

"The integration of traditional surveys with new data produced from smart surveys"

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Agenda

- 1. Smart surveys what are they?
- 2. Smart and non-smart surveys
- 3. Two methods of integration
- 4. Ways forward

What is a smart survey?

Three ingredients:

- 1. A survey
- 2. A 'smart' element
 - Sensors to collect other data: pictures, audio, locations, movements, etc.
- 3. Integrate the survey and smart element
 - After data collection: e.g. Fitbits with questionnaires on activities
 - During data collection: smartphone apps
 - Sensors help to make task easier
 - Sensor data are often processed on phone
 - Respondents can interact with sensor data

Smart Survey Implementation (2023-2025)

- Funded by Eurostat
 - Follows on Trusted Smart Statistics (2020-2022) project
- Microservices for handling sensors within apps (IT)
- Methodology
 - 1. Recruitment
 - 2. Machine Learning
 - 3. User Interaction
 - 4. Mode effects
- Legal/ethical, data lifecycle, governance

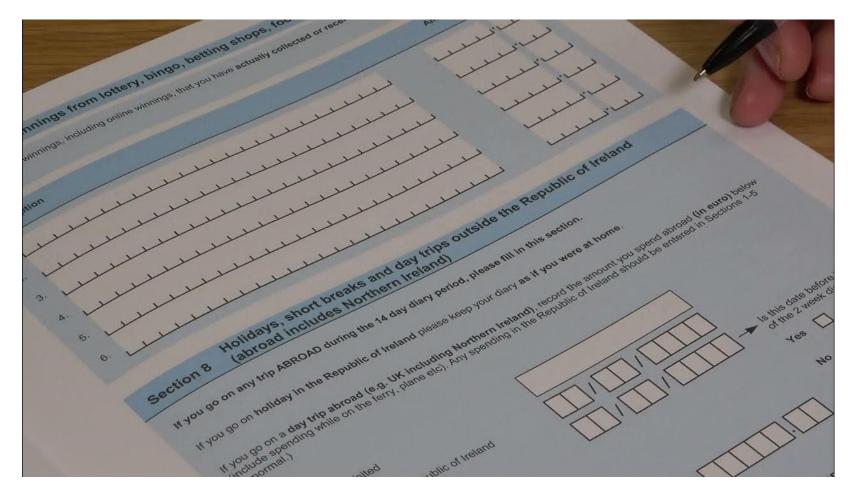


An illustration: Household budget Survey

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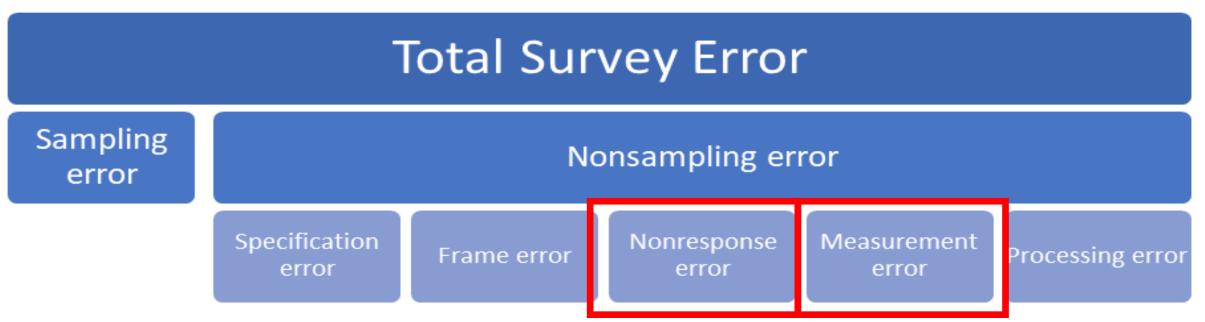
Youtube video: Hbits (2023) https://www.youtube.com/watch? v=BvmD5Zqv27s

In contrast: non-smart



Source: Irish Household Budget study 2022. https://www.youtube.com/watch?v=xRObt45RjAo

Integration and mode effects - why worry?



- Smart surveys aim to improve measurement and do by a lot
- Studies so far (Lugtig et al, 2021; Keusch et al 2019;2020) show that smart surveys suffer from nonresponse issues
 - Problems with older people, lower educated

Prepare for a future mixed-mode smart surveys

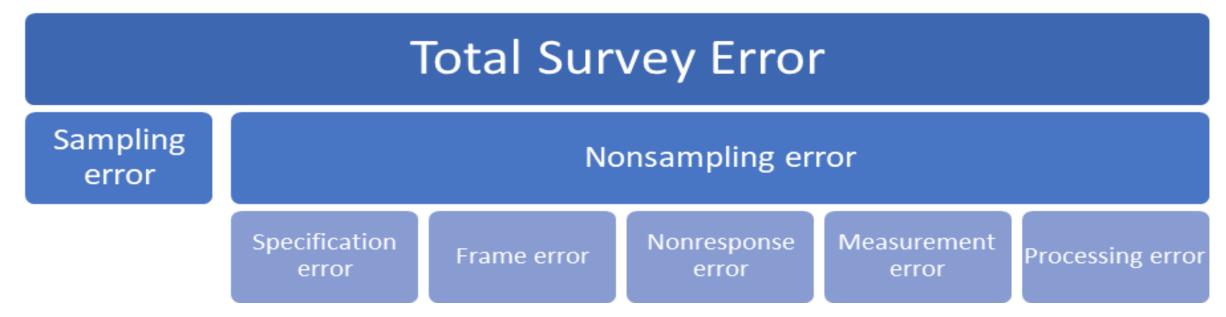
- Smart surveys for some -> via mobile app
- Traditional survey for others -> web survey and/or paper
- Smart survey project conducts pilots:
 - Belgium: mix apps, web and paper for Time Use Survey
 - Germany: mix different levels of smartness in survey in Household Budget
 - France: within-respondent studies (both paper and app) in Household Budget
 - Italy: web/app survey and fully smart survey

Two approaches

- 1. Mixed-mode approach
 - Combine multiple instruments into one database
 - Input harmonization
 - Integration before data analysis
- 2. Data integration approach
 - Different instruments, different estimates
 - Output harmonization
 - Integration after data-analysis

Two approaches and TSE

- 1. Mixed-mode approach
- 2. Data integration approach



Ways forward

- Experiments conducted in SSI project in 2024
 - Paper vs. web vs. app-administration
 - Different levels of smart surveys
 - Automatic classification
 - User involvement
 - Across countries
- Work out the two approaches for different datasets
 - 1. Mixed-mode
 - 2. Data integration
- Estimates for size of the shift due to switch to smart surveys
 - Can help inform future design
 - Bridge gaps in time-series



• Questions: p.lugtig@uu.nl