European Social Survey

Assessing methods for within-household selection in self-administered push-to-web surveys

Nathan Reece, Peter Lynn

Survey Futures ECR Conference

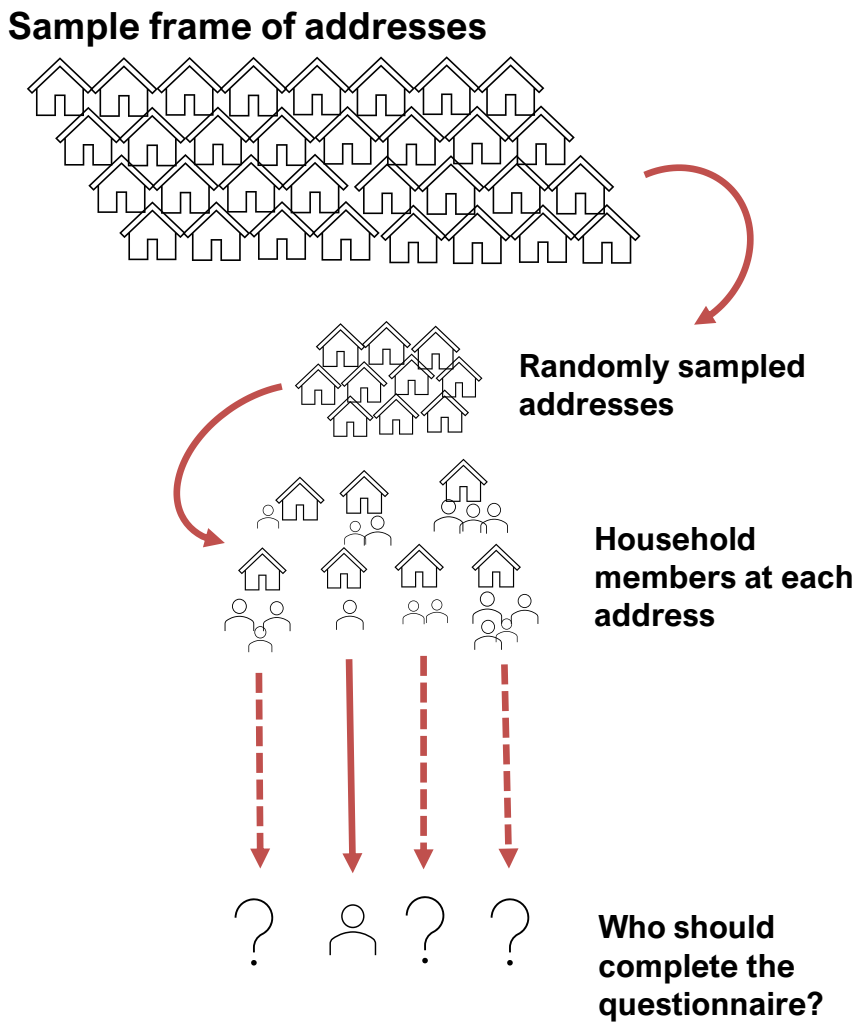
7 February 2024

europeansocialsurvey.org

ESS is a European Research Infrastructure Consortium (ESS ERIC)

Background

- In postal self-administered surveys, household members need to randomly select among themselves to complete questionnaire(s) where address-based samples are used
- Traditional face-to-face methods include the Kish grid, CAPI randomisation, next/last birthday. How best to adapt them for self-completion?
- Instructions for households need to balance efficacy with complexity, intrusiveness, and respondent burden
- Web & paper self-completion poses additional challenges (e.g., automated process on web cannot be replicated on paper)



Within-household selection methods – how to choose?

Method	Pros	Cons
Birthday methods	• Samples one person per household • Can be explained concisely • Some evidence from literature to boost compliance (Olson & Smyth, 2017) • Low risk of fraud (someone completing multiple questionnaires)	• Non-compliance (Olson et al., 2014) • Quasi-random as birthdays are not randomly distributed
Kish grid / random selection	• Easy to implement on web surveys • Random selection • Samples one person per household • Low risk of fraud	• Unclear how this could be done on paper • Requires household grid listing at the start of the questionnaire • If possible on paper, would be complex to explain • Non-compliance (and difficult to assess compliance rate)
All adults	• Random selection • Easy to explain • Cost-effective (fewer letters)	• High risk of fraud • Within-household clustering • High household burden • Non-compliance (e.g. 1/4 people respond)
Up to three/four	• Easy to explain • Cost-effective • Less burdensome than all adults	• High risk of fraud • Within-household clustering • High household burden • Non-compliance (e.g. 1/3 people respond) • Not probability based (marginally)
Up to two (‘any-two’)	• Easy to explain • Cost effective • Least burdensome of the multiple adult methods • Reduced risk of fraud compared to other any adult methods	• Higher risk of fraud than birthday methods • Not probability based (~15% of addresses with >2 adults) • Within-household clustering • Medium household burden • Non-compliance (if only 1/2 people respond)

Within-household selection methods – how to choose?

Method	Pros	Cons
Birthday methods	• Samples one person per household • Can be explained concisely • Some evidence from literature to boost compliance (Olson & Smyth, 2017) • Low risk of fraud (someone completing multiple questionnaires)	• Non-compliance (Olson et al., 2014) • Quasi-random as birthdays are not randomly distributed
Kish grid / random selection	• Easy to implement on web surveys • Random selection • Samples one person per household • Low risk of fraud	• Unclear how this could be done on paper • Requires household grid listing at the start of the questionnaire • If possible on paper, would be complex to explain • Non-compliance (and difficult to assess compliance rate)
All adults	• Random selection • Easy to explain • Cost-effective (fewer letters)	• High risk of fraud • Within-household clustering • High household burden • Non-compliance (e.g. 1/4 people respond)
Up to three/four	• Easy to explain • Cost-effective • Less burdensome than all adults	• High risk of fraud • Within-household clustering • High household burden • Non-compliance (e.g. 1/3 people respond) • Not probability based (marginally)
Up to two (‘any-two’)	• Easy to explain • Cost effective • Least burdensome of the multiple adult methods • Reduced risk of fraud compared to other any adult methods	• Higher risk of fraud than birthday methods • Not probability based (~15% of addresses with >2 adults) • Within-household clustering • Medium household burden • Non-compliance (if only 1/2 people respond)

Within-household selection methods – how to choose?

Method	Pros	Cons
Birthday methods	• Samples one person per household • Can be explained concisely • Some evidence from literature to boost compliance (Olson & Smyth, 2017) • Low risk of fraud (someone completing multiple questionnaires)	• Non-compliance (Olson et al., 2014) • Quasi-random as birthdays are not randomly distributed
Kish grid / random selection	• Easy to implement on web surveys • Random selection • Samples one person per household • Low risk of fraud	• Unclear how this could be done on paper • Requires household grid listing at the start of the questionnaire • If possible on paper, would be complex to explain • Non-compliance (and difficult to assess compliance rate)
All adults	• Random selection • Easy to explain • Cost-effective (fewer letters)	• High risk of fraud • Within-household clustering • High household burden • Non-compliance (e.g. 1/4 people respond)
Up to three/four	• Easy to explain • Cost-effective • Less burdensome than all adults	• High risk of fraud • Within-household clustering • High household burden • Non-compliance (e.g. 1/3 people respond) • Not probability based (marginally)
Up to two (‘any-two’)	• Easy to explain • Cost effective • Least burdensome of the multiple adult methods • Reduced risk of fraud compared to other any adult methods	• Higher risk of fraud than birthday methods • Not probability based (~15% of addresses with >2 adults) • Within-household clustering • Medium household burden • Non-compliance (if only 1/2 people respond)

Within-household selection methods – how to choose?

Method	Pros	Cons
Birthday methods	• Samples one person per household • Can be explained concisely • Some evidence from literature to boost compliance (Olson & Smyth, 2017) • Low risk of fraud (someone completing multiple questionnaires)	• Non-compliance (Olson et al., 2014) • Quasi-random as birthdays are not randomly distributed
Kish grid / random selection	• Easy to implement on web surveys • Random selection • Samples one person per household • Low risk of fraud	• Unclear how this could be done on paper • Requires household grid listing at the start of the questionnaire • If possible on paper, would be complex to explain • Non-compliance (and difficult to assess compliance rate)
All adults	• Random selection • Easy to explain • Cost-effective (fewer letters)	• High risk of fraud • Within-household clustering • High household burden • Non-compliance (e.g. 1/4 people respond)
Up to three/four	• Easy to explain • Cost-effective • Less burdensome than all adults	• High risk of fraud • Within-household clustering • High household burden • Non-compliance (e.g. 1/3 people respond) • Not probability based (marginally)
Up to two (‘any-two’)	• Easy to explain • Cost effective • Least burdensome of the multiple adult methods • Reduced risk of fraud compared to other any adult methods	• Higher risk of fraud than birthday methods • Not probability based (~15% of addresses with >2 adults) • Within-household clustering • Medium household burden • Non-compliance (if only 1/2 people respond)

Within-household selection methods – how to choose?

Method	Pros	Cons
Birthday methods	• Samples one person per household • Can be explained concisely • Some evidence from literature to boost compliance (Olson & Smyth, 2017) • Low risk of fraud (someone completing multiple questionnaires)	Non-compliance (Olson et al., 2014) • Quasi-random as birthdays are not randomly distributed
Kish grid / random selection	• Easy to implement on web surveys • Random selection • Samples one person per household • Low risk of fraud	• Unclear how this could be done on paper • Requires household grid listing at the start of the questionnaire • If possible on paper, would be complex to explain Non-compliance (and difficult to assess compliance rate)
All adults	• Random selection • Easy to explain • Cost-effective (fewer letters)	• High risk of fraud • Within-household clustering • High household burden Non-compliance (e.g. 1/4 people respond)
Up to three/four	• Easy to explain • Cost-effective • Less burdensome than all adults	• High risk of fraud • Within-household clustering • High household burden Non-compliance(e.g. 1/3 people respond) • Not probability based (marginally)
Up to two (‘any-two’)	• Easy to explain • Cost effective • Least burdensome of the multiple adult methods • Reduced risk of fraud compared to other any adult methods	• Higher risk of fraud than birthday methods • Not probability based (~15% of addresses with >2 adults) • Within-household clustering • Medium household burden Non-compliance (if only 1/2 people respond)

Within-household selection methods – how to choose?

Method	Pros	Cons
Birthday methods	• Samples one person per household • Can be explained concisely • Some evidence from literature to boost compliance (Olson & Smyth, 2017) • Low risk of fraud (someone completing multiple questionnaires)	Non-compliance (Olson et al., 2014) • Quasi-random as birthdays are not randomly distributed
Kish grid / random selection	• Easy to implement on web surveys • Random selection • Samples one person per household • Low risk of fraud	• Unclear how this could be done on paper • Requires household grid listing at the start of the questionnaire • If possible on paper, would be complex to explain Non-compliance (and difficult to assess compliance rate)
All adults	• Random selection • Easy to explain • Cost-effective (fewer letters)	High risk of fraud Within-household clustering High household burden Non-compliance (e.g. 1/4 people respond)
Up to three/four	• Easy to explain • Cost-effective • Less burdensome than all adults	High risk of fraud Within-household clustering High household burden Non-compliance(e.g. 1/3 people respond) • Not probability based (marginally)
Up to two (‘any-two’)	• Easy to explain • Cost effective • Least burdensome of the multiple adult methods • Reduced risk of fraud compared to other any adult methods	Higher risk of fraud than birthday methods Within-household clustering Medium household burden Non-compliance (if only 1/2 people respond) • Not probability based (~15% of addresses with >2 adults)

Within-household selection methods – how to choose?

Method	Pros	Cons
Birthday methods	• Samples one person per household • Can be explained concisely • Some evidence from literature to boost compliance (Olson & Smyth, 2017) • Low risk of fraud (someone completing multiple questionnaires)	Non-compliance (Olson et al., 2014) • Quasi-random as birthdays are not randomly distributed
Kish grid / random selection	• Easy to implement on web surveys • Random selection • Samples one person per household • Low risk of fraud	• Unclear how this could be done on paper • Requires household grid listing at the start of the questionnaire • If possible on paper, would be complex to explain Non-compliance (and difficult to assess compliance rate)
All adults	• Random selection • Easy to explain • Cost-effective (fewer letters)	High risk of fraud Within-household clustering High household burden Non-compliance (e.g. 1/4 people respond)
Up to three/four	• Easy to explain • Cost-effective • Less burdensome than all adults	High risk of fraud Within-household clustering High household burden Non-compliance(e.g. 1/3 people respond) Not probability based (marginally)
Up to two ('any-two')	• Easy to explain • Cost effective • Least burdensome of the multiple adult methods • Reduced risk of fraud compared to other any adult methods	Higher risk of fraud than birthday methods Within-household clustering Medium household burden Non-compliance (if only 1/2 people respond) Not probability based (~15% of addresses with >2 adults)

Finding the best commonly used method

- Any-two is the most common method used, followed by birthday methods
- Most surveys opt for any-two as its cheaper, even though it isn't probability based
- Though birthday methods are quasi-probability based in theory, they also have a known issue with non-compliance
- Is a compromise on random sampling harming accuracy? It has never been experimentally tested.

Experimental design

Assessing the relative merits of any-two within-household selection versus next birthday

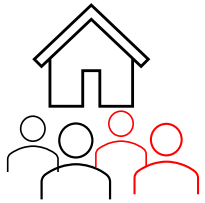
- Administering a self-completion web and paper survey in Great Britain
- Sample will be randomly allocated to either the next-birthday group or any-two, targeting 1000 completions in each group
- Using a pared down version of the ESS source questionnaire (20-25 minutes).
- Sequential designs – paper questionnaire sent to all nonrespondents at the 2nd reminder
- Following the ESS 'standard' self-completion approach:
    - Invitation + 3 reminders
    - £5 cash unconditional incentive, £10 conditional voucher
    - Use of university branding on letters and envelopes (City St Georges, University of Essex)
    - Variation of envelope colours

Experimental design (2)

Next-birthday

- Requesting the person 18+ with the next birthday participates
- Instructions stated on invitation letters and cover pages of web and paper questionnaire
- Check questions included at the beginning of the survey (as recommended in Olson & Smyth, 2017).
- Household grid will request dates of birth for respondent and household members, facilitating accuracy estimation

Any-two



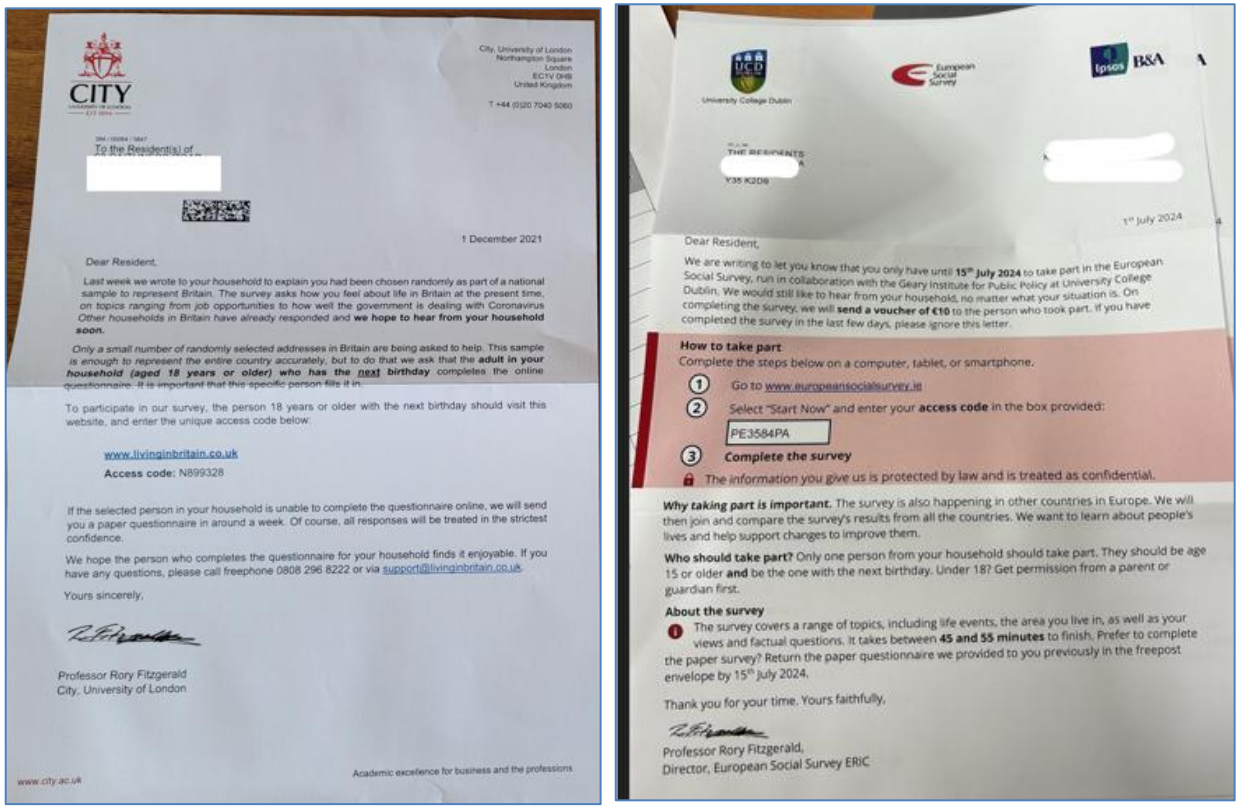
- Requesting up to two adults 18+ participate
- Instructions stated on invitation letters and cover pages of web and paper questionnaire
- Singular £5 unconditional cash incentive
- £10 conditional vouchers for each completion
- Targeting completions by second adult where completions by other household member indicate more than one adult reside there
- Singular paper questionnaire sent at 2nd reminder, second available on request
- Assuming 1.4 completions per address (from BSA)

Research questions

- Does a probability-based within-household selection method yield a more representative survey than a non probability-based method?
    - › Chi-squared tests on differences in sample composition, comparison against external benchmarks
- Are there significant differences in the distribution of answers?
- Does either method's response rate significantly outperform the other?
- Are the estimates of one method more precise than the other?
    - › Calculation of design effects in each group
- Does the extent of non-compliance with the next-birthday method affect representation?
    - › Estimating the impact of removing incorrect selections from the final sample on multiple indicators of sample composition

Corollary experiment on invitation letters

- The project will also conduct an experimental comparison on the design of invitation letters
- Comparing two styles, composed separately by Don Dillman and Laura Wilson (from ONS)
- Sample will be randomly allocated to both groups (2x2 experiment with within-household selection methods)
- Different visual presentation & information may appeal to/draw in different groups of respondents
- To compare sample compositions and response rates



CITY

City, University of London
Northampton Square
London
EC1V 0HB
United Kingdom

T +44 (0)20 7040 5060

To the Resident(s) of

1 December 2021

Dear Resident,

Last week we wrote to your household to explain you had been chosen randomly as part of a national sample to represent Britain. The survey asks how you feel about life in Britain at the present time, on topics ranging from job opportunities to how well the government is dealing with Coronavirus. Other households in Britain have already responded and ***we hope to hear from your household soon.***

Only a small number of randomly selected addresses in Britain are being asked to help. This sample is enough to represent the entire country accurately, but to do that we ask that the ***adult in your household (aged 18 years or older) who has the next birthday*** *completes the online questionnaire. It is important that this specific person fills it in.*

To participate in our survey, the person 18 years or older with the next birthday should visit this website, and enter the unique access code below:

www.livinginbritain.co.uk

Access code: N899328

If the selected person in your household is unable to complete the questionnaire online, we will send you a paper questionnaire in around a week. Of course, all responses will be treated in the strictest confidence.

We hope the person who completes the questionnaire for your household finds it enjoyable. If you have any questions, please call freephone 0808 296 8222 or via support@livinginbritain.co.uk.

Yours sincerely,

Professor Rory Fitzgerald
City, University of London

www.city.ac.uk

Academic excellence for business and the professions

University College Dublin

European Social Survey

Ipsos B&A

1st July 2024

Dear Resident,

We are writing to let you know that you only have until **15th July 2024** to take part in the European Social Survey, run in collaboration with the Geary Institute for Public Policy at University College Dublin. We would still like to hear from your household, no matter what your situation is. On completing the survey, we will **send a voucher of €10** to the person who took part. If you have completed the survey in the last few days, please ignore this letter.

How to take part

Complete the steps below on a computer, tablet, or smartphone.

1. Go to www.europeansocialsurvey.ie
2. Select "Start Now" and enter your **access code** in the box provided:

   PE3584PA
3. **Complete the survey**

The information you give us is protected by law and is treated as confidential.

Why taking part is important. The survey is also happening in other countries in Europe. We will then join and compare the survey's results from all the countries. We want to learn about people's lives and help support changes to improve them.

Who should take part? Only one person from your household should take part. They should be age 15 or older **and** be the one with the next birthday. Under 18? Get permission from a parent or guardian first.

About the survey

The survey covers a range of topics, including life events, the area you live in, as well as your views and factual questions. It takes between **45 and 55 minutes** to finish. Prefer to complete the paper survey? Return the paper questionnaire we provided to you previously in the freepost envelope by 15th July 2024.

Thank you for your time. Yours faithfully,

Professor Rory Fitzgerald,
Director, European Social Survey ERIC

Don Dillman designed letter from 2022 ESS self-completion experiment (left) and Laura Wilson designed letter (right) from 2024 ESS12 Pilot self-completion survey in Ireland

Contact

Nathan.reece@city.ac.uk
europeansocialsurvey.org
EuropeanSocialSurvey
European-Social-Survey
ESS_Survey
EuropeanSocialSurveyERIC

European Social Survey