

24th International Workshop on Household Survey Nonresponse

4-6 September, London

Aims for Today

- Start with a little refresher
- Summarise the main themes from the workshop
 - Key areas that maybe of interest to us
 - Main issues
 - Conclusions
- Raise awareness and promote discussion

What is Non-response?

- Potential respondents where we have little or no information
- Item non-response
- Unit non-response
 - Non-contact Refusal
 - Unsuitable Ineligible

Why should we be concerned?

- Decrease in precision – smaller sample size
- $Bias = \mu_r - \mu$

$$Bias = \mu_r - \left(\frac{n_r}{N} \mu_r + \frac{n_{nr}}{N} \mu_{nr} \right)$$

$$Bias = \frac{n_{nr}}{N} (\mu_r - \mu_{nr})$$

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Adjusting for Non-response

- Adjust the design
 - Over sampling
 - Targeting
- Weight to adjust for non-response
 - Design – Calibration – Non-response weights
 - Uses auxiliary information
 - Additional to the survey – Paradata
 - External to the survey
- Impute missing data
 - Mainly used for item non-response

Discussion

- What do you do in your survey areas to reduce non-response?
- Could we do better?

About the Worksop

- Sponsored by ONS, NatCen and ISER
- 42 participants, 10 countries, 22 papers
- 22 organisations, research and government
- Hosted in different countries each year
- The main goal is to bring "adjusters" and "reducers" together and to initiate cooperation on different projects.
- Presentation of work in progress

Key Themes from the Workshop

- Mixed mode data collection
- Adjusting for non-response
- Adaptive sampling
- Sequence analysis
- Others
 - Incentives
 - Survey materials

Mixed mode Issues

- Using CAWI/CATI reduces cost
Cheaper to collect than CAPI
Can we maximise cost savings?
 - Targeting potential respondents
 - Need to estimate who is likely to respond
 - Best for longitudinal designs
- Can increase bias
- Increases non-response
CAWI/CATI response is lower than CAPI
- Possible mode effects
 - Different responses to the same question

Mixed mode

Targeting Respondents – R Boreham

- How to target households to issue to web to maximize web full household response

Innovation Panel from Understanding Society - longitudinal

- 33% of the sample issued to FtF
- 67% issued to web and then FtF

Exploits the longitudinal design of the Innovation Panel

Mixed mode

Targeting Respondents – R Boreham

- Methodology

Logistic regression model to estimate individual's probability of responding

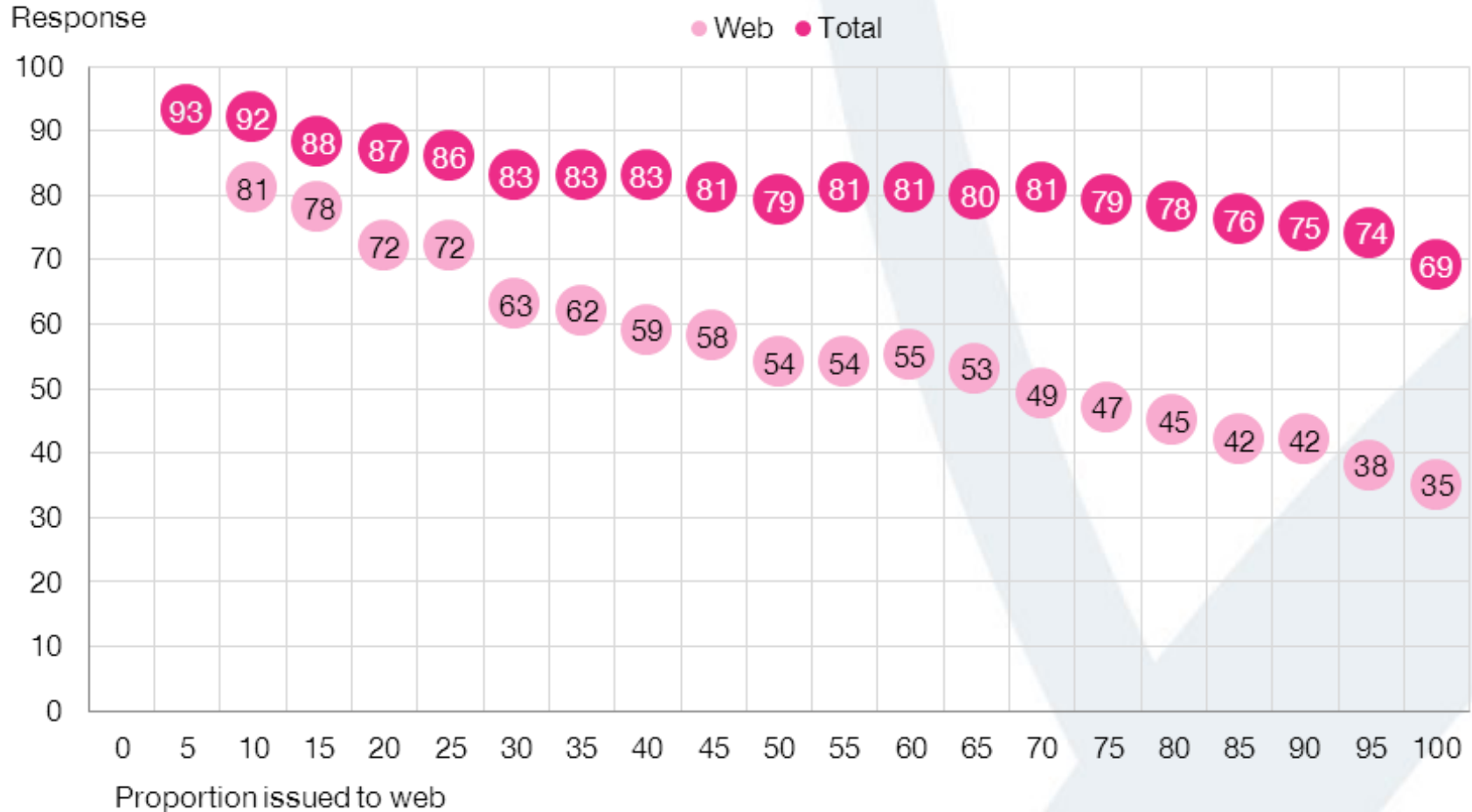
Estimated from random half sample

Multiply individual's probability of responding to predict household response

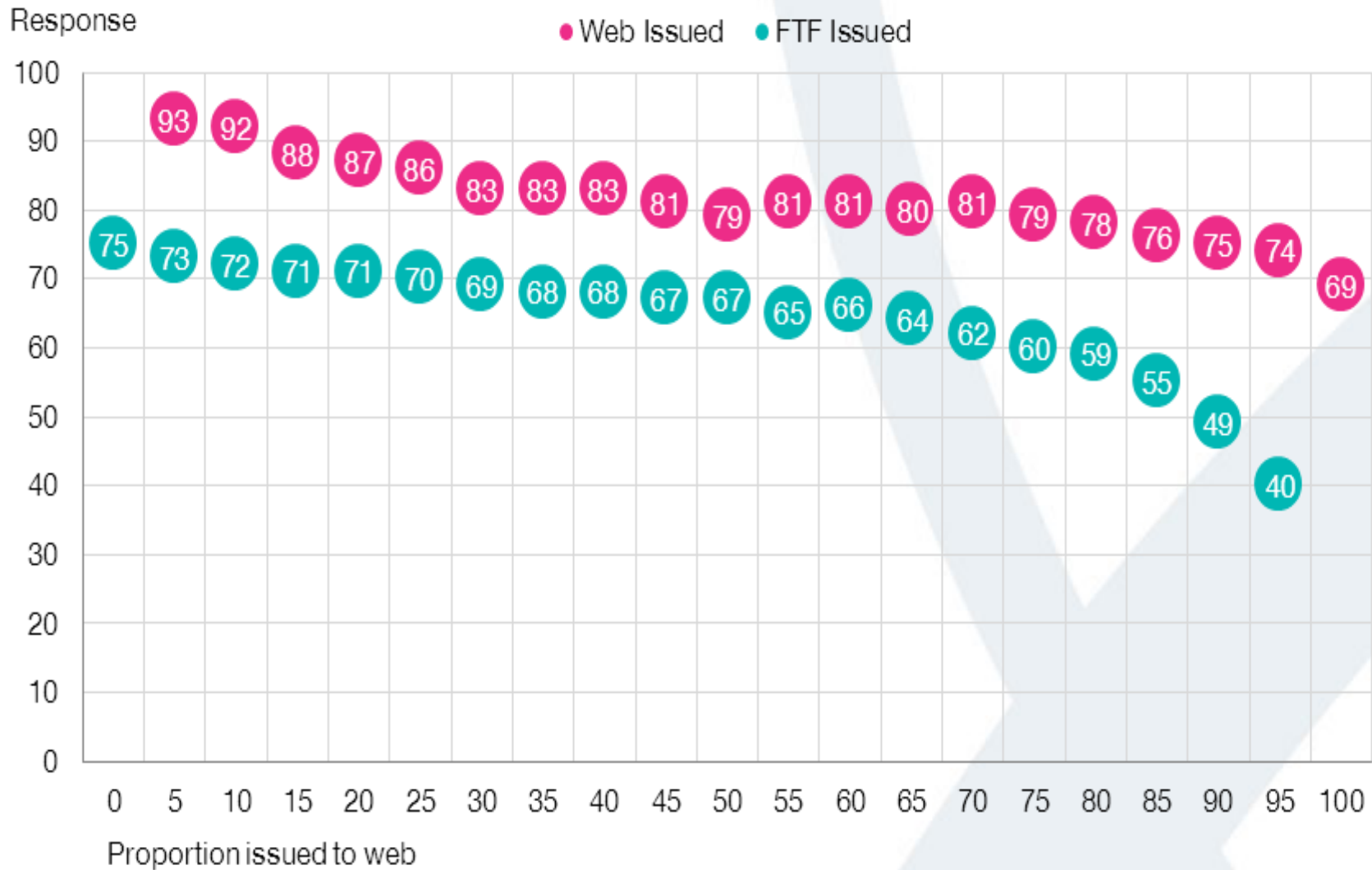
Rank order households in descending probability of response

Look at the top 5%, top 10%, top 15% of households on this list and work out their actual response rates

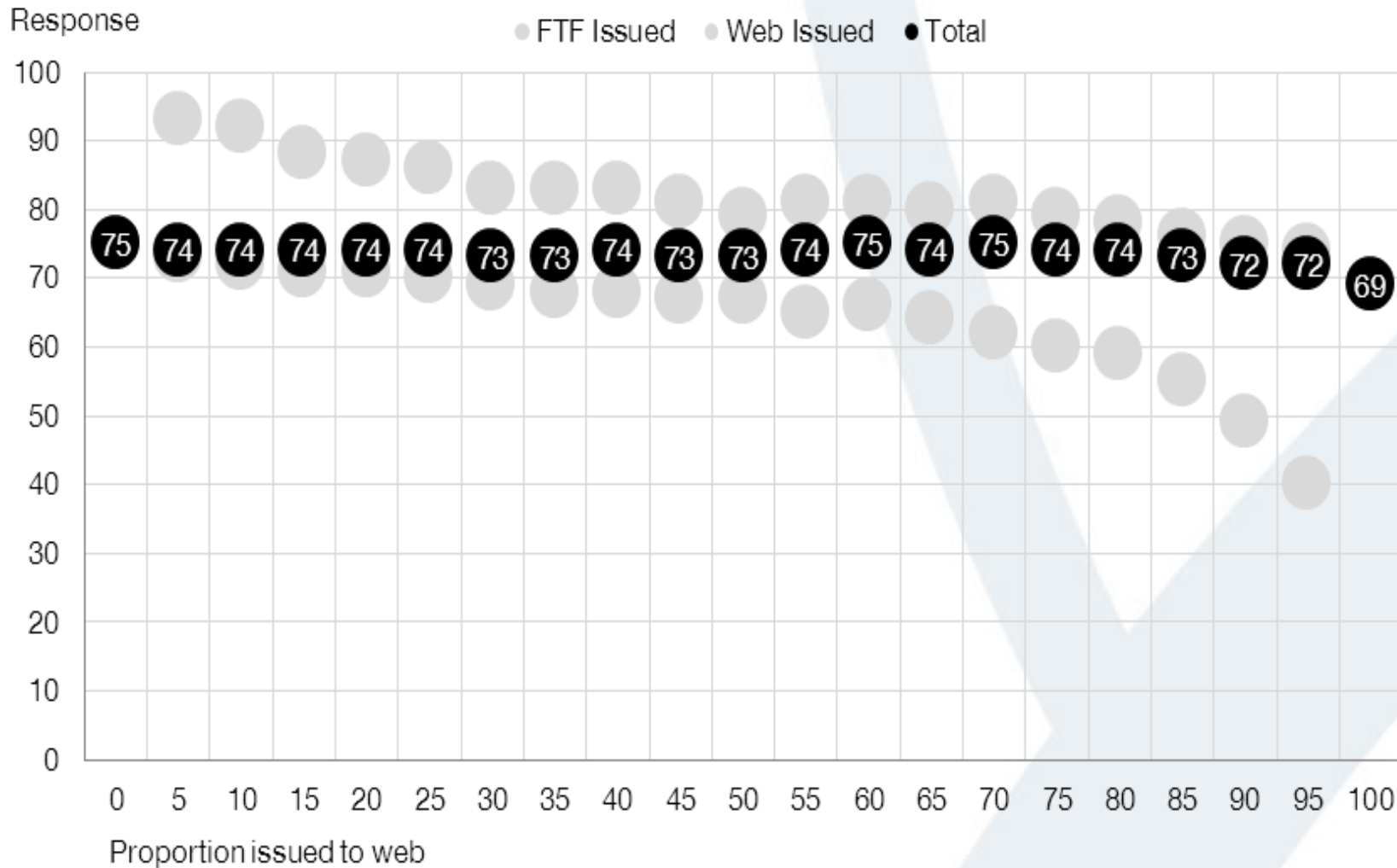
Web & Total Individual Response, by Percentage of Households Issued to Web



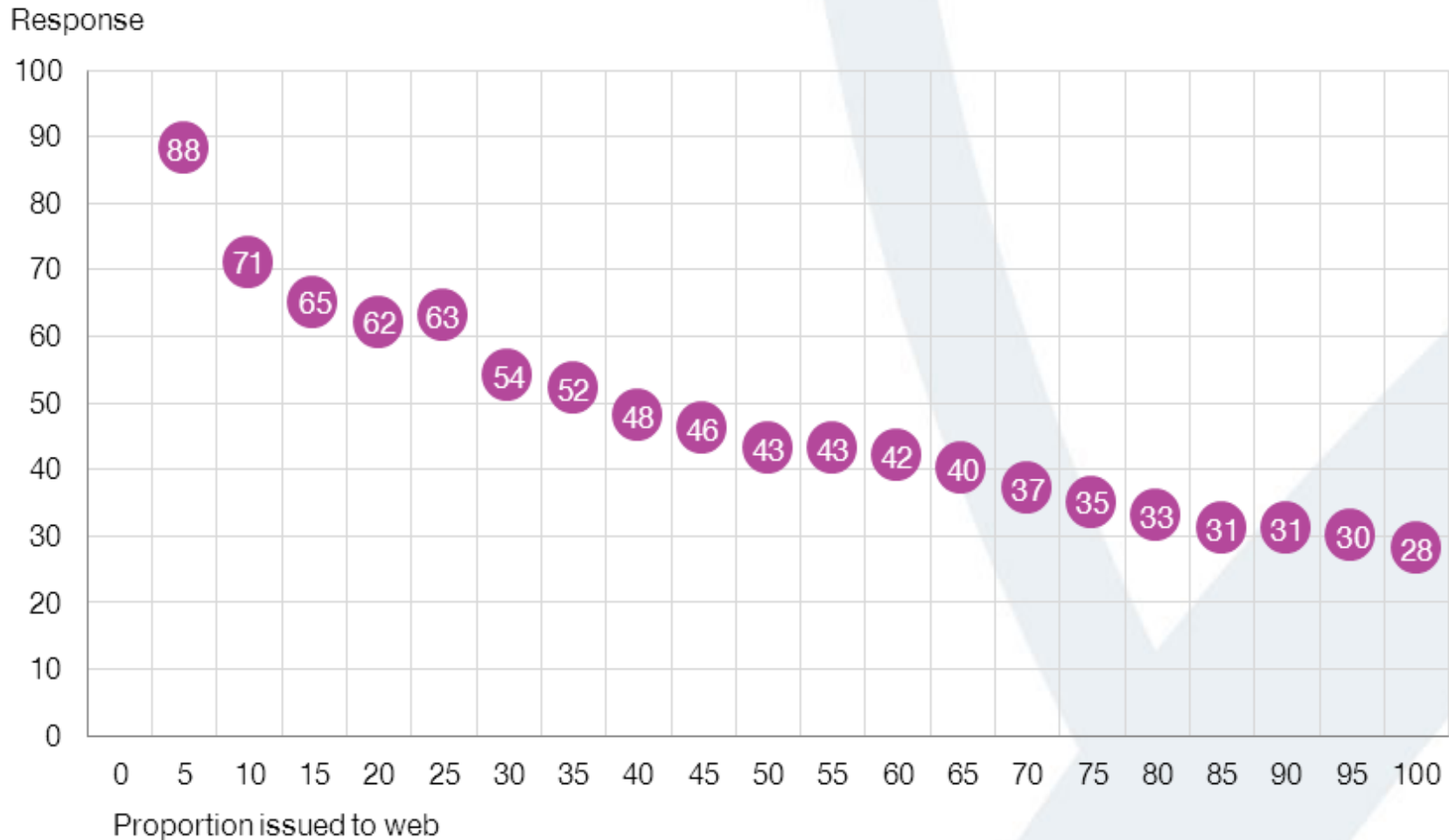
Total Individual Response for Web Issued v FTF Issued, by Percentage of Households Issued to Web



Total Individual Response, by Percentage of Households Issued to Web



Web Full Household Response, by Percentage of Households Issued to Web



Mixed mode

Targeting Respondents – A Cernat

- To find a mechanism of targeting the respondents that are most likely to answer using CAWI
 - Uses Understanding Society Innovation Panel
 - Logistic regression to model predicted probabilities
 - Targeting can lead to cost saving but at the expense of decreasing response rates and other potential problems such as measurement issues

Mixed mode

Targeting Respondents – A Cernat

Response rates and % of respondents using CAWI with different targeting strategies Predicted propensity to respond

Deciles	Response rates	% with CAWI
>= 1	0.805	0.586
>= 2	0.805	0.572
>= 3	0.81	0.542
>= 4	0.815	0.5
>= 5	0.819	0.451
>= 6	0.824	0.393
>= 7	0.828	0.328
>= 8	0.832	0.255
>= 9	0.837	0.178
10	0.842	0.093

Mixed mode Bias – D Joye

- Do different surveys or modes give different results
 - Web, mail and CATI
 - 25 minute questionnaire
 - Found little difference

Adjusting for Non-response Issues

- Use auxiliary data to calculate non-response weights
- Two types of auxiliary data
 - Internal (Interviewer observations - paradata)
 - External (Population registers)
- Issues?
 - Quality of the collected data
 - Correlation with survey variables
 - How to make best use of the information

Adjusting for Non-response

- Non-response weighting: Is it worth it?
D Hussey
Already have design and calibration weights
Mixed conclusion – depends on survey
- Two studies on using auxiliary data
Microgeographic data from private vendors – M Blohm
Socio Demographic Database – E Goni
- Looked at the predictive power of the auxiliary data
- Evidence from both studies was weak

Adjusting for Non-response

- The interviewer's memory

K Beullens

Do negative experiences predict lower success?

Do positive experiences predict higher success probabilities?

Inconclusive – too many confounding factors

Adjusting for Non-response - Paradata

- New Forms of Paradata Paper
J Sinbaldi
CATI longitudinal survey
Interviewers rate likelihood to respond 0-100
Predict response mixture of call data and
interviewer rating
Improved fit of the model

Adjusting for Non-response - Paradata

- Accuracy of interviewer observations

N Bates

Information areas collected by interviewers:

Observable	Graffiti	Condition
Barrier	Security	Children
Disability	Income	Employment
Language	Age	

Compares same address as measured by
same and different interviewers

Observations tend to agree

Adaptive sampling Issues

- Sample design is modified in real time as data collection continues
 - Increased response can cause increased bias
 - Problem of identifying units that make a difference
 - Needs auxiliary information
 - Good quality
 - Quickly available
- Could we achieve same result by non-response adjustment?

Adaptive sampling

F Laflamme

- Responsive collection design (RCD)

A model for managing changes during data collection

Strategy depends on objective

- Maximise response or representativeness

Uses available indicators to:

1. Adjust the collection to be more efficient
2. Identify critical points when significant changes need to be made to collection approach

CATI – Need up-to-date information

Example strategies

- Targeted calls/Caps on calls
- Prioritise by propensity to respond

Adaptive sampling

C Erdman

- National Health Interview Survey
 - Maximise quality while minimising cost
 - Contact history + Interviewer assessment to predict response
 - Investigate impact of different stopping rules
 - Number of contact attempts
 - Number of days
 - Number of refusals
 - Propensity to respond falls below threshold

Adaptive sampling

B Schouten

- Can a decrease in non-response bias in adaptive survey designs be achieved by nonresponse adjustment methods?

Representativity Indicator (or: R-indicator)

$$M(\rho) = 1 - 2S(\rho)$$

$S(\rho)$ = standard deviation of
estimated response probabilities

Compare with Coefficient of Variation

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- Sequence analysis
- Others
 - Incentives
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Discussion

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- Could we do better?

Sequence analysis

Issues

- New line of research – Not clear how to make practical use
- Hanly paper aims to clarify its use
- Look for factors that maximise success
 - Evidence of cut off points
 - Characteristics that influence success
 - Analyse interviewer call patterns

Sequence analysis

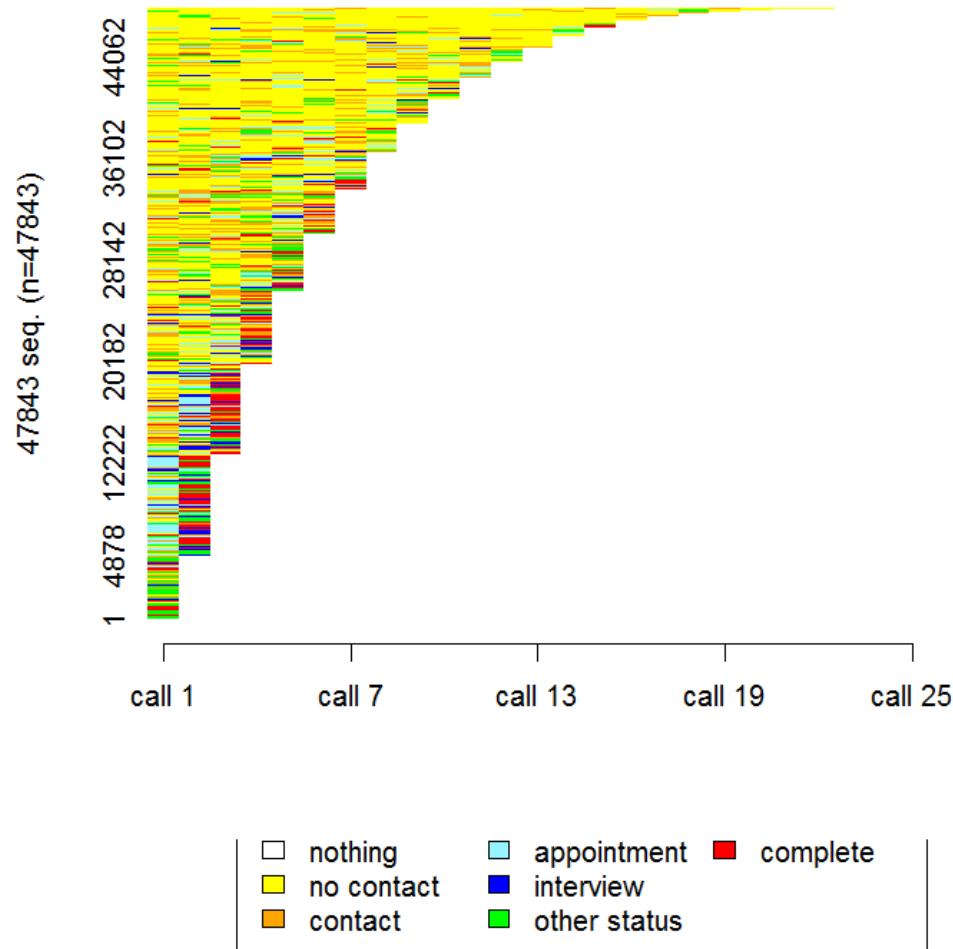
G Durrant

- To understand the complex patterns of interviewer calls to housing units
- Used cluster analysis to form types:

Short successful	Short unsuccessful
Long successful	Long unsuccessful
- Identify variables that are associated with these call types
 - number of floors, condition of property

[illegible]

Sequence analysis



Others

- Improving respondent correspondence
- Incentives – Interviewer perspective
- Panel discussion on moving away from response as a measure of quality
 - No clear alternative
 - ONS should lead on setting standards
 - Convince clients to move away
- Session with field interviewers

Next Steps

- Capability
 - Awareness
 - Use
- Coordination
 - Non-response group
- Cooperation
 - Internal
 - External

ANY QUESTIONS?

