

Preferred citation style

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Smartphones: Silver Bullet for Mobility Data Collection?

KW Axhausen

IVT
ETH
Zürich

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 *Institut für Verkehrsplanung und Transportsysteme*
Institute for Transport Planning and Systems

ETH

Eidgenössische Technische Hochschule Zürich
Swiss Federal Institute of Technology Zurich

Survey challenges

What do we want to know?

Who travels

when ?

where ?

with whom ?

how ?

for how long (space and time) ?

for what purpose ?

and spends how much ?

Protocols and response

Surveys, observations are „talk“

Two speakers

managing their „image“

staying within the rules of talking

staying within their socially allocated/identified role

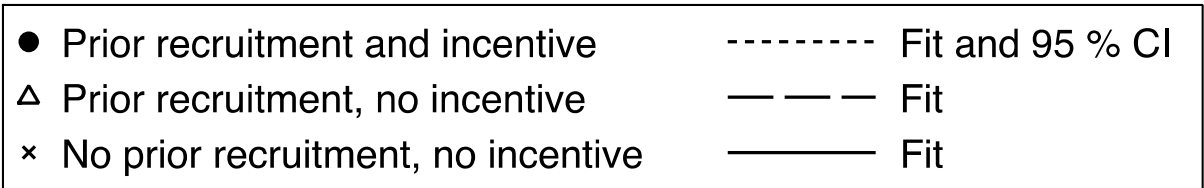
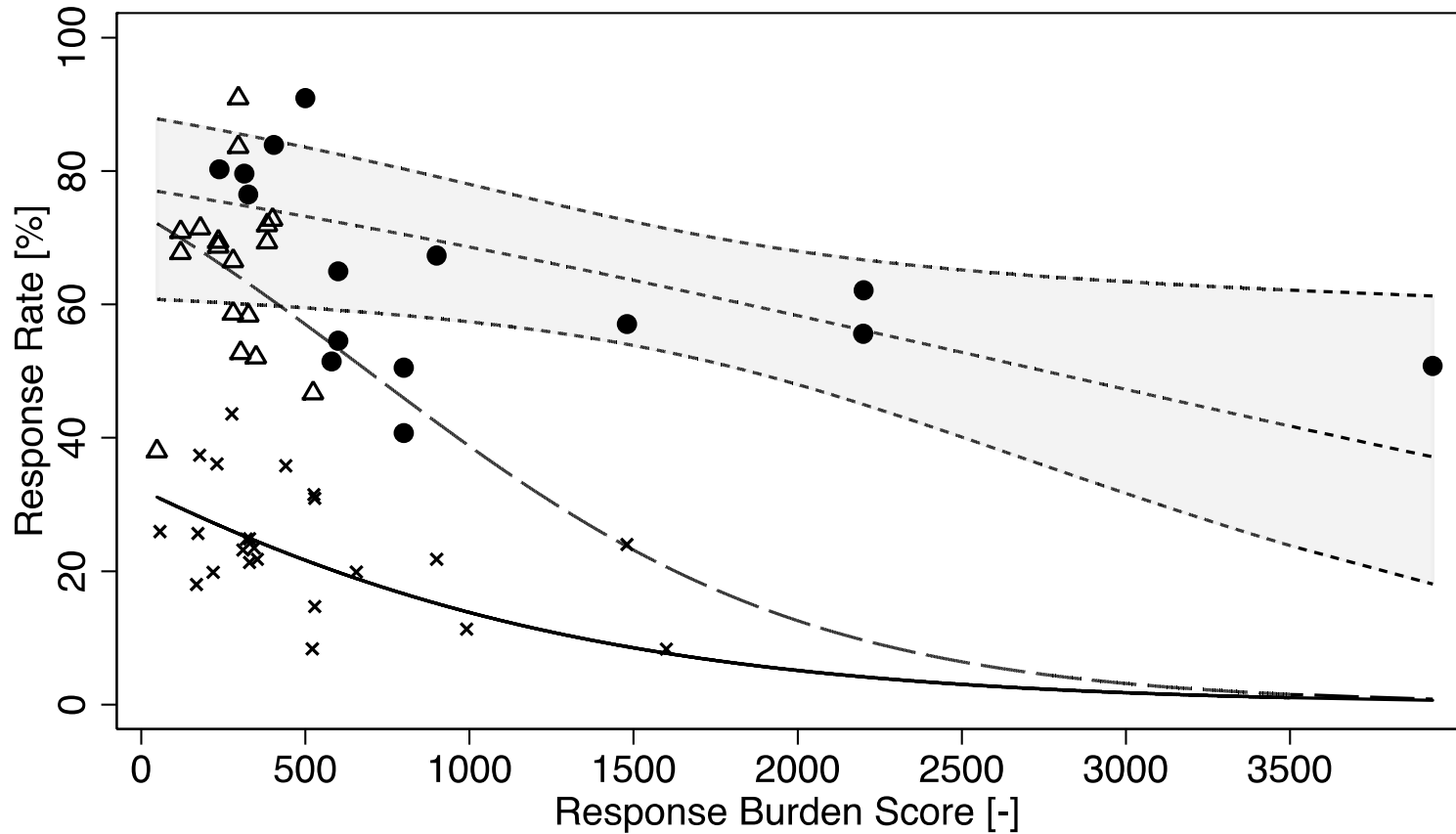
fulfilling social expectations

talk and report with/to each other

=>

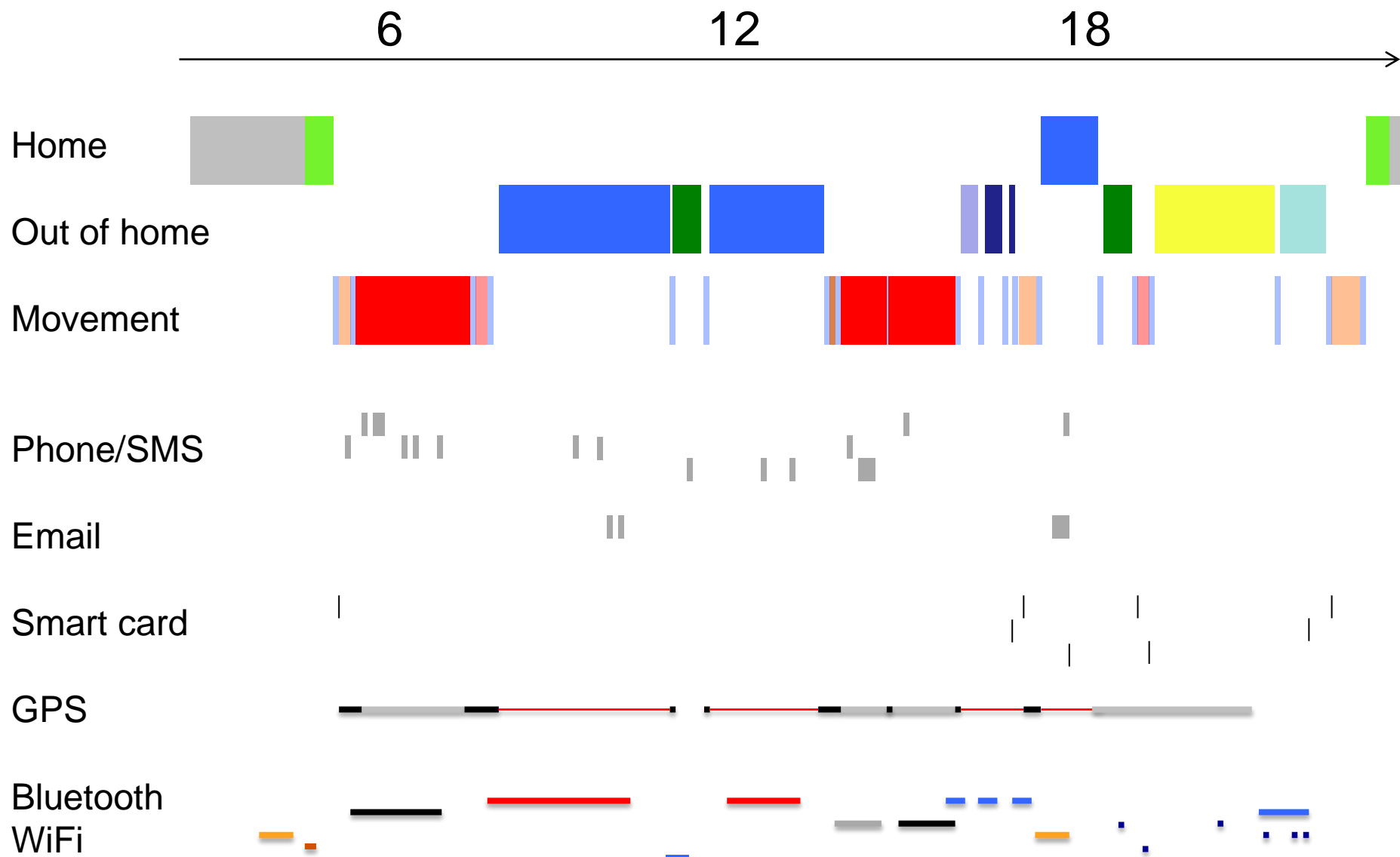
„Maintaining the willingness of the respondent to report“

Response as a function of response burden @IVT, 2015

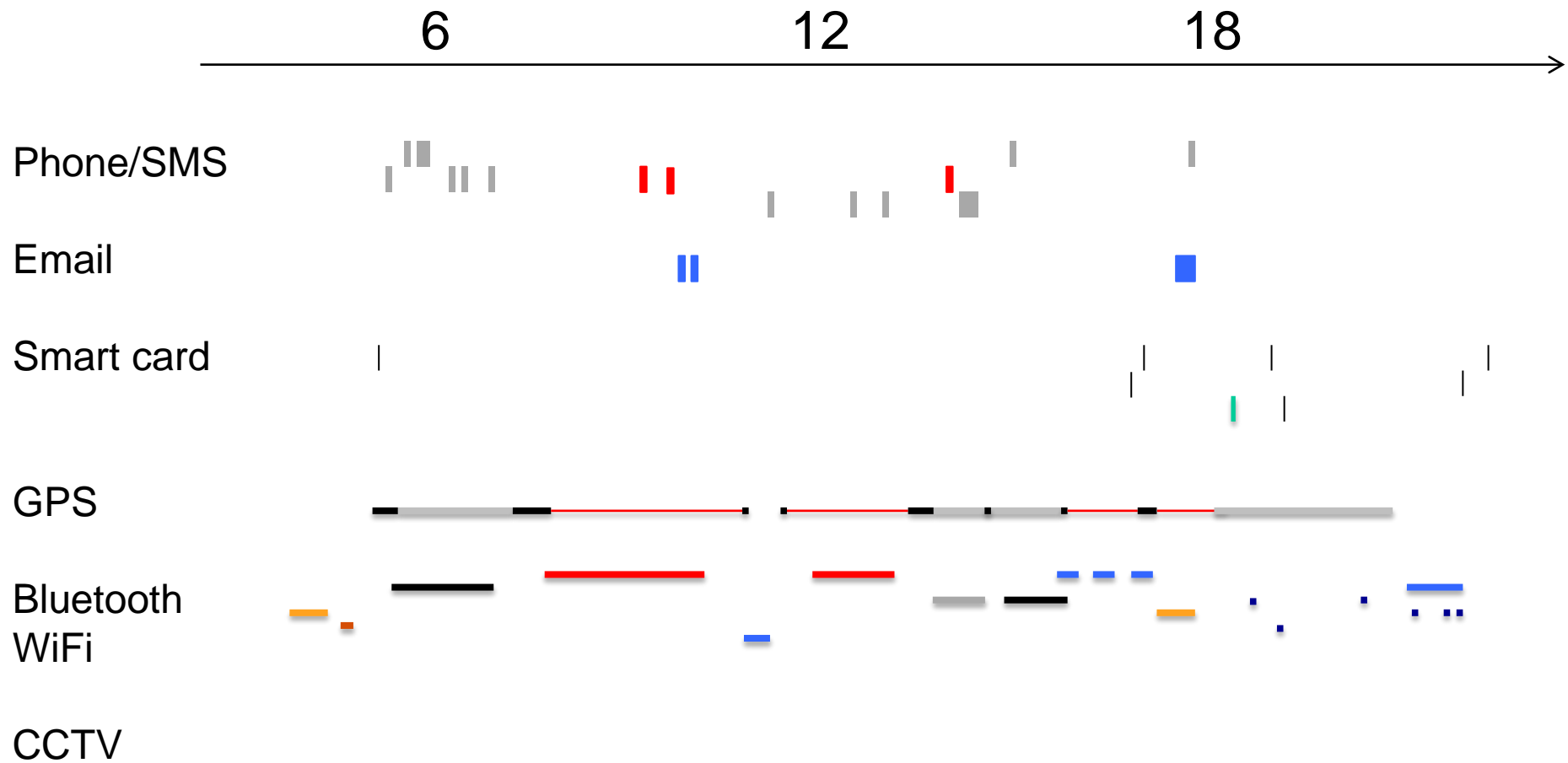


Known „error“ generating processes

Activities, movement and traces: A full example record



Active/passive tracing: Many owners, locations, quality levels



What is left ?

True

5 at home



9 Out of home



26 Stages,
11 trips,
1 subtour,
2 tours



After all processes

3 at home



2 Out of home



4 trips,
2 tours



What do we know ?

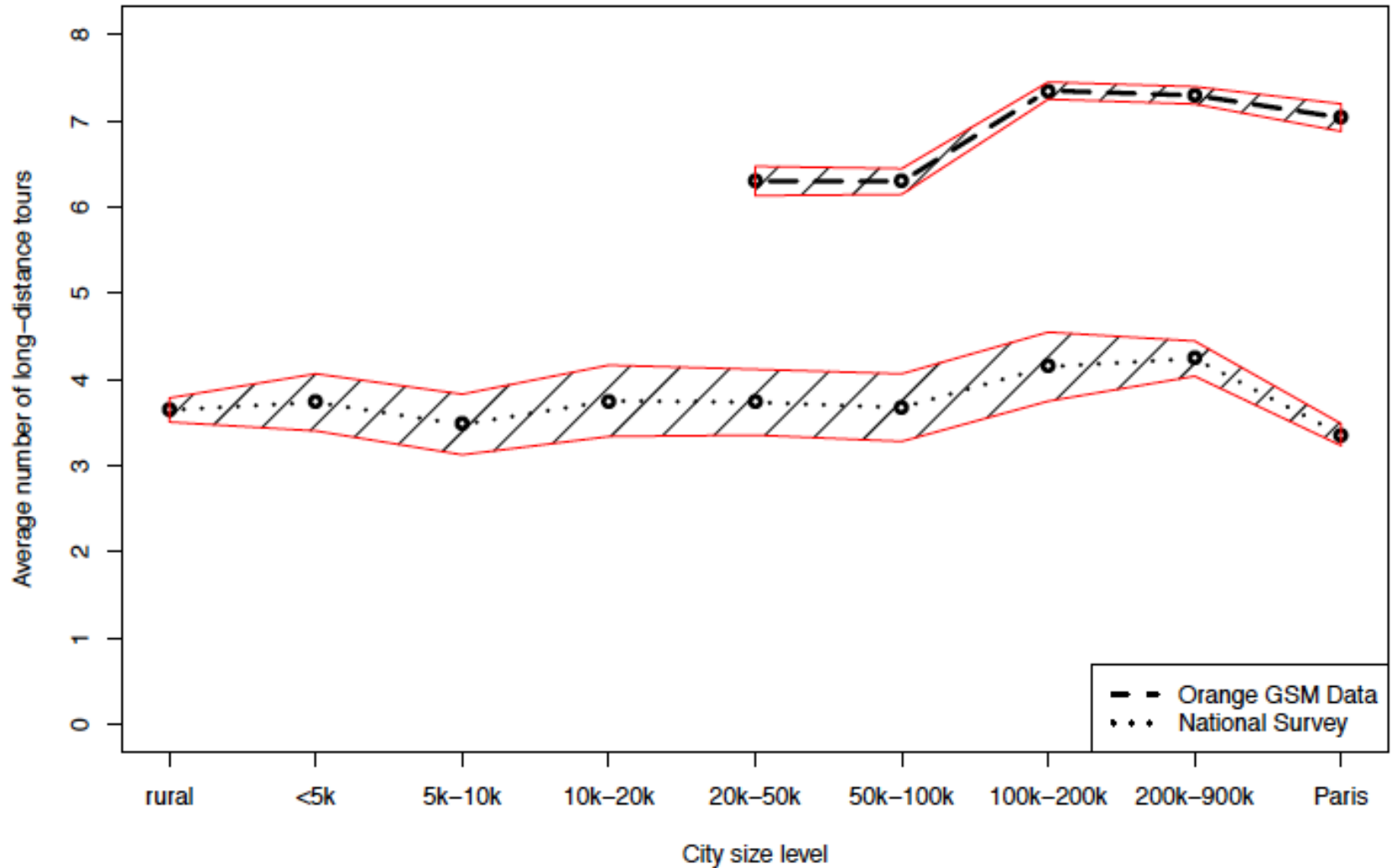
What do we know ?

Variable	Diary	GPS (logger or mobile) (no prompted recall)	Mobile
Participation	Self-selected	Self-selected	(Random)
Duration	1 day (- 6 weeks)	1 day (- 6 weeks)	1 day (Unlimited)
Stage	Yes, underreported	(Yes)	No
Trip	Yes, underreported	Yes	(Yes)
Journey	Yes	Yes	(Yes)
Time	Rounded	Exact	Imputed
Location	Rounded	Exact	Imputed
Mode	Yes	Imputed	Imputed
Purpose	Yes	Imputed	Imputed
Group	Yes	No	No
Expenditure	Yes	No	No

What do we know ?

Variable	Diary	GPS (logger or mobile) (no prompted recall)	Mobile
\$/reported day	High	High-medium	Low
Data availability	Months	Week	Daily
Corrections	Needed	No	No
Imputations	Needed	Needed	Needed
Choice models	Yes	Yes	Difficult
Socio-demographics	Yes	Yes	Imputed

French mobile data: long distance journeys over 5 months



What should we do ?

Next steps

- Query what we really need for
 - Cost-benefit analysis
 - Planning of prices and services
 - Planning for the slow modes
 - Social accounting
- High-quality multi-modal surveys to establish the measurement errors (add bluetooth and wifi senders, noise profile)
- Error correction models
- Cross check against third party sources

Next steps

- Treat survey data as indicators in a measurement model
- Treat traces as indicators in a measurement model
- Improve imputation methods (mode, purpose) (socio-demographics)
- Address the self-selection issue of the survey/tracing participation
- Address the self-selection into different service providers

Questions ?

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