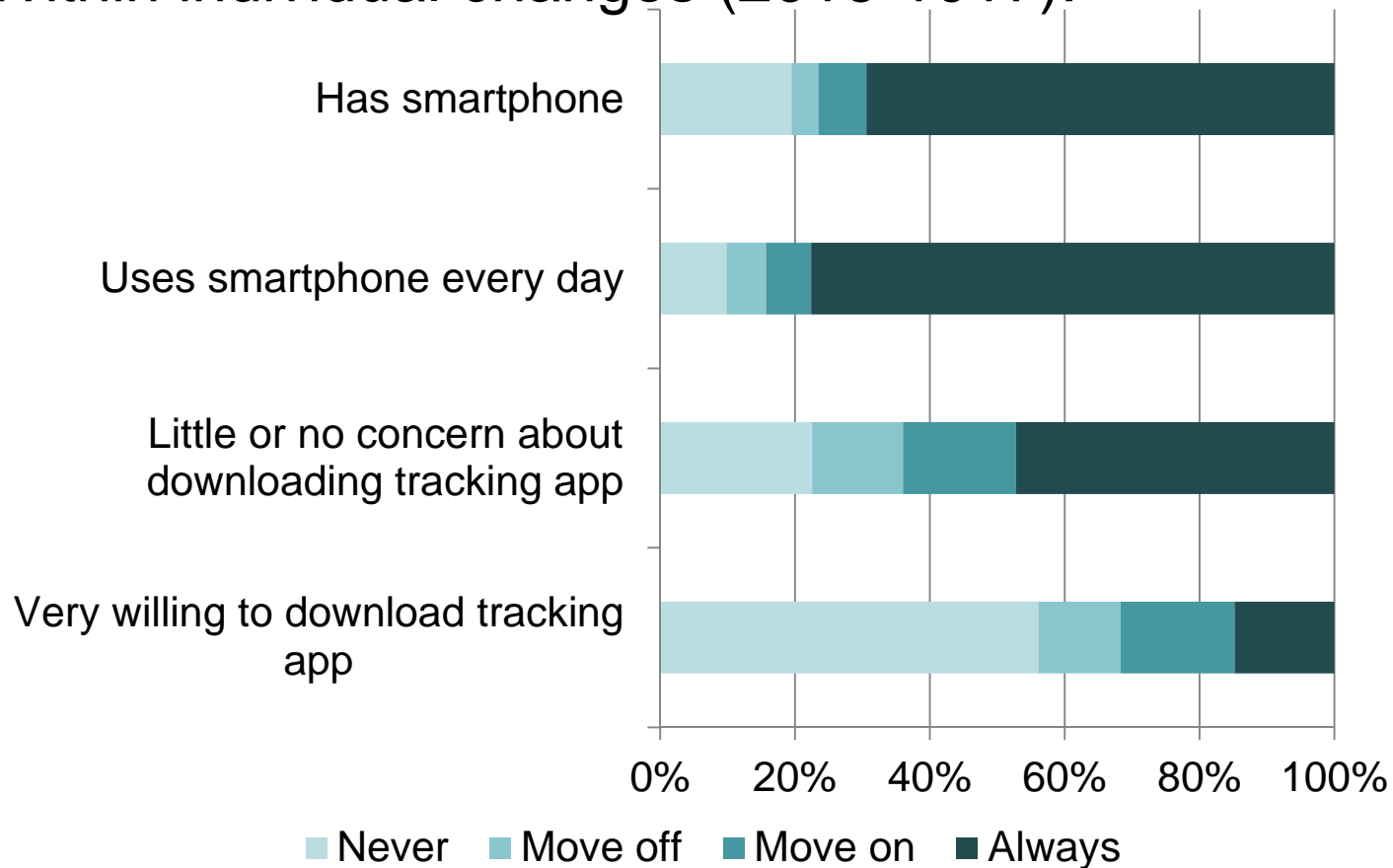


- ***Understanding Society* Innovation Panel**
Probability sample of households in Great Britain
All household members aged 16+ interviewed annually
Since 2008
 - **Repeated questions about mobile device use**
2016: n=1,884
2017: n=2,212
(2018 still in field)
 - **Analysis sample**
Balanced panel: n=1,762
-

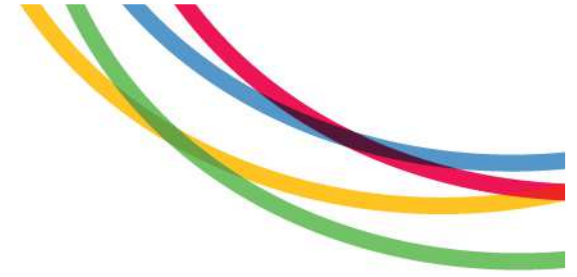
RQ1: How are predictors of participation changing?



Within individual changes (2016-1017):



RQ2: How are selection biases changing?



- Stages of selection

1. Coverage (has a smartphone)

No longitudinal measures of participation – instead:

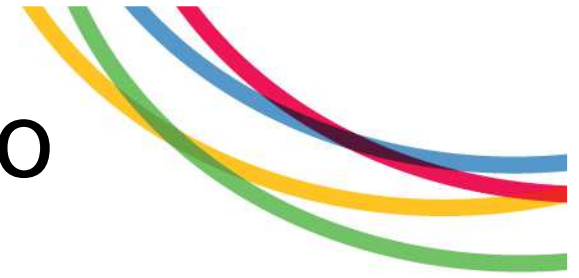
2. Willingness (conditional on having smartphone)

3. Total bias (willingness in full sample)

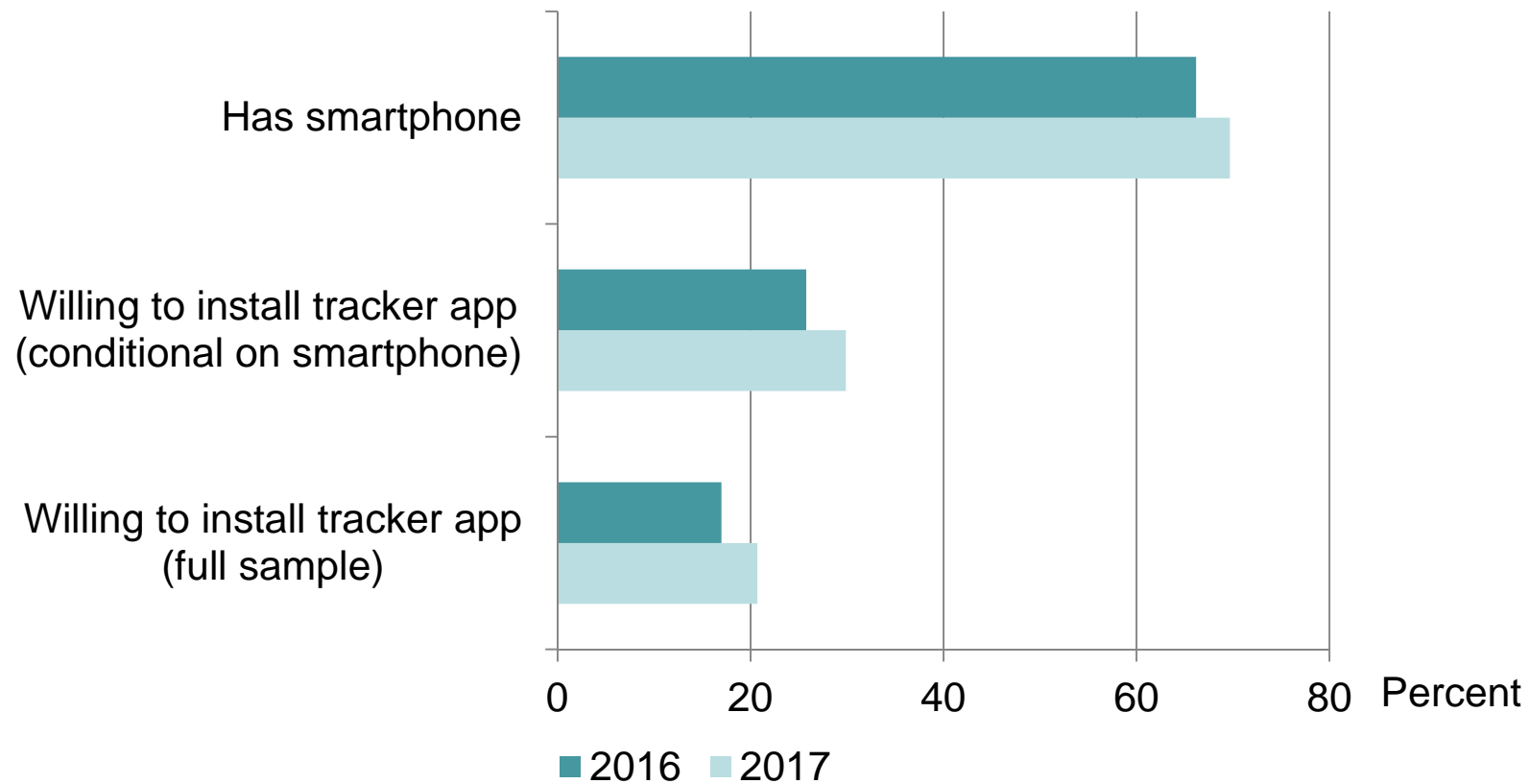
- Example:

Willingness to install app that tracks smartphone usage

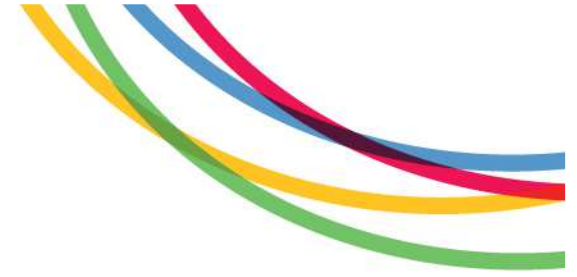
Coverage and willingness to install tracker app



Aggregate rates:

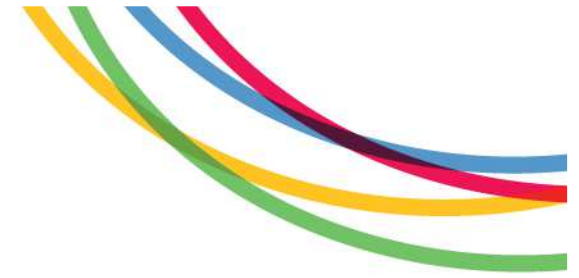


Coverage, willingness and total bias

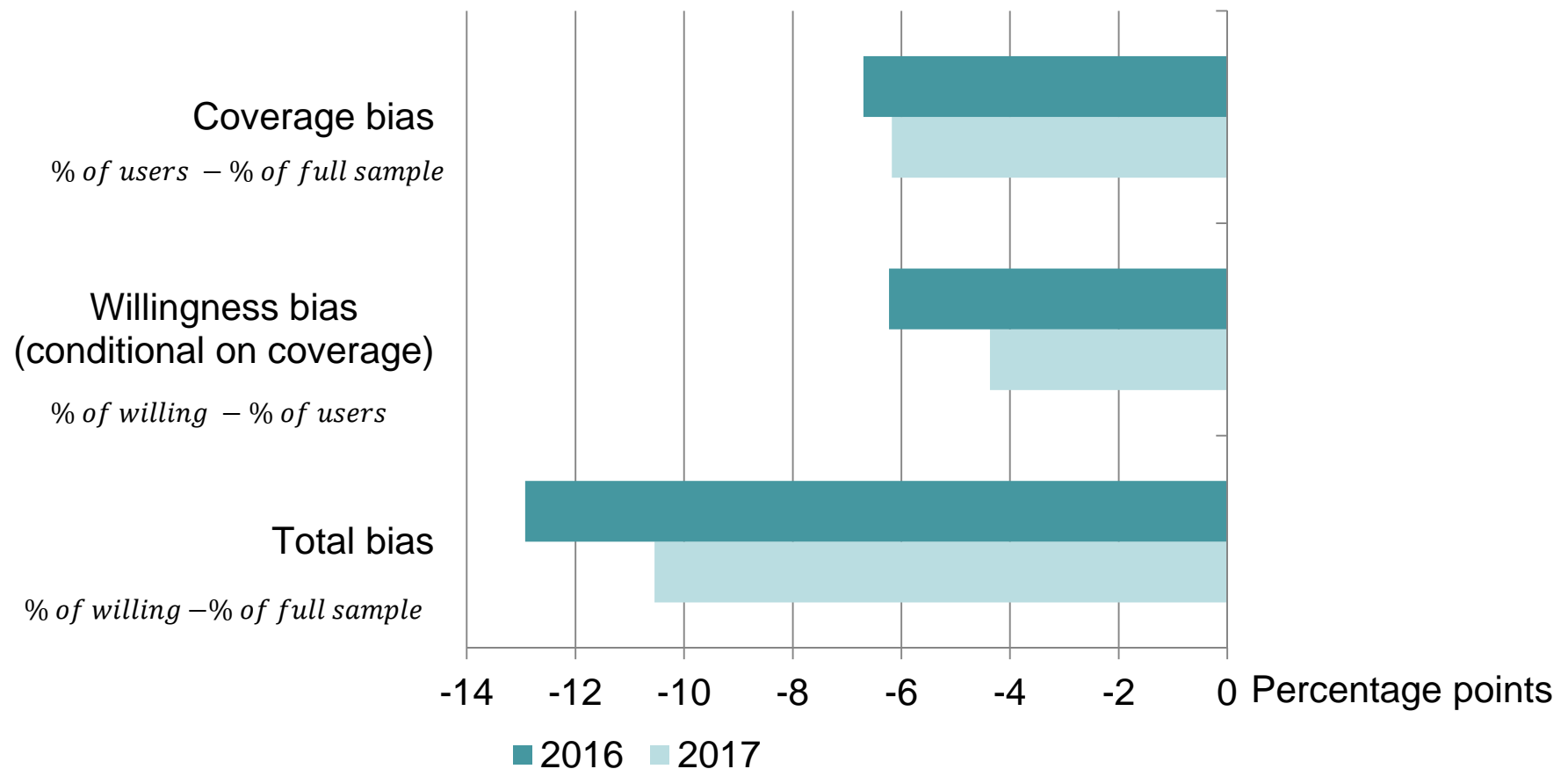


- Respondent characteristics tested for bias
 - Gender
 - Age
 - Education
 - Personal monthly income
 - Subjective assessment of financial situation
 - Whether in work (employed/self-employed)
 - Travel to work time (if in work)
 - Long-term disability or health problem
-

Bias example

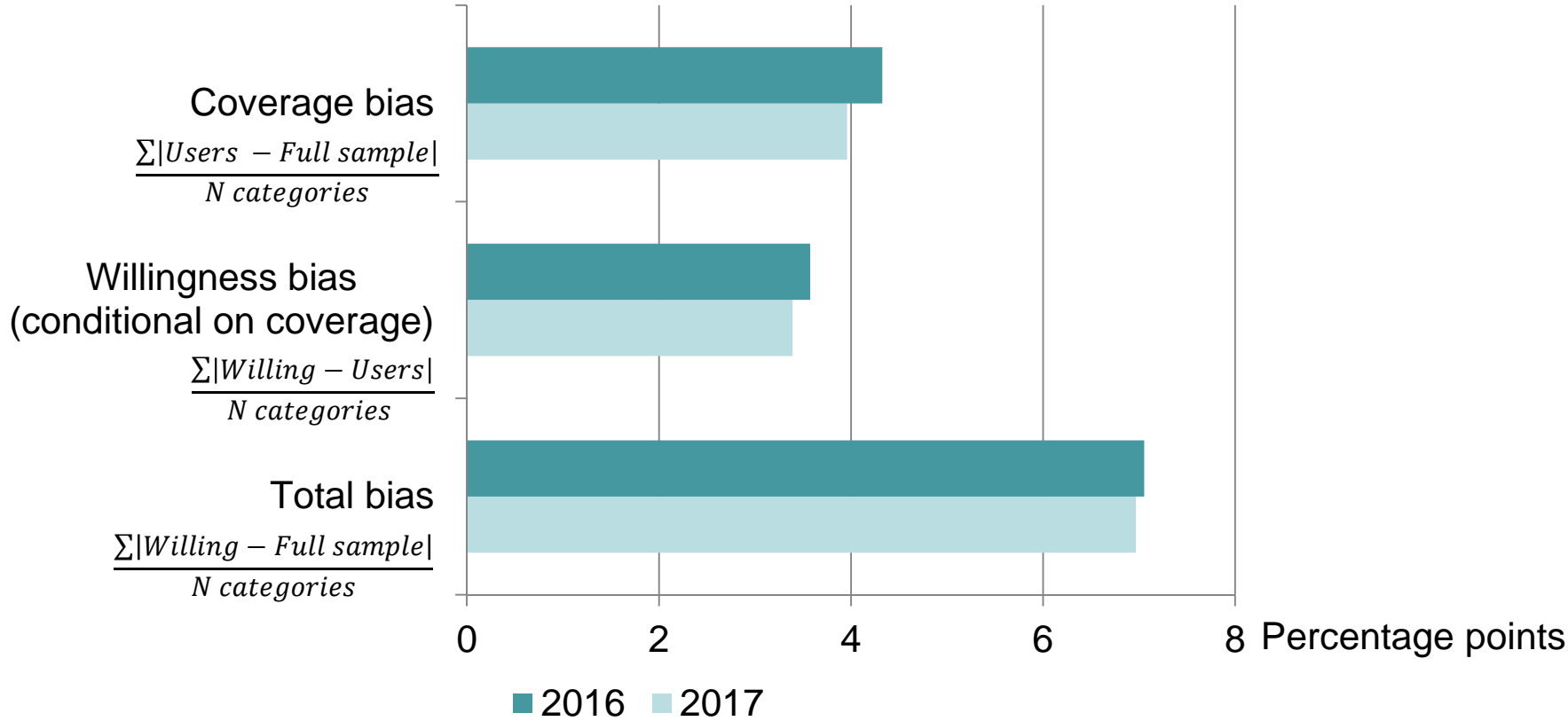


Respondents with long-term health problem or disability under-represented at all stages:

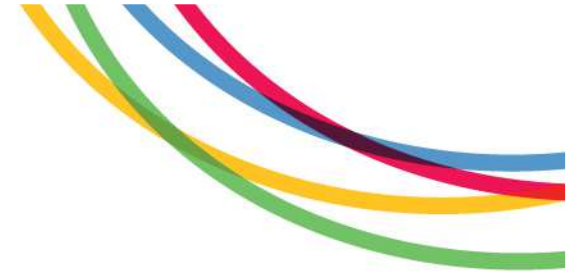


Average absolute bias

Across 8 variables (26 categories)

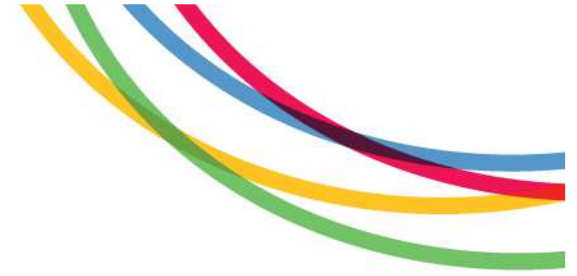


Conclusions



- **Barriers to participation in SP studies**
 - Decreasing somewhat
 - But also lot of within-individual change
 - **Biases related to coverage and willingness to participate**
 - Small decreases, remain persistent
 - Often reinforce each other
 - **2018 data**
 - Trends over longer time period?
-

More information



- Project webpage:

<https://www.iser.essex.ac.uk/research/projects/understanding-household-finance-through-better-measurement>