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Within-household Selection Methods for Surveys without Field Interviewers in the United Kingdom

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NCRM National Centre for Research Methods

Office for National Statistics

UCL

Warwick The University of Warwick

Manchester 1824 The University of Manchester

City University of London Est 1894

National Centre for Social Research

LSE The London School of Economics and Political Science

Ulster University

UNIL | Université de Lausanne

Ipsos

Kantar Public

Research Strand 4: Surveys without field interviewers

- Subproject 5 – Within-household selection methods:

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Outline

- Objectives of subproject
- Background of subproject
- Within-household selection methods
- Methods for the review
- Survey practices in the UK
- Survey outcomes
  - Accuracy of selection
- Conclusions and next steps

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Objectives

- Summarise current practices for within-household selection methods used in the UK for surveys without field interviewers.
- Evaluate the performance of different methods of within-household selection for surveys without field interviewers from the literature.
- Develop a best practice guide for selecting respondents within households in surveys conducted without field interviewers.

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Background of subproject

- The Covid-19 pandemic led many social surveys to transition, or consider transitioning, from interviewer-administered to self-completion methods.
- In self-completion surveys, random selection of respondents within households is challenging:
  - The burden of the selection process shifts to sampled households and survey organisations have limited control.
  - There is no common practice on how many people should be selected – standard protocol tends to dictate that a single respondent should be randomly selected.

Within-household selection methods

- Methods can be generally classified by the extent of their probability selection:
- Probability-based (e.g. Kish grid, Rizzo method):
  - Minimise selection bias.
  - Require household enumeration and too complex to implement without field interviewers.
- Quasi probability-based (e.g. next, last or closest birthday methods):
  - Degree of selection bias but less burdensome to respondents.
- Non-probability based (e.g. youngest male / youngest female, any adult, any two adults etc):
  - Greater degree of selection bias but even less burdensome to respondents.

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Methods for the review (1)

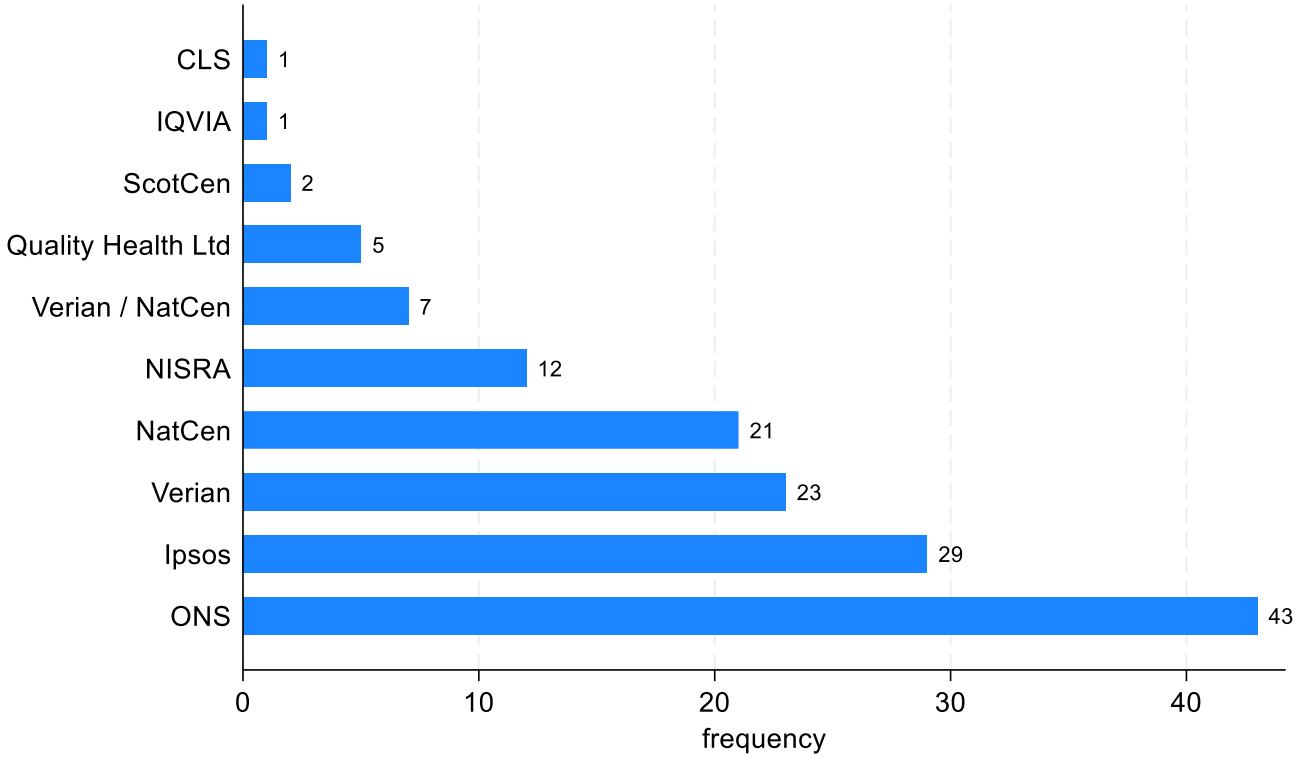
- Information requested from main survey agencies / organisations in the UK:
  - Surveys conducted from January 2019.
  - Large-scale surveys with a self-completion component.
- Review of the literature:
  - Mainly published from 2015.
  - Within-household selection methods in self-completion surveys.
  - Used address-based sampling frames.

Methods for the review (2)

- Information from main survey agencies / organisations in the UK:
  - Sample of 144 surveys.
  - Some surveys were excluded:
    - i) No implementation of any within-household selection of individuals.
    - ii) Within-household selection carried out by field interviewers.
- Literature search:
  - Slightly over 3,000 papers were identified for review.
  - Screened by title and abstract and 118 papers were considered for a more detailed review.

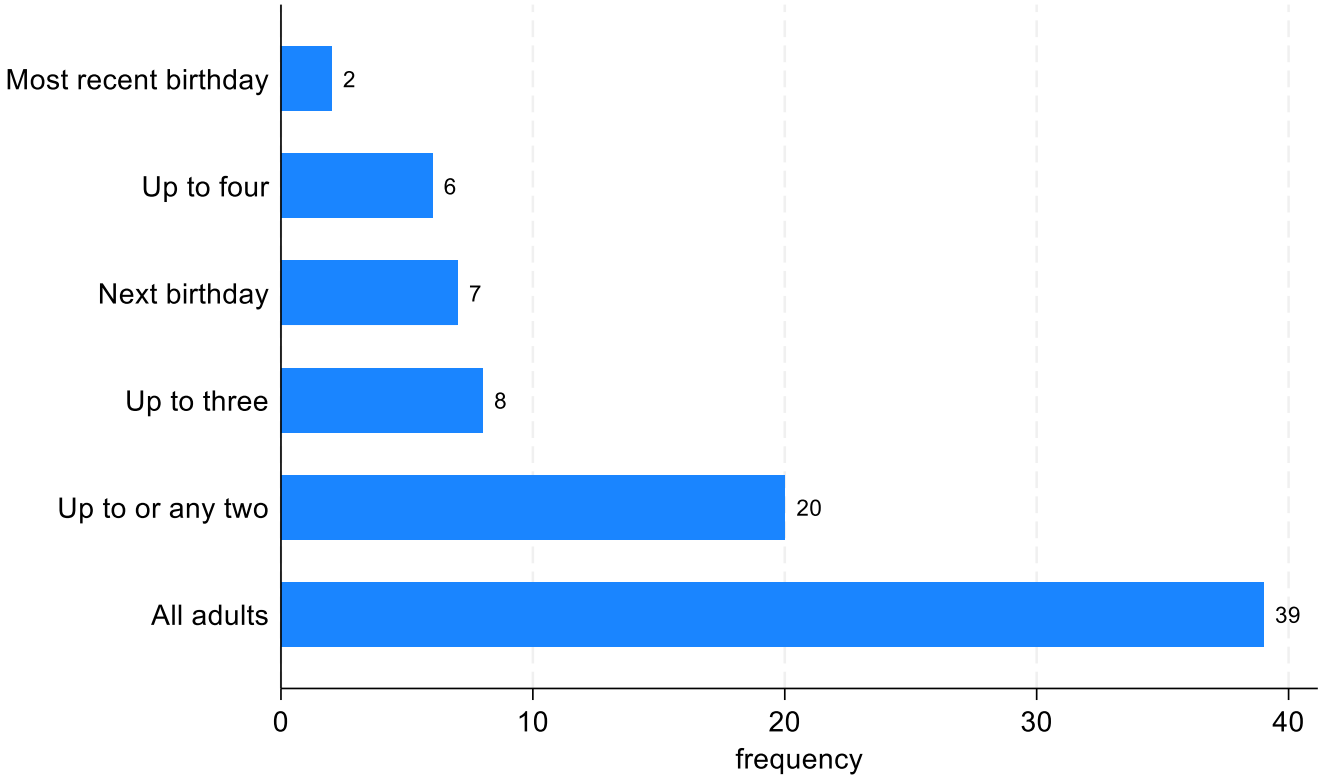
Survey practices in the UK (1)

- A plurality of the surveys were conducted by the ONS.
- Ipsos MORI, Verian and NatCen also conducted a substantial number of the surveys.
- There was also collaboration between agencies.



Note: Verian UK formerly Kantar Public UK (prior to 2023).

Survey practices in the UK (2)



- After restricting the sample of surveys:
  - 82 surveys were reviewed.
  - The ‘all adults’ method was more common compared to other methods.
  - This was followed by the ‘up to two’ or ‘any two’ methods.
  - Number of surveys using the ‘birthday’ methods was half of those using the ‘up to two’ and ‘any two’ methods.

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Birthday methods

- Examples: National Survey for Wales, Generation and Gender Survey.
- Reasons cited in Technical Reports for the choice of method (where given):
  - Simpler to implement (compared to the Kish grid method) with less burden for the household member.
  - Brief and less intrusive as it asks for less personal information.
  - 90% of households are made up of three people or less and most people will likely remember others' birthdays in the household.
  - 'Random' selection will generate a representative sample.

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Any adult(s) methods

- ‘Any two adults’, ‘up to three adults’, and ‘up to four adults’ methods.
- Examples: British Social Attitudes, Survey for Londoners, Financial Lives Survey.
- Some reasons cited in Technical Reports for the choice of methods include:
  - Reducing fraudulent responses (‘any two’ versus ‘up to three’ or more).
  - Poor compliance with instructions for ‘birthday’ methods than ‘any’ selection (20% – 25% of cases).
  - Most residential addresses (85%) contain either 1 or 2 adults and small proportions have 3 or 4. Ignoring non-random selection in such households unlikely to lead to any systematic selection bias.

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‘All adults’ methods

- Examples: Community Life Survey, Participation Survey.
- Reasons cited in Technical Reports for the choice of method (where given):
  - Solution to non-compliance with within-household sampling instructions.
  - To avoid the complexity and risk of selection error.
  - Overall small proportion of households with four or more adults.
  - Notably, a maximum of four logins usually provided per household.

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Accuracy of selection

- The National Survey for Wales reported 92% – 94% selection accuracy with the next birthday method (Evans et al. 2022; Jenkins et al. 2023):
  - This compared with approximately 90% (Marlar et al. 2018), 74% (Williams 2014), 70% (Stange et al. 2016), 68% (Olson and Smyth 2017) and 63% (Smyth et al. 2019) among all households.
- By default, accuracy rates are lower when single-person households are excluded from the analysis:
  - Accuracy rates were approximately 84% (Marlar et al. 2018), 58% (Stange et al. 2016), 60% (Olson and Smyth 2017) and 55% (Smyth et al. 2019).
  - Rates excluding single-person households not reported in the National Survey for Wales.

Accuracy of selection

- Olson and Smyth (2017) experimentally tested alternative placement of within-household selection instructions for the next birthday method:
  - Control: Standard cover letter asking person with next birthday to complete the survey.
  - T1: Control cover letter and instruction on questionnaire | T2: Control cover letter and explicit yes / no question.
  - Selection accuracy excluding single-person households: 66% for T2, 59% for T1 and 57% for control.
- Another experiment evaluated the effect of incentives and targeted letter wording for the next birthday method on accuracy rates:
  - Incentive condition with targeted letter wording had a higher accuracy rate (60%) than a no incentive condition (50%) or an incentive condition with standard letter wording (54%) (Smyth et al. 2019).

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Conclusions and next steps

- For the ‘birthday’ methods, targeted letter wording and use of active tasks can improve accuracy rates of respondent selection.
- Consider experimental studies to reduce selection bias for quasi-random methods, e.g.:
  - Randomly selecting a month within a year and assigning that month as the ‘eligible’ month for birthday closest to the month for a sampled household.
- What should be done with inaccurate selections?
- Consider other outcomes (sample composition, representativeness, response rates).
- Develop a practice guide for practitioners.

References

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Comments and questions

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Birthday methods (2)

- Birthday methods do not fully produce randomised respondent selection due to anchoring the selection birthday date to a field period:
  - Selection may bias estimates of variables of interest related to the date of birth.
- Potential ways of reducing selection bias:
  - Randomly selecting a month within a year and assigning that month as the ‘eligible’ month for birthday closest to the month for a sampled household – no known studies have used this approach (Olson et al. 2019).
  - Randomising the sample of residential addresses to either the next-birthday or the last-birthday selection method (Battaglia et al. 2008).

Any adult(s) methods (2)

- The selection of more than one respondent from a household leads to some degree of within-household clustering:
  - The effect is lower for ‘any two’ than if ‘all adults’ per household were eligible.
  - In contrast, the effect would be higher for the ‘any two’ method than if one adult per household was selected.
  - Evidence suggested significant clustering of gambling behaviours among households with three or four respondents.

(Gambling Commission and NatCen 2024).