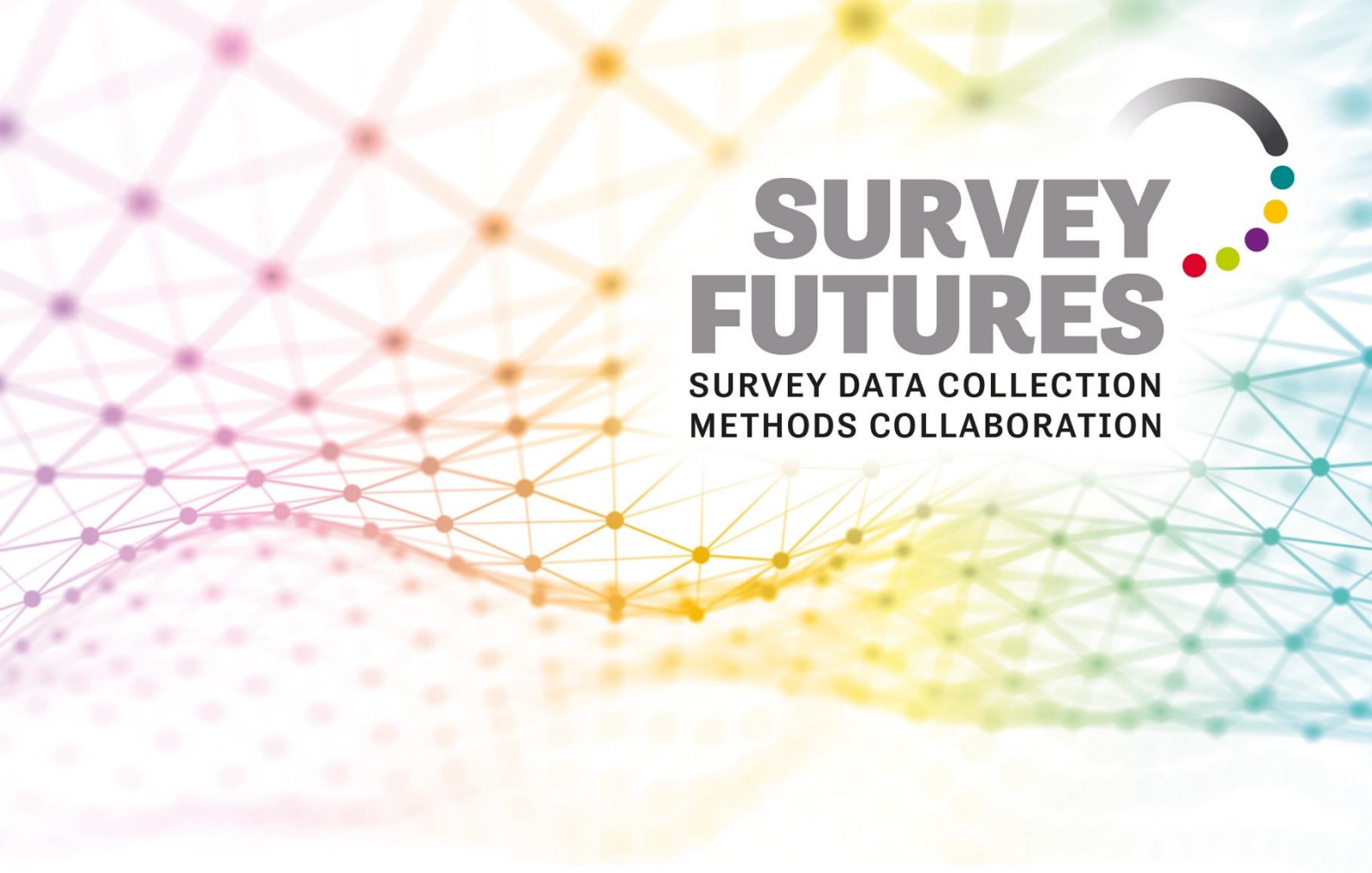




SURVEY FUTURES

**SURVEY DATA COLLECTION
METHODS COLLABORATION**

Survey Practice Guide 3: Retrospective measurement of life events in online self- completion surveys

Cristian Domarchi¹, Olga Maslovskaya¹, Lisa Calderwood², Matt Brown²

¹University of Southampton, ²University College London

October 2025

www.surveyfutures.net

Survey Futures is an Economic and Social Research Council (ESRC)-funded initiative (grant ES/X014150/1) aimed at bringing about a step change in survey research to ensure that high quality social survey research can continue in the UK. The initiative brings together social survey researchers, methodologists, commissioners and other stakeholders from across academia, government, private and not-for-profit sectors. Activities include an extensive programme of research, a training and capacity-building (TCB) stream, and dissemination and promotion of good practice. The research programme aims to assess the quality implications of the most important design choices relevant to future UK surveys, with a focus on inclusivity and representativeness, while the TCB stream aims to provide understanding of capacity and skills needs in the survey sector (both interviewers and research professionals), to identify promising ways to improve both, and to take steps towards making those improvements. *Survey Futures* is directed by Professor Peter Lynn, University of Essex, and is a collaboration of twelve organisations, benefitting from additional support from the Office for National Statistics and the ESRC National Centre for Research Methods. Further information can be found at www.surveyfutures.net.

1 Introduction

The study of life events, their sequencing and interrelatedness, and their effects on individual and social outcomes has long been a focus of research across many social science disciplines. Many surveys therefore include retrospective measures of life events, particularly longitudinal studies, which often seek to capture information about the period since the last wave of data collection or events that occurred before participants joined the study.

This guide presents recommendations for survey practice, based on our evidence review on retrospective measurement of life events in online self-completion surveys (Domarchi et al, 2025) . We draw upon evidence from both survey practice and academic literature about different measurement approaches, assessing their advantages, limitations, and practical considerations for implementation.

Two main approaches exist for collecting detailed retrospective data on life events: *retrospective calendars* and *questionnaire-based approaches*.

1. **Retrospective calendars** use a chronological grid format with time units on one axis and life domains on the other to help respondents report life events. Research demonstrates this visual layout enhances memory recall. However, most applications have been interviewer-administered, with limited evidence for self-administered versions. Two main types are distinguished by the length of time they cover:
 - (a) **Life history calendars (LHC)** capture complete *life histories*, which are understood as a series of significant and interrelated events occurring to individuals over their entire lifespan. Typically used in initial interviews for longitudinal or cohort surveys, they cover a wide range of domains depending on the survey's focus. In the UK the English Longitudinal Study of Ageing (ELSA)'s recent Life History project used an online LHC and Understanding Society has conducted a recent pilot of an LHC.
 - (b) **Event history calendars (EHC)** focus on collecting *event histories* and cover shorter time periods. They are typically used in longitudinal panel or cohort surveys to collect information about events occurring in the period between two consecutive interviews or waves and, more generally, when studying specific timeframes (days, months, or years) rather than entire lifespans. EHCs have been used in several longitudinal surveys including the National Child Development Study (NCDS) and Next Steps in the UK, the German Family Panel, and the Growing Up in Australia survey.
2. **Questionnaire-based approaches** involve participants being asked questions about their life history in several domains, such as employment history, family events, relationships and partnerships, fertility history, or places of residence. The questions are typically asked sequentially with respondents required to recall events from the most recent to the most distant or vice-versa. Several questionnaire-based approaches have been used in survey practice:
 - (a) **Conventional questionnaires** consist of a series of questions designed to construct a respondent's life history. These questionnaires often ask respondents to input dates to situate events within a specific timeframe and may include visual aids such as summary tables for feedback (rather than for event input). They are commonly

used to collect retrospective data in cross-sectional surveys, or when recruiting new participants in longitudinal surveys.

- (b) **Dependent interviewing** uses answers from previous interviews to guide question routing or wording in subsequent interviews. In *proactive dependent interviewing*, participants are asked whether their circumstances in a specific life domain have changed since the last interview or remained the same. In *reactive dependent interviewing*, participants are first asked about their current status without referencing prior answers. Discrepancies are only addressed if they suggest a change in status. Dependent interviewing is widely employed in longitudinal surveys including Understanding Society, the US Panel Study of Income Dynamics (PSID), and the European Union Statistics on Income and Living Conditions (EU-SILC) survey.
- (c) **Event-triggered data collection**, a relatively new method also used for longitudinal surveys. In each wave, respondents first answer simple “Yes/No” questions about whether they have experienced any of a list of life events in the period between the last and the current interview. If the answer is positive, they are then asked to identify which events occurred, and then routed into modules of follow-up questions for each reported event. This method has been trialled in Understanding Society.

Given the significant variation in scope, methodology, and capabilities across approaches, each method might be suitable to different survey contexts. The following summary table provides a brief description of each method, including its pros, cons, and some practical considerations for their implementation. We also provide some general recommendations for method selection based on survey type and data collection requirements.

2 Summary of pros and cons of each method

Method	Summary	Data quality		Wider considerations	Recommendations
		Pros	Cons		
(1) Retrospective calendars					
Life history calendars (LHC)	• Grid-based diary with time units (e.g., years, decades) on one axis and life domains (e.g., career, relationships, health) on the other. • The timeline spans the participant’s entire life. • Participants are invited to place relevant events in the grid.	• The LHC allows for sequencing of events and displays them graphically, helping respondents to contextualise them and reducing the risk of omission. • The visual properties of the LHC allow respondents and interviewers to link episodes across life domains, encouraging top-down and parallel retrieval. • Landmark events in the LHC can serve as temporal anchoring points or bonding cues. • The LHC can use pre-loaded information from previous responses to the same questionnaire to aid event recall.	• Implementation of a self-administered LHC can require significant efforts in terms of programming and budget. • Due to grid dimensions, the LHC can be difficult to adapt for display in smaller screen devices (e.g. mobile phones).	• The issue of which grid layout to use is not solved in the literature. “Horizontal” layouts are largely optimised for desktop use and are incompatible with smaller screen sizes. “Vertical” layouts work better for mobile devices, only if the number of domains is limited. • In the absence of an interviewer, instructions for completion are essential. Video demonstrations and contextual help (tooltips, pop-ups, help menus) can aid comprehension of complex tasks • Pre-loaded data (from prior survey responses) can reduce input burden. Step-by-step event entry (click- or question-based) and editing capabilities can improve event recall and data accuracy. • Instrument complexity and topic sensitivity can potentially lead to response breakoffs.	LHCs can be a reliable source of retrospective data on life events over long periods in self-administered online surveys. High implementation costs might be compensated by higher data quality. To ensure their effectiveness, they should: • Provide clear completion instructions. • Provide completion examples (for example, pre-filled events or domains). • Ensure simultaneous visualisation of several domains in a single graphical time frame. • Incorporate consistency checks and allow participants to edit responses. • Ensure compatibility across devices and screen sizes.

Method	Summary	Data quality		Wider considerations	Recommendations
		Pros	Cons		
(1) Retrospective calendars					
Event history calendars (EHC)	• Grid-based diary with time units (e.g., months, years) on one axis and life domains (e.g., career, relationships, health) on the other. • The timeline covers a shorter time span (for example, the time between two consecutive waves in a longitudinal survey, or the last X months or years). Participants are invited to place relevant events in the grid.	• The EHC allows for sequencing of events and displays them graphically, helping respondents to contextualise them and reducing the risk of omission. • The visual properties of the EHC allow respondents and interviewers to link episodes across life domains, encouraging top-down and parallel retrieval. • Landmark events in the EHC can serve as temporal anchoring points or bonding cues. • The EHC can use pre-loaded information (for example, from previous waves, or from previous responses earlier in the same questionnaire), to aid event recall.	• As with LHCs, EHCs can be significantly costly to program and implement. • EHCs can also be difficult to adapt for display in smaller screen devices. However, this is less concerning than for LHCs, as the time span is shorter.	• “Horizontal” layouts can be appropriate for EHCs, as the period covered is shorter compared to LHCs. • As with LHCs, video instructions and contextual help are essential to ensure respondents understand the process of completing the EHCs. • Pre-loaded data (both from prior survey responses, and from information obtained in previous waves) can reduce input burden. Step-by-step event entry (click- or question-based) and editing capabilities can improve event recall and data accuracy. • Instrument complexity and topic sensitivity can potentially lead to response breakoffs.	Compared to LHCs, EHCs usually cover shorter time spans for which recall error is likely a lesser concern. As EHCs are also difficult to design and implement, they are not the most cost-effective method to collect retrospective data in shorter periods.

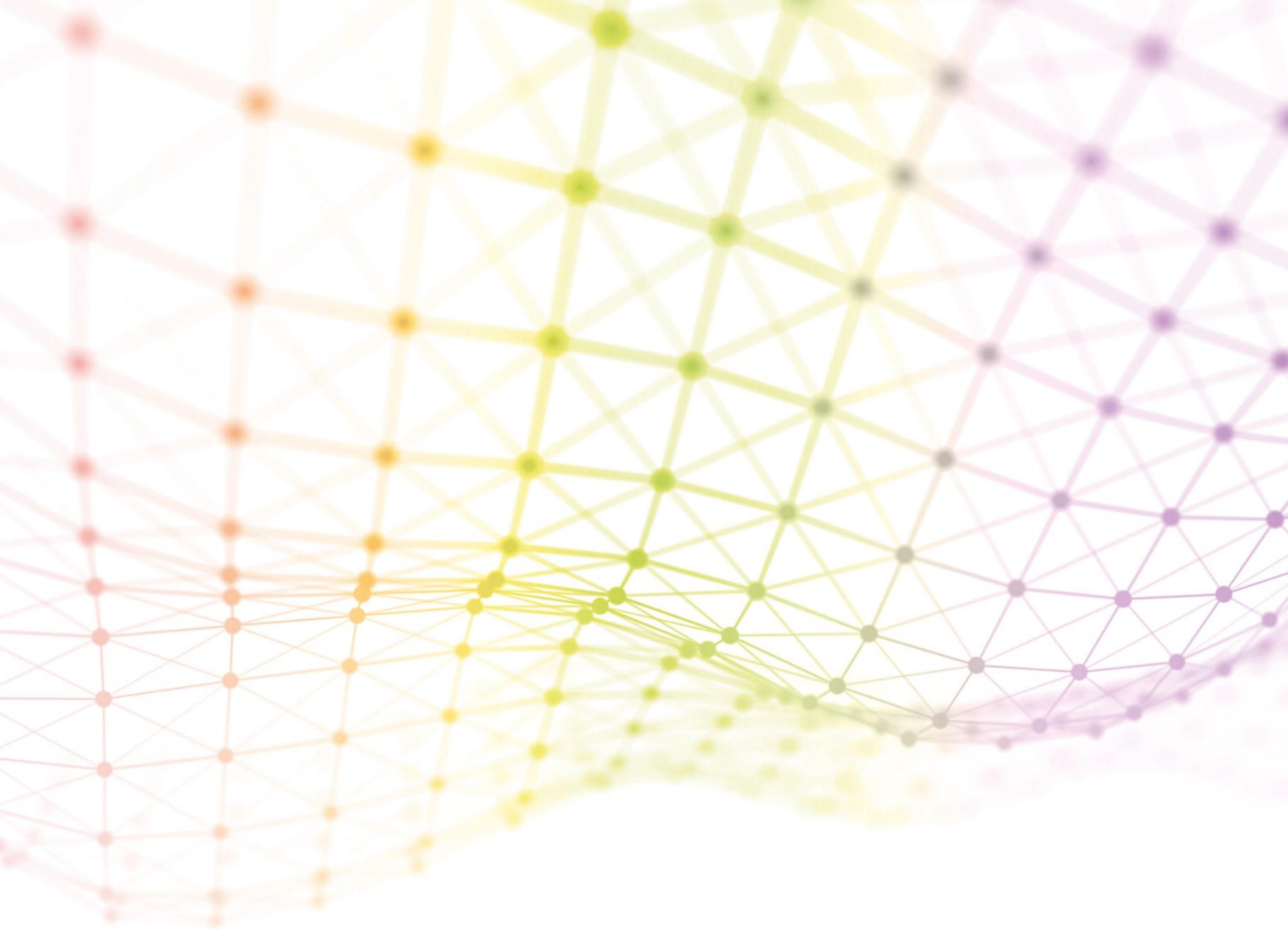
Method	Summary	Data quality		Wider considerations	Recommendations
		Pros	Cons		
(2) Questionnaire-based approaches					
Conventional questionnaire	• A series of questions about life events, sequentially, with respondents required to recall events from the most recent to the most distant or vice-versa. • Frequently requires respondents to manually input dates associated with specific events. • To aid event recall, they can incorporate summary tables with information from previous responses in the survey questionnaire or previous interviews.	• Easier to program than calendars. • Validation checks can be incorporated to ensure consistency. • Summary tables can contribute to aid visual recall by the visual display of several domains over time.	• Questionnaire-based approaches tend to produce less accurate and consistent data than event calendars, due to the lack of visual aids and cues for event recall. • Some date input formats can require significant effort from respondents attempting to find the correct date. • Displaying information about sensitive domains on summary tables can trigger concerns over privacy issues. • Response burden is not necessarily lower than for EHCs/LHCs.	• Questions requiring the manual input of dates can be difficult for some respondents. Different methods of data input can be used depending on the proximity of the required dates and the availability of a graphical layout. • Summary tables are relatively easy to program and implement (compared to EHCs/LHCs) and can be adapted for display in smaller screens if required. • Displaying information in summary tables requires processing information from prior responses.	• Questionnaire-based approaches could be effective only in certain contexts, especially for collecting information about non-sensitive life events in short time spans. • Date input can be facilitated by list layouts (when dates are in the proximity of the present date), or calendar layouts (for dates removed from the present date). When not using graphical interfaces, a pre-coded list of months might be more effective than providing text entry boxes for months and years. Device compatibility must be ensured in all cases. • There is no evidence that summary tables are as effective to aid event recall as retrospective calendars.

Method	Summary	Data quality		Wider considerations	Recommendations
		Pros	Cons		
(2) Questionnaire-based approaches					
Dependent interviewing - - <i>Proactive</i>	• A series of questions about changes in a specific life domain during the period between two consecutive interviews (or wave) of a longitudinal survey. • Respondents are reminded of their previous answer before being asked to update their status. • Information from previous waves is fed forward to tailor the wording and routing of questions to the situation of the respondent, or to include automatic edit checks during the interview.	• Relatively easier to implement without significant programming efforts (compared to LHCs/EHCs). • Respondents are asked to engage in recognition and reconciliation of information, which can be less cognitively challenging than information recall. • It has been shown to reduce spurious changes in response over time, seam effects, and respondent burden.	• Questionnaire-based approaches tend to produce less accurate and consistent data than event calendars, due to the lack of visual aids and cues for event recall. • Only suitable for longitudinal surveys in which prior information about the participant is available. • Presenting the information to the respondent may serve to suppress the reporting of change due to satisficing behaviour.	• There are still methodological discussions about which questions should be used. Some studies suggest that reminding respondents of their previous answer and then asking “is that still the case?” produces the most accurate data. Other studies have found that respondents are more likely to report a change in their status when they were asked “has this changed?” than with the earlier mentioned question. • To preserve confidentiality and data security it must be ensured that information from previous waves is displayed to the right respondent.	• This method is widely used for longitudinal surveys collecting data about the period between two consecutive interviews (waves). • Its maximum effectiveness is achieved for collecting event histories.
Dependent interviewing - - <i>Reactive</i>	• A series of questions about changes in a specific life domain during the period between two consecutive interviews (or wave) of a longitudinal survey. • Respondents are asked about their status without reference to the prior answer. If the answer indicates a change in status, a follow-up question is triggered to check whether this change in status is correct.	• Relatively easier to implement without significant programming efforts (compared to LHCs/EHCs). • They can reduce response burden, as not all respondents will need to be asked every follow-up question.	• Questionnaire-based approaches tend to produce less accurate and consistent data than event calendars, due to the lack of visual aids and cues for event recall. • Only suitable for longitudinal surveys in which prior information about the participant is available. • As follow-up questions are asked only if certain predefined conditions are met, there is a risk of under-reporting of events.	• The conditions that trigger the follow-up questions must be carefully studied to avoid under-reporting of events. • To preserve confidentiality and data security it must be ensured that information from previous waves is displayed to the right respondent.	• This method can be used for longitudinal surveys collecting data about the period between two consecutive interviews (waves). • Its maximum effectiveness is achieved for collecting information about economic variables, including personal income and financial situation.

Method	Summary	Data quality		Wider considerations	Recommendations
		Pros	Cons		
(2) Questionnaire-based approaches					
Event-triggered data collection	- Participants are asked a series of “Yes/No” questions about whether they have experienced any of a list of life events in the period between the last and the current interview (wave) in a longitudinal survey. - If the answer is positive, they are then asked which events they have experienced and then routed into modules of follow-up questions for each reported event.	- Relatively easy to implement without significant programming efforts. - They can reduce response burden, as participants will only be asked questions about the life events they marked. - Early trials have reported positive results with low levels of attrition and drop-outs and high data quality.	- Questionnaire-based approaches tend to produce less accurate and consistent data than event calendars, due to the lack of visual aids and cues for event recall. - Only suitable for longitudinal surveys in which prior information about the participant is available.	This is a relatively new and innovative method, and, to date, it mostly concerns data collection of inter-wave events. Further work is required to determine how it can be integrated with event history questions in annual interviews.	This method can be used for collecting data about inter-wave events in longitudinal surveys.

3 Reference

Domarchi, C., Maslovskaya, O., Calderwood, L. & Brown, M. (2025) Retrospective measurement of life events in online self-completion surveys: Evidence Review. *Survey Futures Report 4*. Available at: <https://surveyfutures.net/wp-content/uploads/2025/04/report-4-retrospective-data-evidence-review.pdf>



University of Essex



University of
Southampton



Economic
and Social
Research Council

NCRM NATIONAL CENTRE FOR
RESEARCH METHODS

Office for
National Statistics

UCL

WARWICK
THE UNIVERSITY OF WARWICK

MANCHESTER
The University of Manchester

CITY
UNIVERSITY OF LONDON
UNIVERSITY OF LONDON

**National Centre
for Social Research**

LSE LONDON SCHOOL
OF ECONOMICS AND
POLITICAL SCIENCE

Uster University

Unil
UNIL | Université de Lausanne

Ipsos

verian
Formerly Kantar Public

www.surveyfutures.net