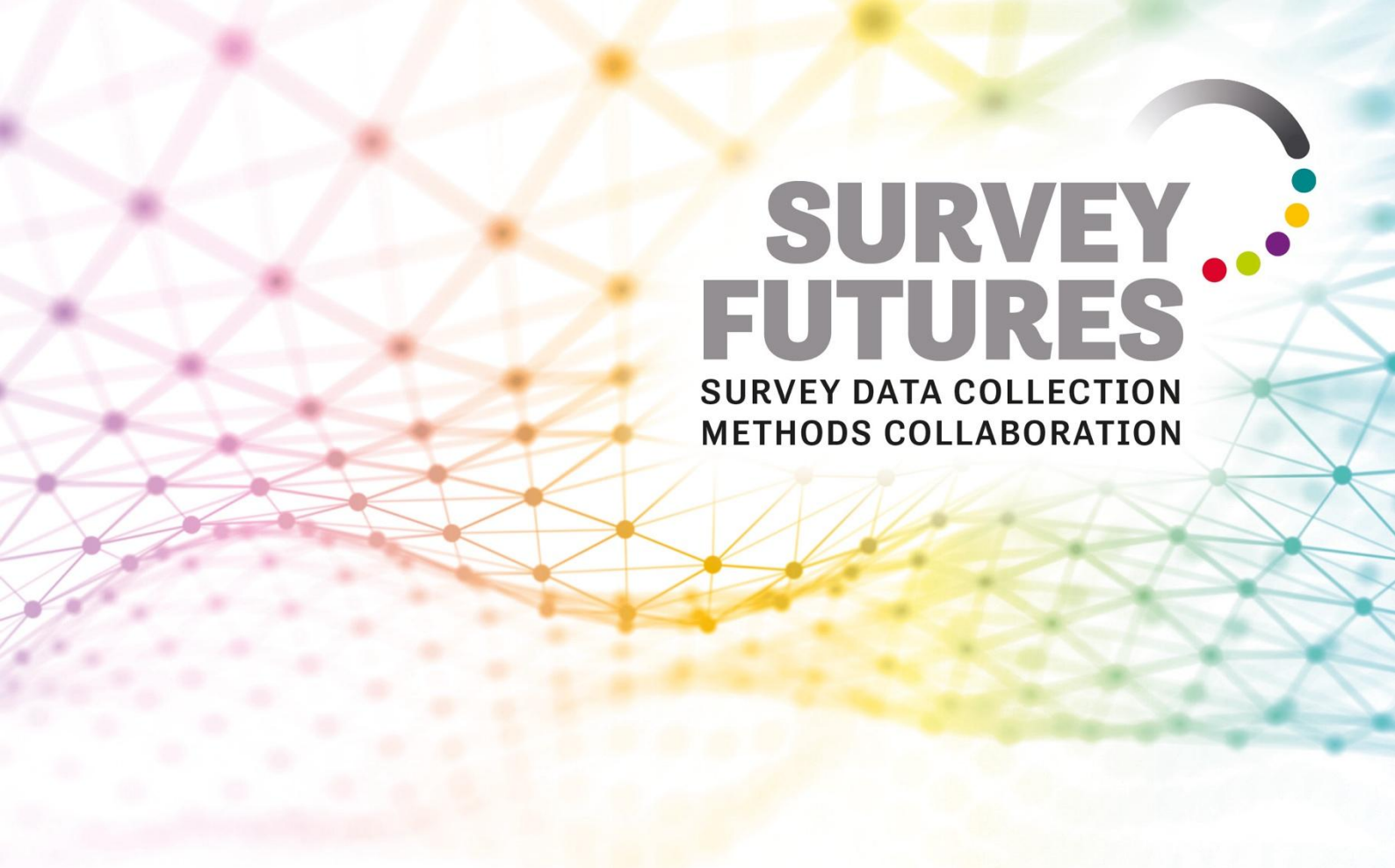




SURVEY FUTURES

**SURVEY DATA COLLECTION
METHODS COLLABORATION**

Report 19: Collecting consent for administrative data linkage in online self-completion surveys: Evidence review

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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.

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Executive Summary

- Linking survey data with administrative records can substantially enhance data quality, reduce respondent burden, and expand analytical potential. Participants' consent is generally required to link survey responses to administrative records. However, obtaining consent can be challenging in practice.
- A key challenge is that many respondents decline consent, which can introduce bias and limit the usefulness of linked datasets. This issue is particularly pronounced in online surveys, where consent rates are consistently lower than in interviewer-administered modes. As web-based data collection becomes more common, achieving high-rates of consent is becoming an increasingly important yet challenging task for survey practitioners.
- This review aims to provide an overview of how consent for data linkage is collected in UK web-based and mixed-mode social surveys. It examines how consent requests are designed and implemented, drawing on the literature to identify key design components that may influence respondents' decisions. These include the type of data requested, question placement, request length and readability, framing, and the use of incentives.
- The review of UK studies reveals a high degree of consistency in current practice. Most surveys adopt an opt-in explicit consent model and take a similar approach to implementation characterised by several common features. First, additional explanatory materials are typically provided, often as leaflets accompanying survey invitations or as dedicated webpages. Second, respondents are given a clear introduction to the data linkage process, including its purpose, the data to be shared, the organisations involved, and the nature of the information requested. Third, consent questions are generally placed at the end of the questionnaire, with one question per data source; when multiple linkages are requested, these are presented sequentially without interruption. Finally, while wording varies across surveys, the core content remains consistent: consent requests aim to convey essential information concisely while avoiding overload, with optional materials and contact details available for respondents seeking further information. Notably, there are important exceptions to this approach, particularly among some government surveys and surveys conducted by the Office for National Statistics, where explicit opt-in consent is not always required and consent to linkage may instead be embedded within general survey participation.
- Despite consistent and longstanding evidence of the large differences in consent rates between self-administered and interview-administered modes, this review does not find evidence of meaningful change in how consent is requested in online and mixed-mode surveys. As a result, mode differences persist. At the same time, the evidence base on how to effectively improve consent rates in web surveys remains limited, although it is gradually expanding.
- There is currently no strong, consistent body of academic evidence to guide practitioners on how to optimise consent requests in online settings. Addressing this persistent challenge may therefore require more innovative approaches. Potential strategies include the use of incentives, the exploration of opt-out consent models where appropriate, and targeted follow-up of initial non-consenters. Strengthening

the evidence base through further experimental research will be critical to improve consent rates and maximising the value of data linkage in an increasingly digital survey landscape.

1. Introduction

1.1 Overview

In today's increasingly digital society, the proliferation of diverse data sources presents new opportunities for social research. Administrative data, that is data held by government department and agencies, has attracted significant investment in recent years (e.g., Administrative Data Research UK, n.d. and Health Data Research UK, n.d.), with efforts focused on bringing together data across multiple administrative agencies, organisations, and service providers to unlock opportunities for cutting-edge, impactful research. Although these data have many benefits for research, they lack the rich contextual data that can be collected from social surveys. To maximise the value of both administrative data and survey data, **data linkage**—the process of integrating survey data with existing administrative datasets—has gained increasing prominence (Sala, 2018; Jäckle et al., 2022). In the UK, this has been supported by major investments such as the UK Longitudinal Linkage Collaboration (UK Longitudinal Linkage Collaboration [UK LLC], n.d.), which has enabled administrative data linkages on a large number of longitudinal studies.

Data linkage offers several advantages. By merging detailed and often more accurate external data with survey responses, it can reduce costs, lessen respondent burden, and mitigate common issues such as measurement error and recall bias (Calderwood & Lessof, 2009; Thornby et al., 2018). It also holds the potential to expand the analytical scope of surveys by incorporating variables that would be difficult or costly to collect via traditional questionnaires (Benzeval et al., 2020). For longitudinal surveys, administrative data can continue to be linked when respondents are lost to follow-up or choose to no longer take part.

Successful data linkage could potentially have a substantial impact on survey design and implementation. First, it could allow for shorter questionnaires by replacing or supplementing self-reported data with administrative records. This not only reduces respondent fatigue but also improves data quality. Second, administrative data often provide more precise and longitudinally consistent measures than survey responses, opening up new avenues for robust, policy-relevant research. Finally, shorter and more focused surveys are likely to lower operational costs, enhancing overall efficiency.

Given these benefits, data linkage has become a major focus in the social science research community, with an expanding body of literature addressing how best to implement it (e.g., Al Baghal, 2016; Beuthner et al., 2024; Jäckle et al., 2021; Jenkins et al., 2008; Lynn, 2009; Sala et al., 2014). Yet, despite its promise, important methodological and practical challenges remain (Sakshaug, 2018).

Most surveys that link respondents' survey data to administrative records rely on an explicit opt-in consent process. Obtaining this consent remains one of the main practical challenges in survey-based data linkage (Sakshaug, 2018).

Although asking for consent might appear straightforward, it is a complex process that requires careful consideration (Sala, 2018). In many surveys, a substantial share of respondents decline to provide consent, introducing potential biases. Empirical studies have documented systematic differences between consenters and non-consenters, which can

compromise the representativeness of linked datasets (Al Baghal et al., 2014; Jäckle et al., 2021; Sala et al., 2012; Peycheva et al., 2021).

The effectiveness of consent requests can be impacted by multiple factors, including timing of the request, the number of consents requested, the phrasing and framing of the request, and whether the emphasis is placed on the benefits of consenting or the potential drawbacks of refusal.

While much of the existing research has focused on interviewer-administered surveys, the landscape of data collection is shifting. Increasingly, survey organisations are adopting mixed-mode designs, with web-based surveys becoming more prominent in both longitudinal and cross-sectional studies (Couper & McGonagle, 2019). This shift has critical implications for data linkage, as evidence consistently shows that respondents in web surveys are less likely to consent compared to those in interviewer-administered settings. This presents a growing concern for researchers seeking to maintain high consent rates in an evolving survey environment.

1.2 Consent to data linkage in online surveys

Recent empirical research has consistently demonstrated significant disparities in consent rates for data linkage across different survey modes, particularly between interviewer-administered and self-administered formats.

For example, in the *Next Steps Age 25 Survey*, participants were asked to consent to link their survey responses with administrative data from nine different agencies. The study employed a sequential mixed-mode design: respondents were initially invited to complete the survey online, followed by telephone and then face-to-face modes for non-respondents. Consent rates, defined as whether participants agreed to any of the consent requests, varied substantially by mode: 69% in the web survey, compared with 90% in telephone interviews and 89% in face-to-face interviews (Thornby et al., 2018). A study conducted in the German *Legitimation of Inequality Over the Life Span* (LINOS) panel survey involved participants being randomly allocated to web or face-to-face data interviews which included a consent question seeking permission to link federal employment records. A dramatic difference in consent rates was observed between web responders (53.9%) and face-to-face responders (93.9%) (Sakshaug et al., 2017).

This pattern is further supported by findings from the *Understanding Society Innovation Panel* (IP), a mixed-mode survey in which participants were randomly allocated to web-first or face-to-face-first treatment groups. Jäckle et al. (2022) found that respondents completing the survey online were significantly less likely to consent to data linkage to administrative tax records (42%) than those interviewed face-to-face (73%). These results replicate earlier findings reported by the same authors using earlier waves of the Innovation Panel (Jäckle et al., 2021).

To explain these persistent mode differences, Jäckle et al. (2022) proposed five key hypotheses:

1. **Clarification and reassurance:** Interviewers can clarify the nature of the consent request and provide real-time reassurance about data confidentiality, potentially increasing respondent trust.
2. **Social pressure:** The presence of an interviewer may invoke a sense of social obligation, leading to greater acquiescence due to perceived social norms.
3. **Cognitive shortcuts:** Web respondents may complete surveys more quickly, skim or skip information, and make faster, less deliberative decision, sometimes overlooking critical details about data linkage.
4. **Privacy concerns:** Online respondents tend to have higher concerns about data security and privacy, which may reduce their willingness to consent.
5. **Device limitations:** The device used, particularly smaller screens on smartphones, may affect how well respondents read and comprehend consent information, although evidence on this is mixed.

The authors' findings support several of these explanations. Specifically, online respondents demonstrated greater concerns about data privacy and were less likely to engage with supplementary information. They also made quicker decisions about whether to consent. While differences in understanding were observed, these did not appear to influence the final decision. Notably, the device used and the availability of interviewer support were not significant factors, as respondents rarely sought additional clarification. Importantly, the authors conclude that the 30% difference in consent rates between web and in-person interviews is a causal impact of mode and is not caused by respondents with different characteristics being more or less likely to take part in the two modes (selection effects).

Based on this evidence, Jäckle et al. (2022) concluded that the presence of an interviewer plays a crucial role in securing cooperation and improving consent outcomes. Their findings align with earlier research on interviewer effects and the “foot-in-the-door” phenomenon, where social dynamics and interpersonal interaction encourage compliance (Bowling, 2005).

Further evidence of the importance of interviewers comes from Korbmacher & Schroder (2013), who found that in face-to-face interviews, interviewer characteristics accounted for a substantial proportion of the variation in respondents' propensity to consent to data linkage, highlighting the influential role interviewers can play in shaping consent decisions. In self-completion interviews participants do not have access to this support.

Overall, the literature makes clear that collecting consent for data linkage is significantly more challenging in self-administered modes. As the use of web surveys becomes increasingly widespread, addressing this challenge is vital for the broader adoption of data linkage strategies. The absence of an interviewer removes a key mechanism for building trust, clarifying information, and encouraging cooperation—factors that are especially important when seeking consent for complex processes such as administrative data linkage.

1.3 Objectives and structure of the review

The aims of this review are to provide an overview of the evidence on factors influencing consent to administrative data linkage, with a particular focus on online surveys, and to describe current practices for collecting consent in UK web surveys. Specifically, it focuses on large-scale, probability-based social surveys that request consent online either in unimode

web surveys or mixed mode surveys which make extensive use of the web. The review examines how these consent requests are designed and implemented, highlighting key features and common approaches across major studies. In doing so, it offers readers a clear understanding of how the collection of data linkage consent is operationalised in the online survey context.

We focus on surveys where an 'opt-in' approach to consent to data linkage is taken, that is respondents are required to actively respond to the consent request by indicating 'Yes' or 'No', as this is the standard approach used in most social surveys and because this is usually required by data controllers in order to enact the linkages. However, some surveys have used an unconsented or 'opt-out' approach to consent, whereby consent to linkage is either not required or embedded in consent to participate in the survey. This is most common where the survey sponsor is also the data controller of the administrative data or there is some other reason why consent is not needed. For example, Office for National Statistics do not require consent to link administrative data to their surveys, and a number of other government departments embed consent to linking administrative data into consent for survey participation e.g. Department for Education, Department for Work and Pensions. This approach is also common in large scale biomedical studies e.g. Our Future Health. Other major surveys are also considering adopting this approach, for example the ESRC-funded Early-Life Cohort Feasibility Study experimentally tested this embedded approach alongside the 'opt-in' approach (Calderwood et al., 2025). In the opt-out arm of the Early Life Cohort Feasibility Study, participants were told that information from their health, education, economic and social care records would be added to their survey responses and were instructed to contact the study team if they did not want one or more of these linkages to take place (Ipsos, 2023; Calderwood et al., 2025).

Before presenting the empirical evidence, the review summarises relevant academic literature on the design of consent requests, outlining factors that influence respondent decisions. We draw where relevant on evidence from international studies and surveys conducted by interviewers. The review aims to support researchers and practitioners interested in developing effective consent strategies for web-based surveys.

2. Design of the consent request

When implementing consent requests for data linkage in web surveys, survey practitioners face a range of design decisions. This section reviews the empirical literature that explores how different design elements influence consent rates. While the focus is on self-administered web surveys, relevant findings from other modes are included where informative.

2.1 Data type

A consistent finding in the literature is that consent rates vary depending on the type of data being requested for linkage. In the *Next Steps Age 25 Survey*, for instance, participants were asked to consent to link their responses with data from nine different administrative sources. Overall, the total consent rates (including all modes) varied widely, ranging from around 55% for administrative tax records (HMRC) to 70% for educational records (DFE). The lowest response rates were for economic records (DWP, HMRC) and for consent to the student loan company (SLC) (Thornby et al., 2018). Edwards and Biddle (2021) found that respondents in an online panel were less likely to consent to linking income support data (19.7%) compared to health (35.6%) or education records (40.9%). Similarly, evidence from Understanding Society showed variation across linkage domains, with consent generally higher for health and education records and lower for economic records, such as tax and benefits data (Jäckle et al., 2021). These findings suggest that the perceived sensitivity or intrusiveness of the data source plays a significant role in consent decisions.

2.2 Question placement

The optimal moment in a questionnaire to ask for consent is another key aspect that has been investigated. Findings on question placement are mixed. Sakshaug et al. (2013) found that asking for consent at the beginning rather than the end of a telephone survey increased consent rates, while Sala et al. (2014) found higher consent when the request was placed immediately after a relevant benefits module rather than at the end of the questionnaire. Sakshaug et al. (2019), using experimental data from both a telephone and a web survey, found that placing the consent request at the beginning of the survey was effective at increasing consent rates. For the web surveys, the consent rate was 83.1% when the request appeared at the beginning compared to 71.5% when placed at the end, while the telephone survey showed corresponding rates of 89.1% and 73.6%. These findings were recently mirrored by Jäckle et al. (2024), who also found a positive association between early placement and consent rates (68.9% consent rates for late placement and 75.4% for early placement). An earlier study by Sala et al., (2014) found that placing consent questions at the end of a set of questions on related topics (e.g. asking for consent to link health records after asking questions about health) was more effective than asking consent at the end. In a UK web-survey experiment, Burton et al. (2024) found that asking for consent early increased consent by 3.4 percentage points compared with asking after related questions and by 7.2 percentage points compared with asking later in the survey. However, early placement produced a slightly higher break-off rate at the consent questions (4.1%, compared with 2.7% for placement after related questions and 2.1% for late placement). This suggests a potential trade-off between increasing consent and retaining complete interviews.

When multiple consent requests are made, Walzenbach et al. (2023) found that asking for NHS consent first had a “foot-in-the-door” effect – for example, consent to BEIS data rose from 47% to 54% when NHS consent was asked first. This suggests that placing the request with the highest expected consent rate first may encourage respondents to agree to additional requests. However, their study used data from two different experiments, and this effect was not observed in the second experiment. Walzenbach et al. (2023) also looked at how multiple consent requests should be presented, comparing requests shown sequentially on separate pages, together on a single page with a separate response for each linkage, and as one combined request. They found no substantial differences in overall consent rates across the three formats. In a similar experiment where several data linkages were requested, Beuthner et al. (2024) found that the first consent request was always found to be the most successful one and consent rates gradually decreased with each subsequent request, regardless of data type – with predicted probabilities of about 46% for questions asked first and 22% for those asked second. When looking across panel waves rather than placement within a single interview, Eisnecker and Kroh (2017) found no significant difference in consent rates when a linkage request was first introduced in wave 1 rather than wave 2, and no significant increase in subsequent panel attrition from asking in the first wave.

2.3 Request length, Readability, or Format

The length and complexity of the consent request are also important design considerations. Edwards and Biddle (2021) experimentally compared long and short versions of a consent request in an online panel. While the short version yielded a slightly higher consent rate (28.4% vs. 26.6%), the difference was not statistically significant. In contrast, Bradford et al. (2021) found that a shorter request significantly increased consent rates.

The effect of question format on consent decisions and respondents’ understanding of a smart meter linkage consent request was investigated in the Understanding Society Innovation Panel. Consent rates were slightly higher when key information was presented in bullet-point format, with the remaining information provided in help text (57%), compared with when the full information was presented either in bullet-point or paragraph format (both approximately 55%). However, these differences were not statistically significant. Question format did have a significant effect on objective understanding: respondents answered an average of 1.9 out of four knowledge-test questions correctly when only key information was presented in bullet points, compared with 1.7 when the full information was presented in bullet-point or paragraph format (Jäckle et al., 2026).

Researchers have also tested whether simplifying consent requests to convey only essential information can influence consent rates. Jäckle et al. (2024) found that although simplifying the wording of a data linkage consent request increased objective understanding of the request, this did not translate into higher consent rates. Jäckle et al. (2024) also found that describing the organisation holding the administrative records as a “trusted data holder” and displaying a data-security icon increased consent from 51% in the control group to 55.7%, without significantly affecting respondents’ understanding or confidence in their decision.

Findings from the Understanding Society Innovation Panel also suggest that personalising the request may be beneficial. Among web respondents, adding a photograph and personal

message from the study director increased consent to HMRC linkage from 41.6% to 47.0%, compared with presenting the standard consent request alone (Vine et al., 2023).

Another recent experiment tested whether interviewer presence could be partly replicated online by embedding a prerecorded video of an interviewer reading the consent request. Consent to linkage with Financial Conduct Authority data was significantly higher when the request was presented by video rather than as on-screen text, increasing from around 50% to 60% (Vine et al., 2026). The experiment also tested whether providing additional information about the research value of linked data affected consent. This did not significantly increase consent overall, but the effect was larger when the information was delivered verbally: face-to-face consent increased from 66% to 74%, while video consent increased from 57% to 63%, compared with little difference online when respondents read the information themselves (49% to 50%). This suggests that respondents may be more likely to notice and respond to additional information when it is presented verbally rather than in text.

2.4 Framing

The way in which the consent request is framed has been one of the most widely explored factors in the literature but findings are mixed. Pascale (2011) experimentally varied whether a consent request emphasised improved data accuracy, reduced data-collection costs or reduced respondent burden. Consent was high overall (84%) but did not differ significantly across the three versions. In a telephone survey, Kreuter et al. (2016) found that a loss-framing approach which emphasised the consequences of not consenting was more effective at increasing consent rates compared to gain-framing (66.8% vs. 56.1%). However, Sakshaug et al. (2015) reported that this effect could not be replicated and found no significant main effect for the gain-loss framing on consent (92.5% for gain-framing and 91.2% for loss-framing).

In the web survey context, Sakshaug et al. (2019) found that loss-framing was effective in increasing consent rates, showing an 11% increase over gain-frame if the request is made towards the end of the survey. Other framing approaches have shown mixed results. Sakshaug and Kreuter (2014) reported a six-percentage-point increase in consent rates for linking web survey responses to administrative records when a time-saving framing was used instead of a neutral framing. Conversely, Beuthner et al. (2024) found no difference in consent rates between requests made using a time-saving framing and requests made using a framing that emphasised the scientific benefits of data linkage.

2.5 Incentives

Incentives are widely used to increase overall survey participation, but their effect on consent to data linkage is less well understood. Only one study to date has directly assessed this in the context of a web survey. Beuthner et al. (2024) compared two experimental groups—one offered an incentive for participation in the survey overall and one not—and found no statistically significant difference in consent rates. This limited evidence suggests that while incentives may boost survey response rates generally, they may not necessarily influence willingness to consent to data linkage for those who take part. However, to our knowledge, the direct impact of offering an incentive conditionally on providing data linkage consent has not been tested.

3. Collecting consent for data linkage online in the UK

Tables 1-8 summarise the evidence from major surveys in the UK which have collected online consent for linkage to administrative records either in stand-alone web surveys or in mixed mode surveys involving the web. We briefly describe the consent process and provide the consent rates achieved for each data source. The wording of the consent questions is provided in Appendix 1. Surveys where consent rates achieved by mode are not available are excluded.

Readers should be careful in drawing direct inferences between achieved consent rates and particular aspects of the designs, as each of the surveys have different target populations, designs, recruitment strategies, history, organisations, topics and consent requests. Additionally, in mixed mode surveys, there is typically selection into mode, which is a confounder for disentangling these mode difference.

Table 1
COVID Social mobility and Opportunities (COSMO) - Longitudinal study of students in year 11 in England in 2020/21

Wave / Year	Mode	Summary of design features	Consents requested	Online consent rate	F2F consent rate	Telephone consent rate
Wave 1 (2021) (Bolling et al., 2023)	Mixed mode - Web with in-person follow-up	Placement of consent question near end of questionnaire, Data linkage booklet provided with invitation FAQs on website Additional information within questionnaire	Department for Education (National Pupil Database and Individualised Learner Records)	73%	87%	
			National Tutoring Programme	70%	85%	
			Higher Education Access Tracker	69%	82%	
			Department for Work and Pensions	66%	80%	
			HM Revenue and Customs	65%	79%	
Wave 2 (2022) (Adali et al., 2023)	Mixed mode - Web with in-person and telephone follow-up	As above	Consents above where consent not provided in Wave 1	Not shown	Not shown	
			Universities and Colleges Admissions Service (UCAS)	69%	83%	88%
			Higher Education Statistics Agency (HESA)	68%	84%	89%
			Student Loans Company (SLC).	64%	81%	78%

Table 2**Next Steps - Longitudinal study of cohort born in England in 1989/90**

Wave / Year	Mode	Summary of design features	Consents requested	Online consent rate	F2F consent rate	Telephone consent rate
Wave 8 (2015) (Bailey et al., 2017)	Mixed mode - web with in-person and telephone follow-up	Placement of consent question near end of questionnaire, Data linkage booklet provided with invitation FAQs on website Additional information within questionnaire Video embedded in questionnaire and on website	NHS	55%	83%	77%
			Department for Education (National Pupil Database and Individualised Learner Records)	61%	86%	85%
			Universities and Colleges Admissions Service (UCAS)	58%	83%	84%
			Student Loans Company (SLC).	50%	76%	74%
			HM Revenue and Customs	46%	76%	71%
			Department for Work and Pensions	48%	78%	77%
			Ministry of Justice	54%	79%	78%
Wave 9 (2022) (Ipsos, 2024)	Mixed mode - web with in-person, telephone and video follow-up	As above	Consents above where consent not provided in Wave 8	Not shown	Not shown	Not shown
			NHS	45%	72%	45%
			Department for Education (National Pupil Database and Individualised Learner Records)	54%	40%	78%
			Universities and Colleges Admissions Service (UCAS)	53%	75%	40%
			Student Loans Company (SLC).	51%	72%	41%
			HM Revenue and Customs	38%	61%	42%
			Department for Work and Pensions	38%	65%	42%
			Ministry of Justice	43%	65%	40%

Table 3**Millenium Cohort Study - Longitudinal study of cohort born in the UK in 2000-2001**

Wave / Year	Mode	Summary of design features	Consents requested	Online consent rate	F2F consent rate
Wave 8 (2023)	Mixed mode with face-to-face and web	Placement of consent question near end of questionnaire, Data linkage booklet provided with invitation FAQs on website Additional information within questionnaire Video embedded in questionnaire and on website	NHS	58.5%	77.6%
			Department for Education	55.5%	77.1%
			Universities and Colleges Admissions Service (UCAS)	54.3%	77.2%
			Student Loans Company (SLC).	43.8%	68.1%
			HM Revenue and Customs	42.5%	74.4%
			NINO	59.7%	63%
			Criminal Justice Records	43%	66.7%

Table 4**Understanding Society – UK household longitudinal study ¹**

Wave / Year	Mode	Summary of design features	Consent requested	Online consent rate	F2F consent rate
Wave 8 (2016-7)	Mixed mode: Web with CAPI follow-up; CAPI with web follow-up. Note: Households least likely to complete online are allocated to CAPI-first, so the mode allocation is not random.	Contained in household questionnaire.	Energy use and energy efficiency (BEIS data)	72.2%	87.3%
Wave 10 (2018-9)	Mixed mode: Web with CAPI follow-up; CAPI with web follow-up. Note: Households least likely to complete online are allocated to CAPI-first, so the mode allocation is not random.	Adult interview.	Financial Conduct Authority data on credit records.	58.4%	59.9%

¹ Mixed-mode began at Waves 7–8; main consents were initially collected face-to-face. In later waves, consent was requested only from new entrants, participants newly aged 16+, or those without prior consent. One re-ask followed an initial refusal; after two refusals, no further requests were made. The consent group therefore includes both never-asked and previously refused participants. At waves 12 to 15, consent rates were not published separately by mode.

Wave 10 (2018-9)	Mixed mode: Web with CAPI follow-up; CAPI with web follow-up. Note: Households least likely to complete online are allocated to CAPI-first, so the mode allocation is not random.	Adult interview, for those who have not already given consent to DWP linkage (e.g., new entrants, or not consented once).	DWP benefit records	34.8%	49.6%
Wave 11 (2019-20)	Mixed mode: Web with CAPI follow-up; CAPI with web follow-up. Note: Households least likely to complete online are allocated to CAPI-first, so the mode allocation is not random.	Adult interview, for those who have not already given consent to HMRC linkage (e.g., new entrants, or not consented once).	HMRC tax records	44.1%	51.5%
Wave 11 (2019-20)	Mixed mode: Web with CAPI follow-up; CAPI with web follow-up. Note: Households least likely to complete online are allocated to CAPI-first, so the mode allocation is not random.	Adult interview, for those who have not already given consent to HESA linkage (e.g., new entrants, or not consented once).	Higher Education Statistics Authority	59.0%	62.5%
Wave 11 (2019-20)	Mixed mode: Web with CAPI follow-up; CAPI with web follow-up. Note: Households least likely to complete online are allocated to CAPI-first, so the mode allocation is not random.	Adult interview.	National Employment Savings Trust (NEST)	42.7%	44.9%

Table 5**Understanding Society Innovation Panel – Longitudinal Study of households in Great Britain**

Wave / Year	Mode	Summary of design features	Consents requested	Online consent rate	F2F consent rate
Innovation Panel Wave 8 (2015)	Mixed mode: Web with CAPI follow-up; CAPI with web follow-up. Note: Issued mode is randomly allocated, but there is non-compliance to mode (i.e., some web-first sample are interviewed in CAPI, and vice-versa).	Adult interview, for those who have not already given consent to DWP linkage (e.g., new entrants, or not consented once).	DWP benefit records	35.7%	76.2%
Innovation Panel Wave 9 (2016)	Mixed mode: Web with CAPI follow-up; CAPI with web follow-up. Note: Issued mode is randomly allocated, but there is non-compliance to mode (i.e., some web-first sample are interviewed in CAPI, and vice-versa).	Adult interview.	Financial Conduct Authority data on credit records.	47.7%	67.1%
Innovation Panel Wave 10 (2017)	Mixed mode: Web with CAPI follow-up; CAPI with web follow-up. Note: Issued mode is randomly allocated, but there is non-compliance to mode (i.e., some web-first sample are interviewed in CAPI, and vice-versa).	Adults. Consent was subject to an experiment. These figures combine all treatments.	Electoral register	33.1%	40.4%
Innovation Panel Wave 11 (2018)	Mixed mode: Web with CAPI follow-up; CAPI with web follow-up. Note: Issued mode is randomly allocated, but there is non-compliance to mode (i.e., some web-first sample are interviewed in CAPI, and vice-versa).	Adults. Consent was subject to an experiment. These figures combine all treatments.	HMRC tax records	42%	72.8%
Innovation Panel Wave 15 (2022)	Mixed mode: Web with CAPI follow-up; CAPI with web follow-up. Note: Issued mode is randomly allocated, but there is non-compliance to mode (i.e., some web-first sample are interviewed in CAPI, and vice-versa).	Adults. Consent was subject to an experiment. These figures combine all treatments.	HMRC tax records	42.5%	76.3%

Table 6**Science Education tracker – Cross-sectional study for young people aged 11-18**

Wave / Year	Mode	Summary of design features	Consents requested	Online consent rate
2023 (Hamlyn et al., 2024)	online	One question for the single data linkage procedure requested. Optional 'Help' button including information on why the data linkage is necessary. Follow-up questions for non-consenters	Department of Education	85.70%

Table 7**National Survey of Sexual Attitudes and Lifestyles (NATSAL) – Cross sectional study of adults aged 16 – 59 in Britain ²**

Wave / Year	Mode	Summary of design features	Consent request	Telephone consent rate	Online consent rate ³
4 (2022-2024)	face-to-face, phone, CASI/CAWI, online	Short request preceded by an introductory text highlighting the key elements of the process: the anonymity, the utility of the process and the capacity to withdraw the consent ex-post. An initial overarching consent agreement to all records of interest. If agreed, the questionnaire would follow with three separate and individual consent requests.	Health records from ONS	72%	38%
			educational records from ONS	72%	34%
			administrative and survey datasets from ONS	72%	35%

Table 8**Health Survey for England – Cross-sectional feasibility study**

Wave / Year	Mode	Summary of design features	Consents requested	Online consent rate
2020-2021 (NHS Digital, 2021)	online	An introductory text highlighting the consent request's main elements to be aware of: which data is going to be used, for what, who to contact for further information and the capacity to revoke the permission A single short question simply stating the data to be linked for each of the consent requests.	NHS Digital	80%
			Civil Registration Mortality Data	79%

² Natsal-4 adopted a multi-sample, mixed-mode design incorporating both probability and non-probability samples. The consent rates shown in the table refer to the probability sample. For the non-probability online panel, consent rates were 46% for linkage to education records and 44% for linkage to administrative records.

4. Conclusions and recommendations

This evidence review has sought to document current practices for collecting consent to administrative data linkage in online and mixed-mode surveys in the UK. To achieve this, the review has examined multiple high-quality surveys, including those led by academic institutions and major research agencies operating in the UK, detailing the key features of each approach.

Our review of existing practices reveals a notable degree of consistency across different surveys. The prevailing approach is characterised by an opt-in consent model and several common elements. First, additional materials explaining the data linkage procedure are typically provided. This often takes the form of a leaflet included with the survey invitation, though dedicated webpages are also common. Second, respondents are introduced to the data linkage process, outlining why it is necessary, what data will be shared, with which organisation, and what information will be requested from that organisation. Third, consent questions are consistently placed at the end of the questionnaire, with one question per data source being linked. When multiple linkages are involved, one request follows another, without breaks in-between. Fourth, although the wording of consent requests and process descriptions varies, the fundamental information remains consistent. Most consent requests aim to provide essential details concisely within the main questionnaire while avoiding information overload. For respondents who seek further clarification, contact details and optional additional materials are typically made available. Notably, there are important exceptions to this approach, particularly among some government surveys and surveys conducted by the Office for National Statistics, where explicit opt-in consent is not always required and consent to linkage may, for example, instead be embedded within a general survey participation request.

However, despite consistent and longstanding evidence of the large differences in consent rates between self-administered and interviewer-administered modes (e.g. Jäckle et al., 2021, Thornby et al., 2018), in this evidence review we have seen how throughout recent years the data linkage process in major online and mixed-mode surveys have not significantly changed, and these large differences remain. Related to this point, it is also important to acknowledge that while literature on collecting consent in surveys is large, literature on collecting consent in self-administered surveys is rather limited, albeit continuously growing. The current practice is rather homogenous: there is no consistent academically driven evidence to inform practitioners on how to do better – but that does not mean there is not a constant endeavour on how to do better. For the moment, the gap between interviewer-administered and self-administered modes persists and so does the necessity to conduct most of the surveys in the online context.

Nonetheless, despite this gap, current practice still achieves a moderate level of success in collecting consent, including in online surveys. However, the persistent difference in consent rates between interviewer-administered and self-administered modes remains a key methodological challenge. As outlined in the introduction, several hypotheses have been proposed to explain these differences (Jäckle et al., 2022). These include the possibility that interviewer-administered modes benefit from opportunities for clarification and reassurance, as well as the potential influence of social pressure from interviewer presence. Additionally, respondents completing online surveys may be more likely to rely on cognitive shortcuts,

resulting in faster completion and a greater likelihood of skipping consent requests. Privacy concerns may also be heightened in online contexts, and practical constraints—such as completing surveys on smaller devices—may limit engagement with explanatory materials.

Despite these plausible explanations, the evidence base for effective interventions remains limited. Research specifically focused on improving consent rates in web surveys is still relatively scarce. Looking ahead, addressing this persistent challenge may require exploring bolder approaches. For example, incentives for consenting to data linkage could be reconsidered, while carefully weighing ethical and budgetary implications. Video-based approaches may also hold promise. Both live video interactions and pre-recorded video explanations have the potential to provide some of the clarification, engagement, and reassurance typically offered by interviewers, while remaining compatible with web-based data collection.

Alternative consent designs, such as opt-out approaches where appropriate and feasible, may also warrant further investigation. Other possibilities include targeted follow-up with initial non-consenters, for example through callbacks or additional contact attempts designed specifically to address concerns about data linkage. Finally, advances in technology may open new ways to replicate the benefits associated with interviewer-administered modes. For instance, interactive elements, enhanced help features, or interviewer-like avatars could potentially provide clarification and reassurance within an online environment. While these approaches are exploratory, they highlight the potential for innovation in bridging the gap between survey modes.

Overall, persistent mode differences underline the need for continued methodological research and experimentation, and for online and mixed-mode surveys, significantly lower data linkage consent rates is a key concern. Strengthening the evidence base for self-administered surveys will be essential to improving consent rates and maximising the potential of administrative data linkage in an increasingly online survey landscape.

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Appendix 1. Wording of the consent requests.

The appendix provides the consent wording used in all surveys included in tables 1 to 8.

Appendix 1.1. COSMO

The questionnaire in COSMO Wave 1 was designed to ask consent for each data source individually, following one request after the other. The consent request started by briefly introducing the process:

We would like your permission to add information about your education, training and work held in administrative records maintained by various government departments and other agencies to the information we collect about you as part of the Horizons survey.

Followed by a summary on how the data linkage procedure was going to be carried:

Your name and address will never be seen by researchers, which ensures that no one can be identified from the data.

- To add this information, we first create a unique ID for you, a unique identifier which is a string of letters and numbers. We then securely send your unique ID and some personal details such as your name, sex, address and date of birth, to the relevant government departments and agencies. The unique ID allows us to identify your administrative records without identifying you.
- Your personal details are only used to find your administrative records. Your survey responses are not sent to these organisations.
- Once identified, the information from your records is sent back to the Horizons team with your unique ID only.
- The Horizons team then match your administrative information to your survey responses using your unique ID.
- This matched administrative and survey information will be used for research purposes only and under restricted access conditions.
- You can agree for us to add information from all, some, or none of the sources we ask about – it's your choice.
- We will add information from your past, present and future records, and we will collect it on an ongoing basis for the duration of the study – unless you tell us to stop.
- You can change any of your permissions at any time, without needing to give us a reason.
- The information about how you can change your permissions is on the survey leaflet as well as on the Horizons website.

Once the task was introduced and the process briefly explained, the data linkage consent request was asked sequentially. The questions began by clarifying which specific personal information would be sent to the data-holding organization - for instance in the example below, name, address, sex, and date of birth to the Department for Education. Following this, the exact nature of the data was detailed, such as the National Pupil Database and Individualised Learner Records, which would include respondents' academic performance information and educational pathway details.

These elements changed to adapt to every data linkage consent request.

We would like your permission to send your name, address, sex, and date of birth to the Department for Education (DfE) so your records can be identified and sent to the Horizons research team to be added to your survey information.

The DfE's National Pupil Database (NPD) and Individualised Learner Records include information about your participation and achievement in school and further education as well as details about the school, college or training centre you attended.

Are you willing to give this permission?

1. Yes
2. No

Appendix 1.2. Next Steps

For Next Steps (Wave 9), different text was displayed for respondents who had not previously consented to any of the requests. In the example below, we provide the text displayed to a respondent who previously did not consent to any of the requests.

The following questions are about adding other information from routine administrative records.

We have asked you questions about your health, education, income and the work you do and your experience with the Criminal Justice System. To make this information complete we would like to add some additional information about you from:

- **Health records** held by NHS Digital
- **Education records** held by: the Department for Education and the Higher Education Statistics Agency, the Universities and Colleges Admission Services (UCAS) and the Student Loans Company
- **Economic records** held by HM Revenue and Customs and the Department for Work and Pensions (DWP)
- **Police and criminal justice records** kept by the Ministry of Justice

The information in these records is more detailed than what we collect from you in the survey. Including these details will help us better understand your experiences and make the study an invaluable resource for researchers and policymakers, who use this information to improve public services.

Before proceeding, please ensure you have read the booklet '*Adding Other Information from Your Administrative Records*' [Link], which provides more details.

You can also learn more by watching our video: [Link].

Next, respondents were informed about the option to consent to data linkage, with emphasis on the voluntary nature of their decision and their ability to review and modify their permission at the end of the task. Additionally, they were provided with details on what data would be shared, how it would be handled, and its exclusive use for research purposes.

At the next few questions, you can choose whether or not to give us permission to add information about you from routine administrative records. There will be an opportunity to review and confirm your permissions at the end.

After the survey we will send you an email or letter confirming the details of the permission(s) you have given. You will be able to change these permissions at any time without giving us a reason.

With your permission we will securely send your name, sex, address and date of birth and a unique study identifier to the named government departments and agencies that hold your records. If they are available, we may also send your NHS and National Insurance numbers to help identify your records. The government departments and agencies only use your personal details to find your records and will then destroy them.

We will add information from these records on an ongoing basis unless you tell us to stop.

All information collected by Next Steps, including information from your administrative records is treated in strict confidence in accordance with the Data Protection Act and the General Data Protection Regulation (GDPR). This information is collected and used for research purposes only.

Before the actual consent request, an optional collapsible FAQ section was displayed on-screen, addressing questions about the usefulness of the linked data, the implications of data linkage, how the data would be handled, and the ability to revoke permission. Additionally, contact details were provided for respondents to ask further questions.

If you would like further information on any of the following select the question text to view each answer.

1. Why is the information added from health records useful?
2. Why is information added from education records useful?
3. Why is the information added from economic records useful?
4. Why is the information added from criminal records useful?
5. Have you asked me about this before?
6. What will happen if I give my permission?
7. How long will the permission last?
8. How long will you keep my data?
9. Can I change my permissions?

10. What will happen if my permission is withdrawn?

If you have any further questions, please refer to the '*Adding Information From Your Administrative Records*' booklet or contact Ipsos Freephone on [Number] or email [e-mail].

Once the task was introduced and all the relevant information was provided, the questionnaire followed by asking respondents to consent to the data linkage. There were a total of seven questions, one for each additional dataset to be linked. Each question also included a help screen, providing further information on the exact data kept by the data holder. In the example below, we show the question wording for the first request for consent.

Do you give permission for your name, address, sex, date of birth, and NHS number (if held), to be passed to NHS Digital so your records can be identified and sent to the Next Steps research team to be added to your study information, and used for research purposes only?

1. Yes
2. No

[Help screen]

What information will we add?

Records kept by NHS Digital include information about admissions or attendances at hospital (such as dates of admission, discharge or attendance, diagnoses received, treatments given, surgical procedures), visits to family doctor or other health professional (e.g. midwife), specific conditions (such as cancer or diabetes), and prescriptions given.

Finally, a confirmation question was asked, summarising all the decisions made by the respondent and allowing them to change their decision. After this question, respondents were asked where to best send them the confirmation, if via email or post.

The following statements summarise your permissions; please confirm that you agree with this summary:

I [do NOT give / give] permission to add information held by NHS Digital.

I [do NOT give / give] permission to add information held by the Department for Education and the Higher Education Statistics Agency.

I [do NOT give / give] permission to add information held by the Universities and Colleges Admission Service (UCAS).

I [do NOT give / give] permission to add information held by the Student Loans Company.

I [do NOT give / give] permission to add information held by HM Revenue and Customs.

I [do NOT give / give] permission to add information held by the Department for Work and Pensions (DWP).

I [do NOT give / give] permission to add information held by the Ministry of Justice.

- I have read and understood the information provided in the 'Adding Information From Your Administrative Records' booklet and have had the opportunity to ask questions.

- I understand that my name, address, sex, date of birth, NHS number and NI number will be passed to the respective organisations so that my records can be identified and sent to the Next Steps research team to be added to my study information, and used for research purposes only.

- I understand that my information will be treated in strict confidence in accordance with the Data Protection Act and the General Data Protection Regulation (GDPR).

- I understand that the Next Steps team will add information from my records on an ongoing basis and will only stop doing this if I withdraw my permission.

- I can withdraw any of my permissions at any time by writing to the Next Steps team using the email or postal address stated on the back of the 'Adding Information From Your Administrative Records' booklet (Link).

1. Yes, confirmed
2. No

Appendix 1.3. Understanding Society

In Wave 14 of the Understanding Society survey, consent request was asked as follows (example from the first request):

We would like to add information from your education record to your survey answers. This will create a more accurate picture of your life and experiences, and will be used for research and statistical purposes only. Your information is confidential and names and addresses will never be included in the results. We would like to link in information about your education to your survey responses on a yearly basis. If you decide that you no longer wish to take part in the study we will retain your education information up until that point. After this point we will make no further links. You can withdraw your consent at any time.

Please read this leaflet explaining what we would like to do: [\[Link\]](#)

In order to locate your education records we need to send the data holder some personal information. Do you give permission to pass your name, address, sex, date of birth and last school attended to The Department for Education or a contractor conducting the linkage? Once your education records have been added to your survey responses, we will remove all your personal information so that your answers are anonymous.

1. I have read the leaflet and am happy to give consent
2. I do not want to give consent

Appendix 1.5. Innovation Pannel

Part of an experimental study to evaluate the simplification of the process, in Wave 11, consent request was asked as follows:

We would like to add records held by HM Revenue and Customs, or HMRC, to the answers you have given in this study. If you agree:

- We will send HMRC your name, address, sex and date of birth so that they can identify the records they have about you. The HMRC records contain information about your current and previous employment, your income, National Insurance contributions and tax credits.
- We will not send HMRC the answers you have given in this study.
- HMRC will send us your records. These will contain an anonymous identification number but not your name, address, sex or date of birth.
- We will add the HMRC records to the answers you have given in this study. • We will make the combined anonymous data available for academic and policy research purposes only.
- Access to the data will be restricted and controlled, to make sure that researchers use the information responsibly and safely.
- This will not affect the way that you deal with HMRC in any way.

Please read this leaflet and look at this diagram for further information.

Do you give permission for us to pass your name, address, sex and date of birth to HMRC for this purpose?

1. Yes
2. No

Appendix 1.6. Science Education Tracker 2023

In the SET 2023, the question on consent to data linkage was worded as follows:

The Department for Education holds information about you and your education. This includes information about your ethnicity, schools, exams, special educational needs, and free school meals.

We would like to add this information to your survey answers to create a more accurate picture of your life and experiences. This information will only be used for research purposes.

All information is confidential: this means that your name and address will never be included in the results.

Can we have your permission to link this information to your survey answers?

1. Yes
2. No

The consent request specified the information that was required from the external data source and why this was important for the survey – i.e. to provide a more in-depth analysis of the respondents' academic life. The request also stressed the confidentiality of the procedure. Furthermore, a help button providing extra information was also included, if selected, respondents could see the following prompt:

We link survey data to administrative data such as exam results so that we do not need to collect all this information in the survey. Having more data about the individuals who take part in the survey helps the Royal Society and EngineeringUK to ensure that educational services can be planned around the needs of individuals from all types of backgrounds.

Appendix 1.7. Natsal

In the fourth edition of the Natsal survey, the consent request was worded as follows:

Please note the following important points:

- Linked data will be used as a resource by approved professional, academic and social policy researchers for research, educational and statistical purposes only. The information will be stored on a secure research server, provided under restricted access arrangements which make sure that the information is used responsibly and safely.
- Names and addresses will **never** be included in the research dataset, nor any published results, and so no individual will be identifiable from the research.
- The process for conducting data linkage can be seen in a flowchart here [link].
- You may withdraw your consent to data linkage by contacting NatCen Social Research on [telephone number] or [e-mail].

Do you consent to link your health, education or other administrative records to your survey answers? By answering yes, you will go on to confirm which type(s) of record linkage you consent to.

1. Yes
2. No

After the initial consent agreement, the questionnaire followed with three individual questions, each one asking for consenting with a specific data linkage. The example provided below shows the wording for the first consent request, regarding health records. Importantly, the wording does not specify the organisation in possession of the data but does mention which data is going to be shared with the holder of the data and for which use.

Please read the sentence below and indicate whether you consent to link your **health records** to your survey data.

I consent to NatCen Social Research passing my name, address, sex and date of birth to the organisations that hold **health information** in order for them to perform data linkage. I understand that information held in relevant datasets and managed by the organisations that hold **health information** may be used to provide information about my health and service use. I understand that this data will be used for statistical and research purposes only.

1. Yes
2. No

Appendix 1.8. Health Survey for England – Feasibility study

The HSE – Feasibility study consent request started by introducing the task and ensuring an informed consent decision, explaining what data will be accessed, the purpose of the data linkage, who will use the data, how the data is linked and the respondent's ability to withdraw the decision. Finally, additional contact information was provided.

We have asked you about your health. To make this information complete we would like to ask for your permission to add information from your medical and health records held by NHS Digital to the answers you have provided in the survey. If you agree, data accessed would be:

- Health information held by NHS Digital for primary care, in-patient/out-patient care, emergency care, cancer diagnosis and treatment, maternity care, community care, mental health, social care and diabetes treatment.
- Details held by NHS Digital about cause of death and date

This linkage allows research into how a person's lifestyle and experiences can have an impact on their future health. By doing so, we can create evidence to inform decisions to improve services and policies which affect all adults in England. Data will be used by the Health Survey for England (HSE) Research Team consisting of researchers at NatCen Social Research, UCL (University College London), and authorised individuals at NHS Digital. The data will be held under restricted access arrangements which make sure that the information is used responsibly and safely. Your identity will only be known to certain members of the NatCen and UCL research teams and authorised individuals at NHS Digital.

To link your data NatCen Social Research will pass your name, address, and date of birth to NHS Digital.

Access to the data for other qualified researchers can only be granted by NHS Digital's Data access Review Service (DARS). This information will be completely confidential and will be used for research purposes only by academic or policy researchers under restricted access arrangements which make sure that the information is used responsibly and safely.

You can cancel this permission at any time in the future by writing to: NatCen Social Research or calling [telephone number]. You do not need to give a reason to cancel this.

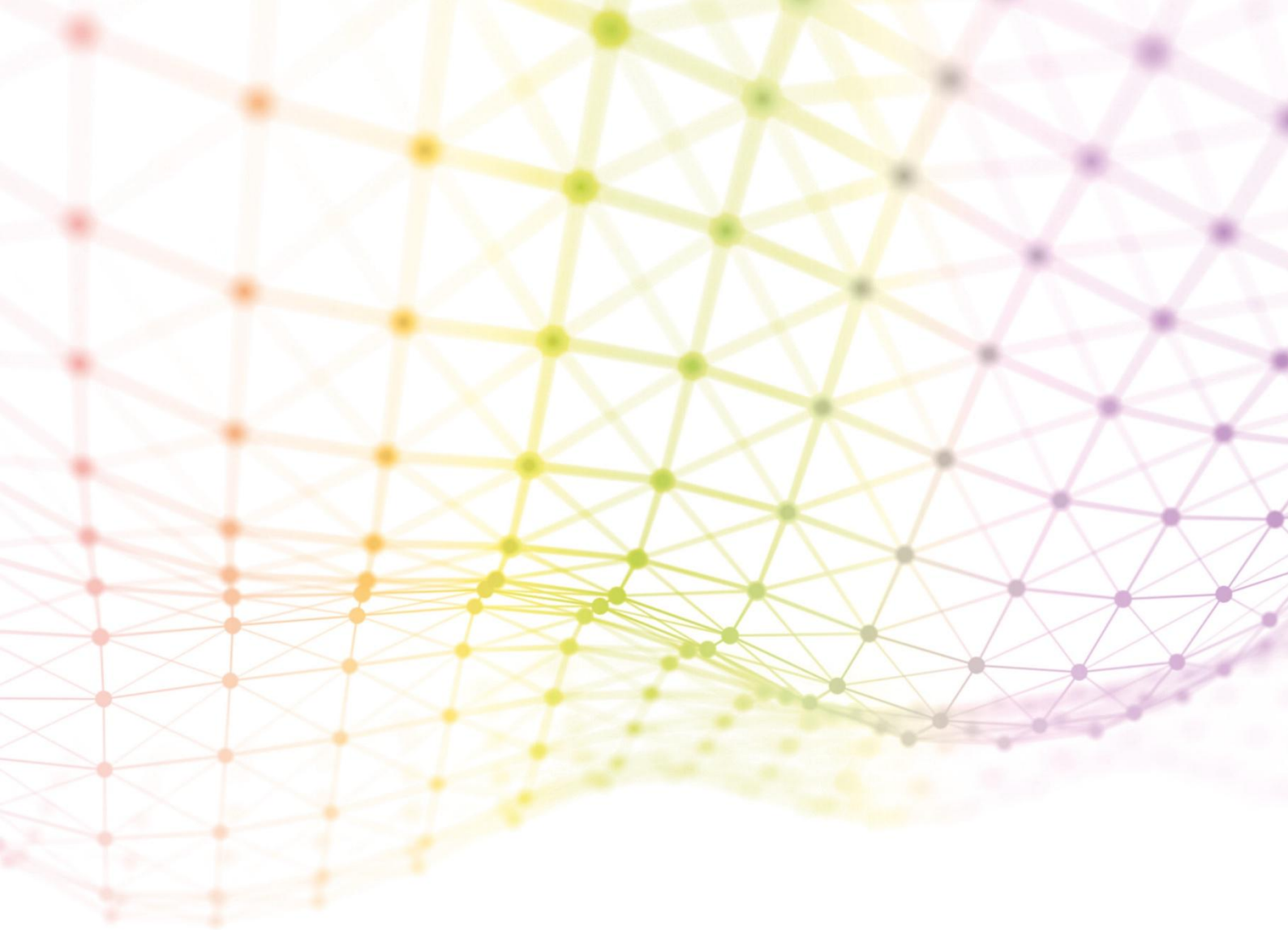
After this introduction, two questions followed. Each question asking for specific permission to link respondents' survey data to one of the records of interest. As the wording of the questions were rather short, we provide the only two questions on consent.

Do you give permission for your survey answers being linked to health records data? (For primary care, in-patient/out-patient care, emergency care, cancer diagnosis and treatment, maternity care, community care, mental health, social care and diabetes)

1. Yes
2. No

And do you give permission for your survey answers being linked to Civil Registration Mortality Data such as cause of death and date of death?

1. Yes
2. No



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Economic
and Social
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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

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