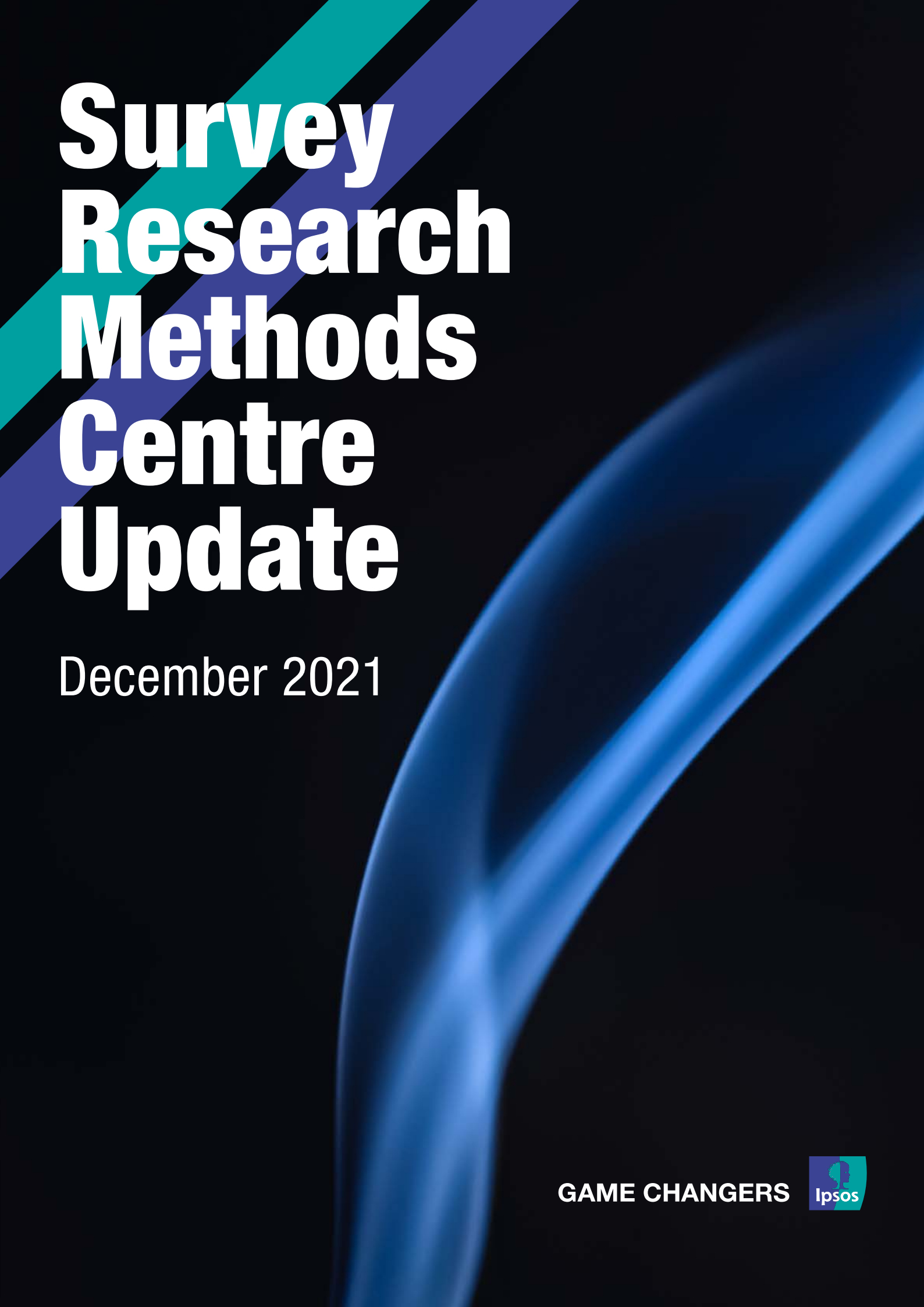
Survey Research Methods Centre Update

December 2021

GAME CHANGERS



Foreword

Welcome to the latest update from the Survey Research Methods Centre! This collection of articles, covering some of our recent methodological work, is aimed at those involved in conducting or commissioning high quality social policy-related survey research.

In this edition we focus on some of the "COVID-proof" methods that saw us through the pandemic, presenting case studies of how surveys can be adapted to work without face-to-face data collection, and several examples of how we continue to enhance the design of our push-to-web surveys through experimental testing. We also present articles covering innovations from the UK birth cohort studies and cognitive testing with children on sensitive topics.

Contributors:

Joanna Barry – Research Manager

Alex Bogdan – Associate Director

Andrew Cleary – Director of International Research Methods

Eileen Irvin – Research Manager

Tom Huskinson – Head of the Survey Research Methods Centre

Lucy Lindley – Associate Director

Anna Mackin – Research Manager

Madalina Radu – Research Executive, now Research Analyst at the Chartered Management Institute

Patten Smith – Ipsos MORI Senior Consultant

Contents:

Executive summary

This report presents the latest research from the Survey Research Methods Centre, covering transitioning surveys to online, experiments to optimise push-to-web surveys, methodological innovations from the UK birth cohort studies and conducting cognitive interviews with children on sensitive topics.

Transitioning existing surveys to online

The **British Election Study** was successfully completed as a push-to-web study following an abrupt halt to face-to-face fieldwork at the start of the pandemic. This survey is fielded shortly after each UK election and collects evidence on the public's voting patterns. Around half the planned interviews had been collected face-to-face when fieldwork was stopped, and, in an attempt to finalise the survey, all unused or non-finalised sample from the face-to-face phase was invited to complete the survey online or on paper (up to four mailings, with a paper questionnaire with the third mailing). Respondents were heavily incentivised on a sliding scale which increased with each mailing, up to £50, conditional on completion, on top of an initial £5 offered unconditionally.

Results were impressive: a sample size just short of the full planned number was achieved, with the overall response rate in line with the previous face-to-face surveys. Key survey measures were in line with the actual election results. This shows what can be achieved from a push-to-web survey given a large investment in incentivisation, albeit helped by the unprecedented circumstances of a full lockdown.

The **European Company Survey** collects data on workplace practices from businesses across the European Union. In the past the survey was conducted by telephone, as is the norm for most business surveys given a lack of sampling frames that give direct access to suitable informants. In the most recent survey, conducted pre-pandemic, the client Eurofound opted for a push-to-web approach, with telephone contact and online interviews.

The survey demonstrated that a push-to-web approach is feasible for a business survey across the European Union and United Kingdom, future-proofing the design against technological and societal changes which will most likely mean a purely telephone approach is less viable in the future. As expected, the response rate was lower than the telephone surveys of the past, given attrition at each response stage; however, little evidence was found of non-response bias.

Prior to the pandemic Ipsos MORI carried out a large-scale push-to-web survey of parents about childcare provision. Its aim was to explore the feasibility of collecting online data to complement, or even replace, data traditionally collected face-to-face via the **Childcare and early years survey of parents**, an annual cross-sectional survey with a complex 45-minute questionnaire. Response rates to the push-to-web survey of up to 23% were achieved, compared with 51% for the most recent face-to-face survey. While similar estimates were produced for simple, factual questions, greater differences were observed for questions relating to attitudes and intentions.

Optimising push-to-web surveys: experimental results

A key part of our work involves running experiments which, over time, help us optimise the design of our surveys. This is especially important for a relatively new method like push-to-web, made possible by the public's increasing acceptance of digital methods over recent years. A big focus has been on increasing the proportion of respondents who take up the online mode in a mixed-mode survey, given the benefits this affords to data quality and survey costs.

On the **Food and You 2 survey**, a UK general public survey that measures people's attitudes, behaviours, and knowledge concerning food safety and other food issues, we experimented with methods to increase the proportion of online responses in the sample. Most UK push-to-web surveys offer a paper questionnaire in one of the later reminders, as an alternative mode to online, given this reduces the non-response bias that can be associated with online push-to-web samples. However, there is value in increasing the proportion of responses collected online, given the

mode's ability to collect more complex and higher quality data than paper questionnaires.

In this experiment we found that we could substantially increase the proportion of online responses, and the overall response rate, by offering a £15 conditional incentive for early completion, compared with a baseline £10 conditional incentive for all respondents (and late respondents in the experiment). Survey costs were also increased, by about 5%, and so whether it is worth investing in an increased incentive for early completion will depend on the value attached to the consequential improvements in data quality.

Another major general public survey, the **GP Patient Survey**, collects information annually on patient experiences of GP and local health services in England, with around 700,000 interviews achieved each year. Unlike Food and You 2, for this survey we are able to access a high-quality sampling frame (all patients registered with the National Health Service) that includes name, address, mobile phone number and email address. The survey was originally designed exclusively as a postal survey given the high response rates historically delivered under this design, but has since incorporated the option to complete online, and over the years the proportion taking up the online mode had grown steadily to around one-fifth of all responses.

Recently, a new sample frame for the survey provided access to mobile numbers and email addresses for the first time, and a number of experiments were devised to test methods to encourage more participants to respond online. These included experiments which maintained the simultaneous paper and online mixed-mode offer but replaced some of the postal reminders with digital ones (SMS/email). Further experiments trialled sequential mixed-mode strategies, which is the more common push-to-web survey design, offering the paper mode at late¬r mailings to encourage more online responses.

The main findings of this extensive experimental programme were that:

- by replacing a postal reminder with a digital one, on a simultaneous mixed-mode survey, we were able to almost double the proportion of online responses without lowering the survey response rate or

affecting survey estimates. Most likely this is due to the ease of online access from a digital reminder. The approach was also significantly less expensive than the all-postal control, and so it has been adopted on the main survey.

- under the sequential mixed-mode design the proportion of online responses could be increased up to four-fold, compared with the simultaneous mixed-mode design, albeit at the expense of decreased response rates and an impact on some survey estimates. These approaches were also less cost effective than the simultaneous design due to the larger initial samples required to reach the same sample size.

Another UK health survey, the **NHS Patient Survey Programme**, provides valuable insights into healthcare provision for several special population groups. We undertook a series of pilot surveys to inform the potential transition of these surveys to a mixed-mode push-to-web design (online plus paper) from the former paper-only design. The initial pilots covered hospital, maternity, and children and young people patient groups. As with the GP Patient Survey the pilots were able to access rich sampling frames that provide named contact details and additional variables to allow investigations of non-response bias.

Two experimental designs contrasted the former three postal-mailings paper approach with mixed-mode designs including four mailings and two or three SMS reminders. For the experimental conditions, a paper questionnaire was included in the third mailing, or the third and fourth mailings. The pilots found that:

- with the exception of maternity patients the more intensive reminder regime was needed to match or exceed the control response rates. For maternity patients the less intensive regime matched the control response rates and the more intensive regime greatly exceeded them.

- non-response bias was reduced, compared to the control, for all patient groups on several sampling frame variables, including age, ethnicity and deprivation, and was stable for others.

- the pilots were highly successful at encouraging participants to respond online, with the proportion completing via this mode ranging

from 61% (hospital patients) to 84% (maternity), demonstrating the appeal of this mode across population groups including people of older age.

Finally, for a further special population survey, the **Childcare and early years survey of parents**, we ran a push-to-web mode trial in which we experimented with different survey design features, including incentives, questionnaire length, and the inclusion of a leaflet describing the impact of the survey on services for families. In previous research we had found that a low-value unconditional incentive (a tote bag included in all initial mailings) could generate higher response rates than conditional monetary incentives and was therefore more cost effective. This was not the case for parents on this more recent study, for whom an unconditional tote bag increased response, but not as much as a conditional gift voucher, and for whom an unconditional tote bag actually exacerbated the biases in the responding sample. Additionally, we found that response rates were unaffected by either a longer interview (further evidence that online response rates may be less vulnerable to interview length than previously thought), or by the inclusion of a leaflet describing the survey's impact.

Innovations from the UK birth cohort studies

Ipsos MORI in the UK continue a proud tradition of delivering the past four waves of the flagship **Millennium Cohort Study** for the Centre for Longitudinal Studies. As a longitudinal study, retaining the participation of cohort members over time is crucial, to ensure the survey continues to deliver unbiased results with sufficient sample sizes. We describe efforts to boost the response rate amongst the 17-year-old cohort members at the most recently completed wave, by offering an online interview to non-responders. The response rate to the online survey itself was 10%, boosting the overall survey rate one percentage point. Most impressively, the online survey allowed the study to re-connect with large numbers of emigrants, who are usually excluded from the survey. A third of this group (32%) responded to the online survey.

Finally, Ipsos completed a qualitative study to explore cohort members' acceptance of novel data collection methods, such as passive measurement via app and consent to additional data linkages. The research covered cohort members from **all four UK birth cohort studies**, covering individuals ranging in age from their late teens to their 60s. Overall, we found that transparency is key for the future of novel data collection. Study members want control over how and when they share their personal data, as well as a clear rationale and data security assurances.

Adapting cognitive interview protocols for surveys of sensitive topics with children

Finally, we describe how standard cognitive interview protocols were adapted for a survey in Southeast Asia and Southern and Eastern Africa for UNICEF, **Disrupting Harm**, which measured age 12-17 children's exposure to harmful online content exploitation. Cognitive interviewing involves using techniques derived from qualitative in-depth interviews to understand how participants interpret survey questions so that they can be improved. An issue with the standard approach is that it requires the participant to disclose to the interviewer how they answered each survey question. The article describes how indirect probing was used to overcome this issue.

British Election Study 2019: from face-to-face to a push-to-web methodology

Alex Bogdan and Tania Borges

The British Election Study (BES) takes place after each UK election and collects data on voting patterns from a random sample of the public. In line with previous elections, the 2019 study was designed as a face-to-face in-home, interviewer administered study. Face-to-face fieldwork started immediately after the 12th December 2019 General Election. On 18th March 2020 all face-to-face interviewing was stopped in line with recommendations from the Market Research Society (MRS) due to the COVID-19 pandemic. At this point 2,095 face-to-face interviews had been completed, just over half of the 4,000-interview target, and it was agreed to switch the study to a push-to-web methodology to complete the survey. The push-to-web element produced another 1,851 interviews, for a total of 3,946 interviews.

Face-to-face study design

The sample was designed to be representative of those who live in Great Britain and are eligible to vote. The sample was clustered: two Lower Super Output Areas (LSOAs) were randomly sampled in each of 400 Westminster constituencies. Addresses were drawn from the Postcode Address File. One eligible individual was randomly selected at each address, with the selection made on the doorstep by the face-to-face interviewer. An advanced letter was posted to each address to introduce the study.

Transitioning to push-to-web

When face-to-face fieldwork was stopped, a substantial part of the issued sample had not been fully worked. Almost all unsuccessful sample, apart from ineligible addresses or cases flagged by interviewers as inappropriate for further contact, was issued for push-to-web fieldwork, with the following design:

1. Invitation letter, inviting selected households to take part in the online survey
2. Second mailing, reminding selected households to take part in the online survey
3. Third mailing, accompanied by a shorter, printed version of the questionnaire
4. Fourth and final mailing, in the form of a postcard, reminding selected households to complete the survey either online or on paper.

Fieldwork for the push-to-web phase took place from 20 April to 10 July 2020, at the height of the pandemic in the UK.

Sampling

A total of 5,891 addresses, out of an original total of 8,992 sampled for the study, were issued to push-to-web. These included: 'fresh' sample (addresses not yet approach during the face-to-face phase), addresses that were approached but fieldwork was interrupted before an interview was achieved, cases that resulted in 'soft' refusals to the interviewer, addresses that interviewers had not been able to locate, and those where they were unable to make contact with anyone.

No additional sample was selected for the push-to-web survey beyond what had been selected at the outset for the face-to-face study. The push-to-web sample covered all British regions.

In the face-to-face stage, the random selection of an eligible individual was conducted by interviewers. This is not possible with a push-to-web design. Given the need to maintain consistency with the face-to-face

sample, and the known high levels of within-household correlation on survey estimates of key importance to the study (such as voting and ideology), selected households were invited to randomly select one eligible household member to complete the survey. Alternatively, if a person had been selected at the face-to-face stage that person was contacted and asked to complete the survey.

Incentive strategy

In the face-to-face stage, respondents were offered an incentive conditional on completing the survey. The incentive was tailored to the selected respondent in order to boost response among known difficult to interview groups, as shown in Table 1. Interviewers were able to assess respondents' ages before promising the planned incentive level.

Table 1: Incentive strategy BES 2019 Face-to-face

Conditional incentives	Aged 18-24	Aged 25+
In London	£25	£20
Outside London	£25	£10

For the push-to-web stage, in the absence of interviewers, it was impossible to vary the incentive based on respondents' characteristics. The incentive strategy was redesigned in order to maximise response, with an unconditional and conditional incentive offered with the first mailing, and a much higher incentive offered with the fourth and final mailing, as detailed in Table 2.

Table 2: Incentive strategy BES 2019 Push-to-web

Mailing	Incentive
1	£5 unconditional, £25 conditional
2	£25 conditional
3	£25 conditional
4	£50 conditional

Tailored communication

The letter inviting households to take part in the research was tailored to their previous experience with the survey. The sample was segmented into five groups, with communications referencing their previous interaction with the study if applicable, including addressing letters to the selected respondent if known.

Table 3: Contact tailored to previous survey interaction

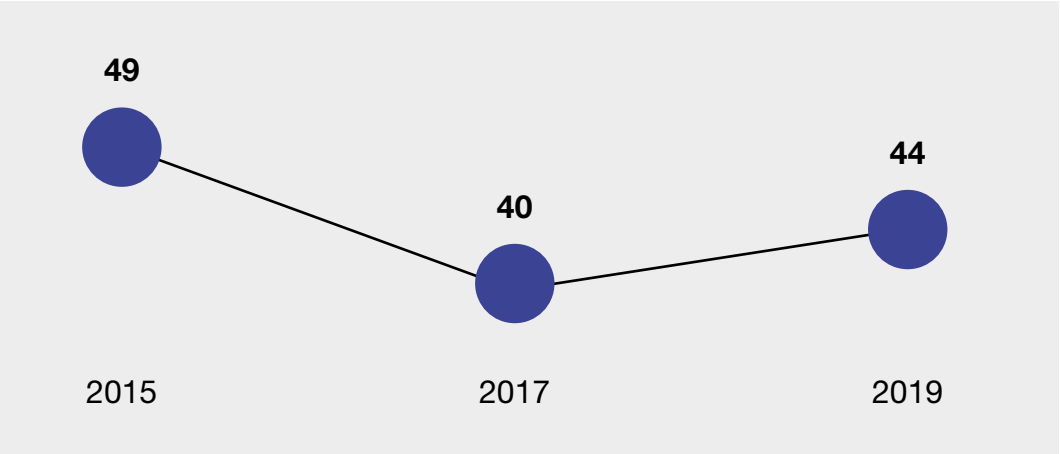
Fresh sample	No previous contact with household We are writing to ask for your help with…
Household letter, not refusal	Some previous contact with household …unfortunately, we had to stop the survey due to the coronavirus outbreak. We are now resuming the survey …
Household letter, refusal	Household previously refused …You were previously unable to conduct the survey with one of our interviewers…
Individual letter, not refusal	Respondent selected known Dear X, …unfortunately, we had to stop the survey due to the coronavirus outbreak. We are now resuming the survey …
Individual letter, refusal	Respondent selected refused Dear X, …You were previously unable to conduct the survey with one of our interviewers…

Survey response

The overall unadjusted response rate for the 2019 survey was 44%. This compares favourably to the 2017 survey which was conducted fully face-to-face (Figure 1). The response rate was higher in 2015.

The push-to-web element generated an overall response rate of 31%, above most UK push-to-web surveys. As shown in Table 4 below, response was higher when survey communications were addressed to

Figure 1: Unadjusted Response Rate (interviews/issued sample)



a named individual, in line with other surveys which demonstrate this pattern. A slightly higher response rate was achieved amongst fresh sample cases than other types of contacted households. This is most likely because, on average, households that had previous contact with a face-to-face interviewer, but were not yet interviewed, were harder to reach or more reluctant participants. However, it is difficult to draw concrete conclusions given the samples were not allocated randomly. What is encouraging is that the push-to-web fieldwork made a significant contribution across all groups, leading to good overall response rates.

Table 4: Push-to-web survey response rates by sample type

Type of invite letter	Issued to push-to-web	Interviews	% of issued
Fresh sample	1508	503	33%
Household letter, not refusal	2019	619	31%
Household letter, refusal	2151	635	30%
Individual letter, not refusal	138	64	46%
Individual letter, refusal	75	30	40%
Total	**5891**	**1851**	**31%**

Sample profile

As expected, the demographic profiles of respondents completing the online survey and the paper survey were somewhat different. Those responding online were more likely to be young, have a degree, be homeowners with a mortgage, more likely to say they do not have a religion, and that they are working full time. Those completing the paper survey were older, more likely to be retired, have a qualification below degree level, own their homes outright, say they are Christian, and be White British. We also found a slight skew towards women.

When comparing the push-to-web achieved sample (combining the online and paper data) with the profile of those interviewed face-to-face, we find some demographic differences: respondents in the push-to-web data are somewhat more likely to be men, younger, in full time employment, have a degree, own their home or rent from a private landlord. Differences tend to be small, within 10 percentage points.

Key survey estimates

The British Election Study aims to investigate political attitudes and behaviours. In order to be assured of the quality of the data collected via push-to-web, it is essential that key measures such as turnout and vote choice are comparable with the face-to-face data and, where available, that they are close to known election results.

There were marked differences in reported vote at the 2019 General Election between modes. Those responding online were more likely to say they voted Labour or Liberal Democrat than those completing the paper questionnaire, while those completing the paper questionnaire were more likely to say they voted Conservative. These differences are consistent with the differing demographic profiles of the two samples and show the importance of offering an offline mode of completion in election studies.

Reassuringly, once responses from the online and paper samples were combined, there were no significant differences between reported vote from the push-to-web sample and the face-to-face sample. Additionally, before applying any demographic calibration weights, the overall sample

vote shares were within 1 percentage point of the election results.

Differential mode effects

Finally, we also investigated whether there were any consistent patterns in how people respond to questions across different modes. It is important to keep in mind that the conditions were not assigned randomly. Nevertheless, we found patterns that are consistent with other research:

- Both self-complete modes, online and paper, saw higher levels of survey item non-response in the form of 'don't know' answers or skipped questions
- Respondents tended to use mid-points less in self-complete modes
- Political knowledge questions tended to generate fewer correct answers and higher levels of non-response in self-complete modes
- Respondents were much less likely to consent to data linkage and requests for further research in self-complete modes. This is particularly important for this study where a key component is matching survey results to the marked electoral register in order to estimate reliable turnout figures among the voting-eligible population.

Conclusion

The transition of the British Election Study 2019 from a face-to-face to a push-to-web design was highly successful, and meant that it was possible to complete the survey in spite of major disruption. A high response rate was achieved, very near to the target number of interviews were delivered without issuing additional sample, and key survey measures were found to be consistent with the actual election results. These results suggest that, with sufficient incentivisation, a push-to-web approach is a viable method for election studies, although the response rate may be lower in "normal times". However, there is some indication that data quality may have been reduced, given higher item non-response than face-to-face, and consent to data linkage and further research was lower.

Push-to-web: a viable method for business surveys? Evidence from the 4th European Company Survey

Andrew Cleary, Femke Dekeulenaer and Ahu Alanya

The European Foundation for the Improvement of Living and Working Conditions (Eurofound) and European Centre for the Development of Vocational training (Cedefop) commissioned Ipsos to carry out the 4th edition of the European Company Survey (ECS) in 2019. The survey collected data in around 22,000 establishments from across the European Union on workplace practices with regard to work organisation, human resource management, skills use, skills strategies, digitalisation, direct employee participation and social dialogue. It also linked these topics to business strategy and performance.

The three previous editions of the survey used a telephone approach, carried out in 2004/05 (as the European Establishment Survey on Working Time and Work-Life Balance), 2009 and 2013. For ECS 2019, a push-to-web approach was used, with telephone contact and online interviews. Compared with the telephone approach the online data collection was expected to reduce respondent burden and improve data quality.

To our knowledge this was the first time a large cross-national business survey had been carried out using this approach.

Overview of survey design and contact strategy

The survey collected probability-based samples of establishments with at least 10 employees. It included the 27 EU Member States and the United Kingdom with sample sizes of between 250 (Malta) and 1,500 (France).

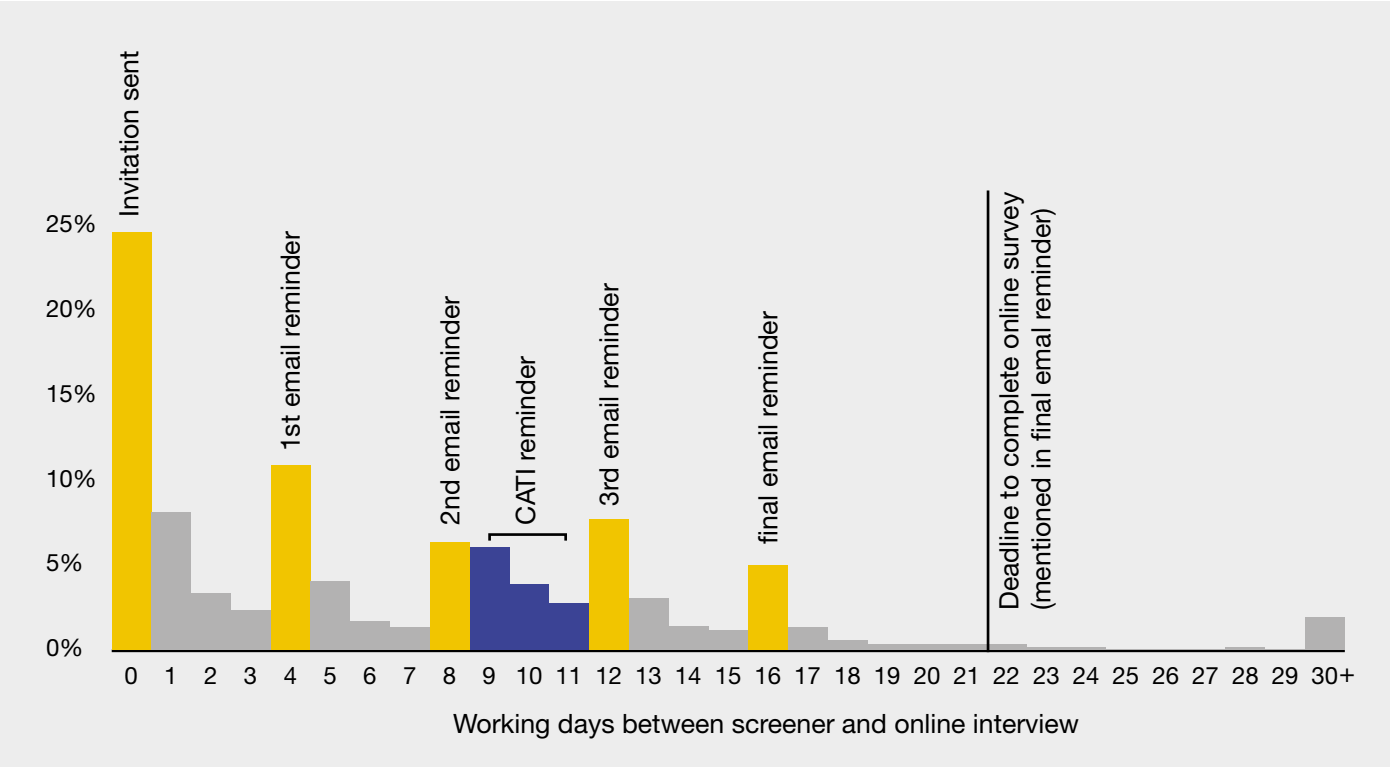
The data collection followed a two-stage design. The **first stage** involved a CATI survey approach which is typical of most business surveys, whereby multiple phone calls were made at different times of day over a minimum two-week period in an attempt to complete a 5-minute **CATI screener interview**. The screener interview was used to:

1. establish eligibility and identify and speak to an appropriate HR manager, capable of answering the substantive questions online;
2. collect basic information for non-response investigation; and
3. obtain agreement for the online interview and an email to send the survey link to.

The inclusion of an interviewer-administered contact mode is essential for a business survey such as this, given the non-existence of high-quality sampling frames with direct contact details for individuals in different roles. This means that interviewers are needed to negotiate with gatekeepers to first identify the right survey informant and then persuade them to take part.

The **second stage** involved multiple contact attempts to elicit an **online interview** from the consenting participant. This included (see Figure 2 below): an immediate email invitation, two email reminders, up to three telephone calls to remind the participant to respond online, and two further email reminders. The following figure illustrates the timing of these reminders and the proportions of the interviews achieved after each.

Figure 2: Proportion of online responses received over time



Survey response rates

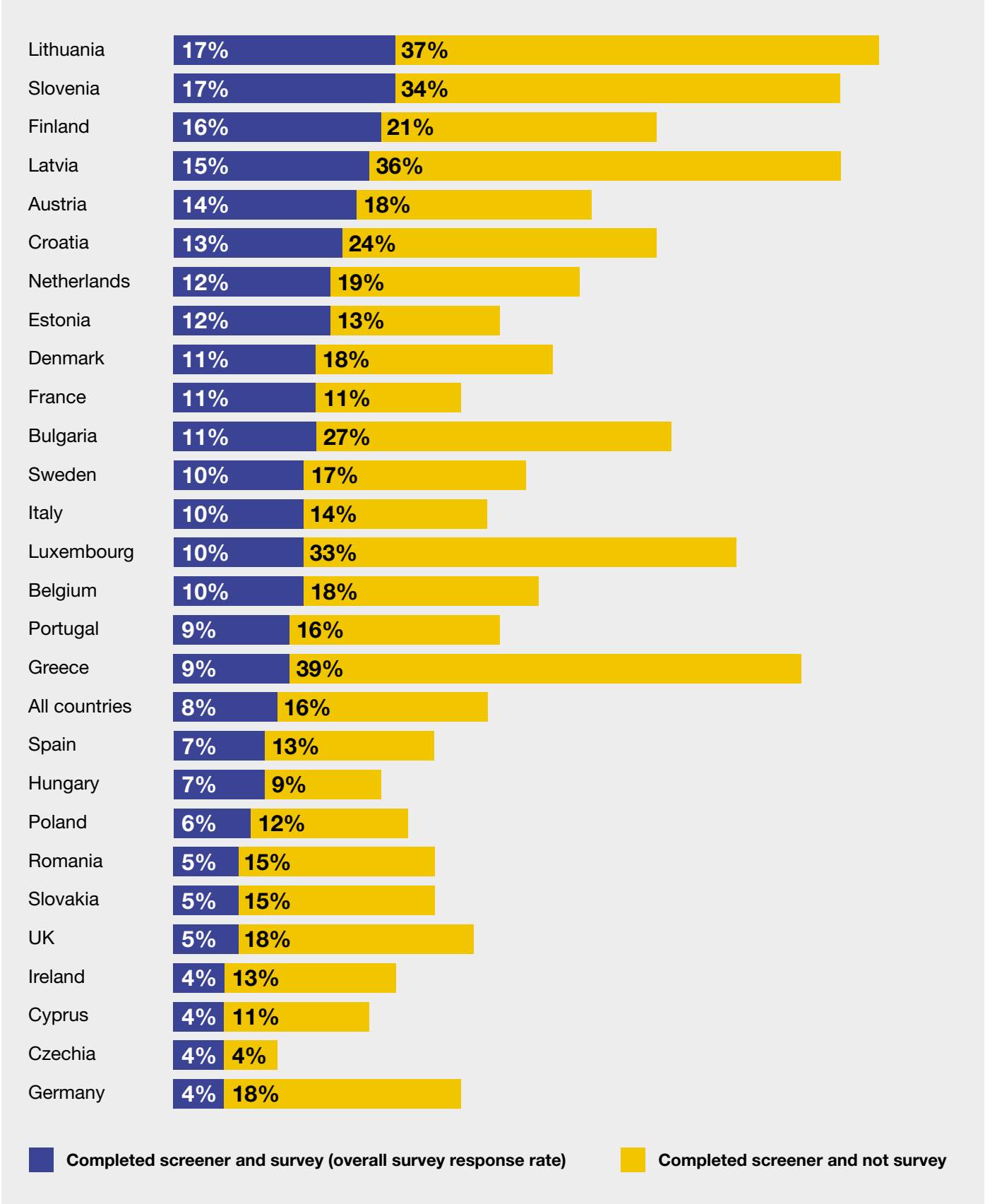
The overall response rate to the CATI screener stage was 24%, ranging from 8% (in Czechia) to 54% (in Lithuania), which is similar to other telephone business surveys.[01]

Response to the online survey was on average 34%, ranging from 17% (in Germany) to 50% (in Czechia and France), out of those who agreed to be sent the online survey invitation.

This resulted in a net response rate across the two stages of 8%, ranging from 4% in Cyprus, Czechia, Germany and Ireland to 18% in Lithuania. Figure 3 shows the proportions of the two-step response process: those who responded at both steps and those who only responded to the screener.

[01] Malta is excluded from these figures and the chart as it appears to be an outlier. The screener response rate was 95% and overall response rate 41% in Malta, but this is associated with the fact that many establishments were either ineligible or a suitable management respondent could be found (and in the latter situation, establishments were also coded as ineligible), leading to low eligibility rates and an inflated response rate.

Figure 3: Screener and overall survey response rates



Investigations of non-response bias

Although other research has demonstrated a lack of association between response rates and non-response bias,[02] given the new method and increased risk of non-response bias given lower response rates, this issue was investigated extensively.

Investigations of non-response bias require us to have information about both responding and non-responding sample cases. An advantage of the two-stage approach was that information could be collected in the CATI screener which might be associated with online survey response rates and survey estimates, conditions that if met can lead to non-response bias. Additionally, some information was available on the sampling frames to inform the investigations.

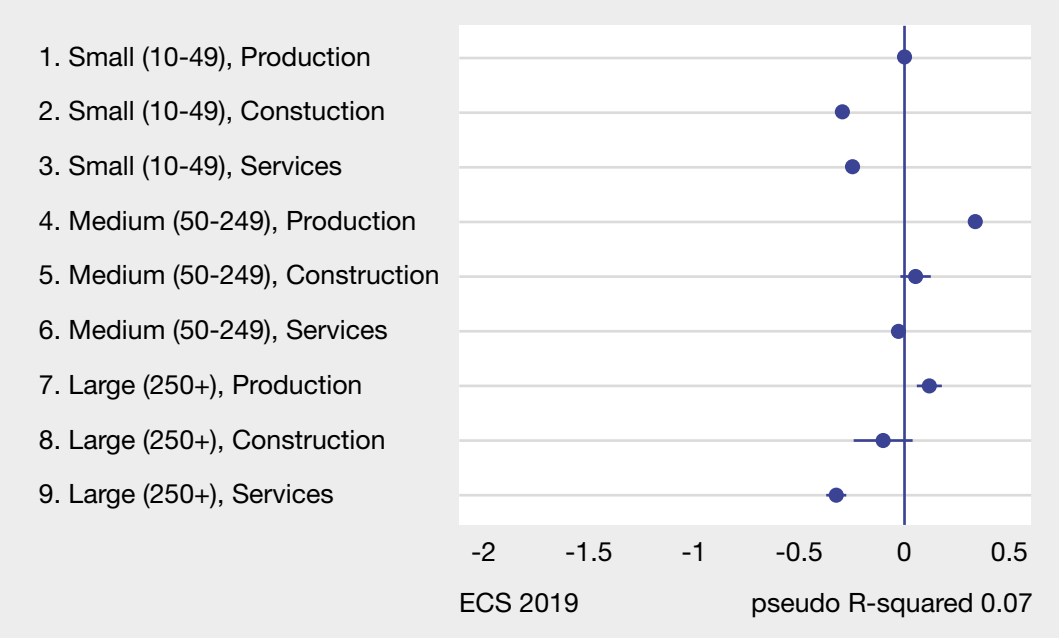
Separate logistic regression models were fitted for the CATI screener and online interview stages, both overall and for each country. For the screener response models the following predictors were available on the sampling frame:

- size of the establishment (or company) in terms of number of employees
- main sector of economic activity (recoded from NACE rev. 2 categories).

The screener response models (Figure 4) showed that small establishments tended to be less likely to participate in the CATI screener, but a lower probability was also observed for large establishments in the services sector. Medium-sized and large establishments in the production sector, on the other hand, had the highest probabilities to participate in the CATI screener.

[02] Groves, R. and Peytcheva, E. (2008), The impact of nonresponse rates on nonresponse bias: a meta-analysis. Public Opinion Quarterly 72, 167-189

Figure 4: Log odds of completing the Screener Survey



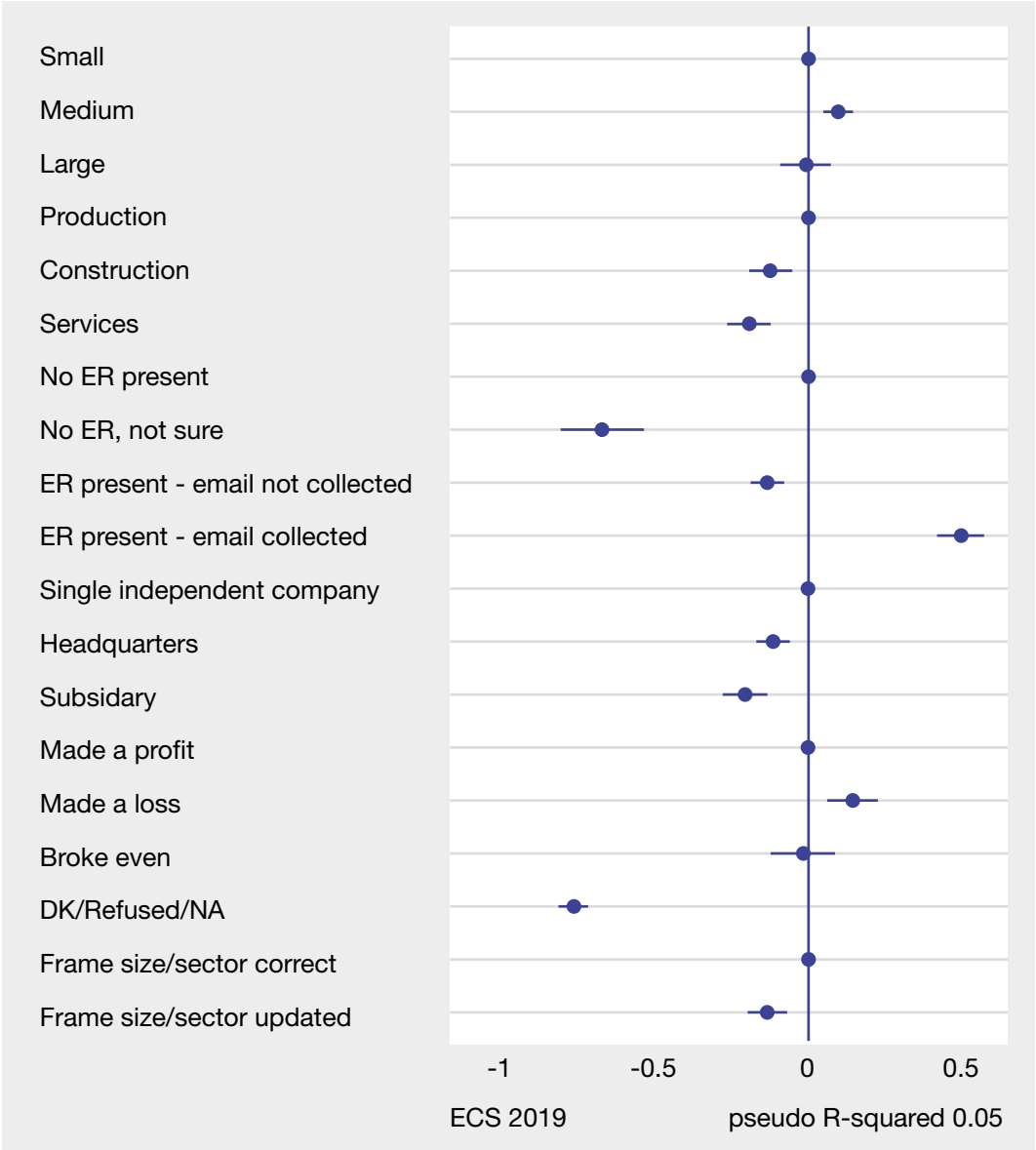
For the online response models (Figure 5) the following predictors were available on the sampling frame or were collected in the screener interview:

- size of the establishment (or company) in terms of number of employees
- main sector of economic activity (recoded from NACE rev. 2 categories);
- type of establishment (single-site company, headquarters, subsidiary);
- presence of employee representative in establishment;
- response to profit question (Did this establishment make a profit in 2018?)
- frame size/sector information updated in screener

Management respondents who were hesitant to disclose information in the CATI screener about financial performance of the establishment or the presence of employee representation were overall the least likely to complete the online survey. This pattern was consistent across countries. In previous rounds of ECS, financial performance of the establishment

was found to be associated with a number of key variables. Given that management respondents who did not disclose information on financial performance might be more likely to be part of an establishment that made a loss or broke even, the models indicate that the online responses may be subject to non-response bias.

Figure 5: Log odds of completing online survey



Discussion

As expected, the switch to a push-to-web design resulted in a drop in response rate. This was expected because non-response accumulates in each step of the survey response process, and adding an additional step led to additional attrition. However, the survey also demonstrated that a push-to-web approach is feasible across the 28 survey countries, future-proofing the design against technological and societal changes which will most likely mean a purely telephone approach is less viable in the future.

The non-response models found evidence of potential non-response bias in the screener and online responses; however, the pseudo R squared values of the models were low and most of the variation in response probabilities remains unexplained by the available frame variables and the explanatory variables from the CATI screener. In other words, no evidence was found of large non-response bias with respect to the available predictor variables, but the results do not exclude non-response bias linked to other, non-observed characteristics of establishments.

Further information about the methodology of the survey is available here.

Childcare and early years survey of parents, push-to-web mode trial

Tom Huskinson, Galini Pantelidou and Kevin Pickering

Introduction

Since 2004 the Department for Education has collected data about parents' use of childcare and early years provision via the Childcare and early years survey of parents (CEYSP), a major cross-sectional face-to-face survey of 6,000 parents in England. The data are published as an Official Statistic and are used across government, as well as by researchers in academia and the charity sector.

In 2018 DfE commissioned Ipsos MORI to design a push-to-web survey to explore the scope for certain CEYSP measures to be collected online rather than face-to-face.[03]

Method

The first challenge was to design a questionnaire appropriate for online completion, which necessitated a "Mobile First" approach, with completion on a mobile device foremost in mind. Given the complexity and length (around 45 minutes) of the CEYSP questionnaire, no attempt was made to translate it in full into an online format. Instead, childcare-related research questions of interest were identified, and from these, a questionnaire was developed afresh following Mobile First principles.[04] Where possible,

[03] Full report available here: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/853545/CEYSP_Mode_Trial_Report.pdf

[04] See https://www.ipsos.com/ipsos-mori/en-uk/mobile-first-best-practice-guide

specific CEYSP questions were retained, with as few changes as possible, in order that survey estimates between the CEYSP and the push-to-web survey could be compared. The questionnaire was developed using both cognitive interviews and usability testing with parents.

A sample of 17,834 children aged 0-14 were drawn from the Child Benefit Database, and survey invitation letters were mailed to their parents. Three features of the survey were experimentally manipulated, using a full factorial design to produce 12 conditions:

- Incentivisation (3 conditions)
  1. £5 electronic gift voucher (conditional on survey completion)
  2. Tote bag (unconditional, enclosed in the invitation mailing)
  3. No incentive

- Leaflet describing the impact of the survey on services for families (2 conditions)
  1. Leaflet included in the invitation mailing
  2. No leaflet included in the invitation mailing

- Survey length (2 conditions)
  1. 15 minutes
  2. 20 minutes

Table 5: Design of experiments

		Incentive			
Leaflet	**Survey length (minutes)**	**£5 gift voucher (conditional)**	**Tote bag (unconditional)**	**None**	**Issued sample**
Included	15	A	E	I	2,063
	20	B	F	J	2,063
Not included	15	C	G	K	11,644
	20	D	H	L	2,064
	Issue sample	**4,125**	**4,125**	**9,584**	**17,834**

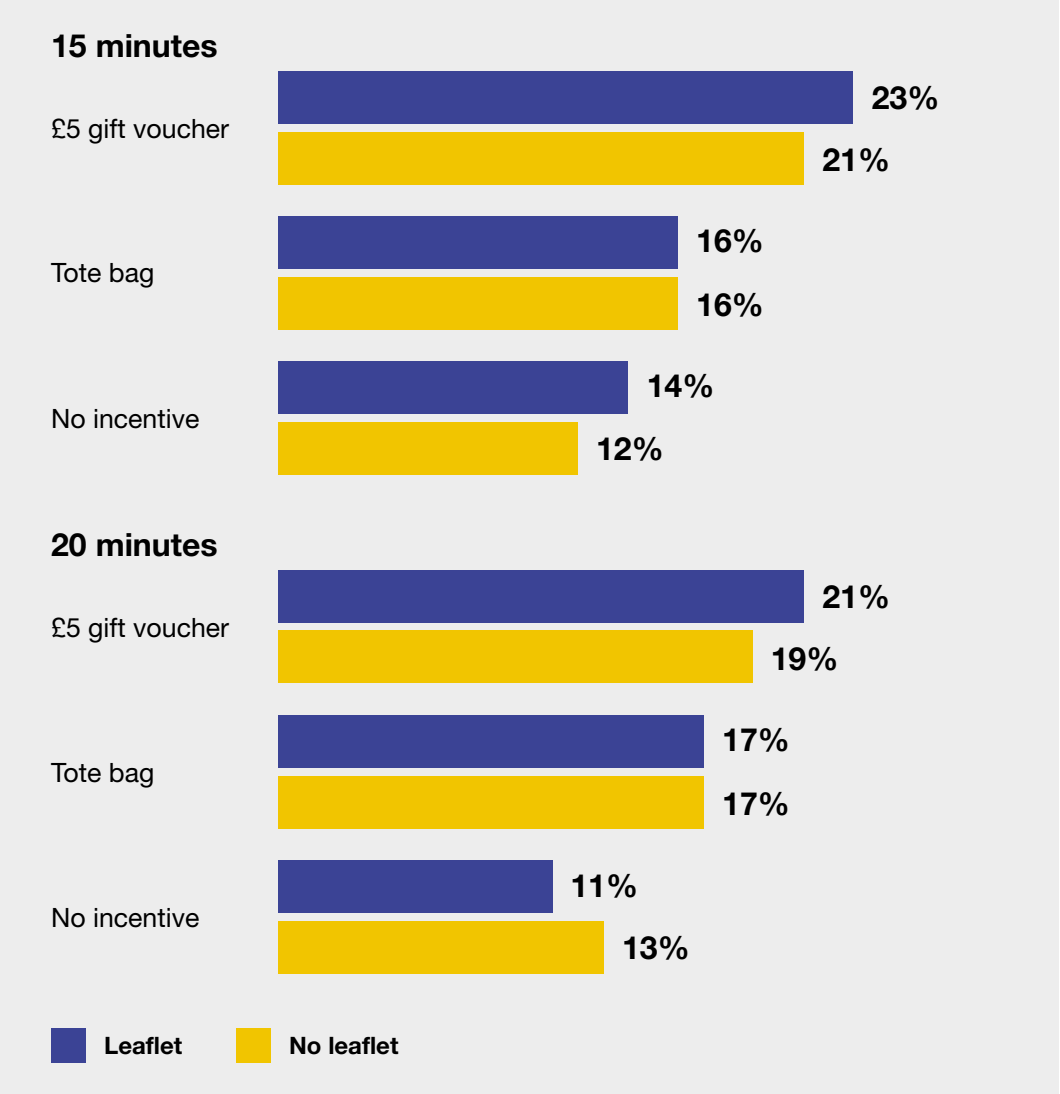
Non-responders were sent a reminder letter, followed by a reminder postcard, over the six-week fieldwork period (May to July 2019).

Results

Overall 15.2% of issued addresses completed the survey, far lower than the equivalent face-to-face response rate of 50.9% obtained in the 2018 CEYSP.

The response rate varied by experimental condition, ranging from a low of 10.9% (for condition J: no incentive, leaflet, 20 minutes) to a high of 23.3% (for condition A: £5 gift voucher, leaflet, 15 minutes).

Figure 6: Response rate by condition



A multivariate regression analysis found that, of the three experimental treatments, only incentivisation had a significant impact on the response rate, with neither the provision of a leaflet nor survey length making any significant difference to the response rate:

- The inclusion of a tote bag in the first mailing increased the response rate by 4.4 percentage points, compared to offering no incentive (from 12.0%, to 16.4%, $p<0.001$);
- The offer of a £5 gift voucher increased the response rate by 9.3 percentage points, compared to offering no incentive (from 12.0%, to 21.3%, $p<0.001$);
- The offer of a £5 gift voucher increased the response rate by 4.9 percentage points compared to including a tote bag in the first mailing (from 16.4% to 21.3%, $p<0.001$).

Compared to the 2018 CEYSP, respondents to the push-to-web survey were more highly educated, with higher incomes and levels of employment, were more likely to be in couple (vs lone parent) families, and were more likely to live in less deprived areas of the country. These biases are consistent with the findings of other push-to-web surveys where it has been possible to compare the achieved sample profile to population parameters. These biases were slightly reduced under the £5 gift voucher conditions, but were actually exacerbated under the tote bag conditions.

An analysis of survey estimates found that despite these biases in the responding sample, the push-to-web survey produced similar estimates to the 2018 CEYSP for certain simple, factual questions. These included the estimate of children's use of formal childcare during term time, and parents' awareness of the Government's "free hours" childcare entitlement scheme. Greater differences arose, however, for questions relating to parents' attitudes and intentions. These included questions around parents' employment preferences, and how they felt about the amount of learning and play activities they do with their child.

It is ultimately not possible to determine whether these differences are attributable to differences in the profile of the responding samples or to mode effects (or both), as these factors are confounded. However, to the

extent that the sample profile of a push-to-web survey is biased in certain ways, and to the extent that it has a lower response rate which confers more opportunities for non-response bias, it can be expected to produce survey estimates that are more biased than its face-to-face counterpart.

Discussion

Our findings show that, for this survey, a £5 gift voucher offered conditional on survey completion was the most effective response rate maximisation strategy. This produced higher response rates than offering a tote bag as an unconditional incentive, sending a survey information leaflet, or offering a shorter interview. The £5 gift voucher also reduced survey bias, especially when compared with the tote bag which exacerbated bias for some measures. Finally, compared with the face-to-face survey results, the push-to-web survey tended to generate comparable estimates on factual questions, while there were biases for some attitudinal measures.

Ultimately, it was decided to continue the survey as a face-to-face survey, primarily given the complexity and length of the questionnaire which are better suited to this mode. Fieldwork was paused during the pandemic and was re-started during summer 2021 using remote interviewing modes, following a successful pilot.

An experiment on incentivising early responses in a push-to-web survey

Patten Smith

Introduction and design of the experiment

Recent years have seen the emergence of 'push-to-web' survey methods which, in the UK, typically involve the following elements: a random sample of postcode address file (PAF) addresses, postal invitations to participate in an online survey, and two or three reminder mailings, one of which includes a postal questionnaire that can be completed instead of the online one. Online questionnaires are preferred by researchers to paper self-completion questionnaires because they allow more complex question structures and provide higher quality data. Postal recruitment is used because random probability surveys require high coverage sample frames, and these do not hold electronic contact information. One postal questionnaire reminder is included to reduce non-response bias: people who respond to surveys online, on average, have higher incomes, are better educated, and are less likely aged 65+ than those who respond using postal questionnaires. The push-to-web methodology is used for a number of major high-quality UK surveys, including the Community Life Survey, the Active Lives Survey and the Food and You 2 Survey.

Although postal questionnaires are administered during the reminder phases in order to minimise non-response bias, for a given respondent an online response is preferred over a postal one: online questionnaires

allow more questions to be asked, allow more complex question routing to be used, control answer formats, allow real-time checks to be made of respondents' answers, and show considerably lower levels of item non-response. The purpose of this experiment was to see if we could use early completion incentives to persuade respondents to complete online questionnaires rather than postal ones.

The experiment was conducted on the "Food and You 2" survey commissioned by the Food Standards Agency to collect data on people's attitudes, behaviours, and knowledge concerning food safety and other food issues. For the survey an issued sample of 21,053 PAF addresses was mailed an initial invitation letter asking up to two address residents aged 16+ to respond to an online survey; a questionnaire URL and login details for two individuals were provided. Three reminder letters were sent both to non-responding addresses and to addresses where only one of two or more eligible adults had responded, and the second reminder was accompanied by a postal questionnaire in addition to the online survey login details. Data collection took place between July and October 2020.

The issued address sample was randomly allocated to three experimental groups each with a different incentive regime. In the control group each individual respondent received a flat rate £10 shopping voucher conditional on responding. The two experimental groups (groups E1 and E2) respondents received a larger £15 shopping voucher if they responded 'early' –early being defined as before the first reminder letter was despatched. If they responded after this deadline, Group E1 respondents received £10, and group E2 respondents £5. Because postal questionnaires were only sent with the second reminder mailing, all early respondents were necessarily also online respondents, and it was hoped that increasing the incentive for early responses would encourage online responses overall. The experimental conditions are summarised in Table 6 below.

Table 6: Experimental conditions

	Control	Experimental E1	Experimental E2
Issued number of addresses	10,527	5,263	5,263
Incentive amount received for early response	£10	£15	£15
Incentive amount received for later response	£10	£10	£5

Results

Table 7 shows for each experimental group: (i) the number of addresses from which 1 or 2 early responses were received and (ii) the number of addresses from which 1 or 2 responses were received at any time during fieldwork. The table shows that offering the early completion incentive successfully increased the number of early responses received in both experimental groups (E1: 13.7%; E2: 11.8%; Control: 7.9%).

The overall address level response rate was highest for group E1 (E1: 33.6%; E2: 27.7%; Control: 30.3%) which is, perhaps, unsurprising as this group received the highest incentives (£15 for an early response; £10 for a later response). More control group addresses than group E2 addresses responded overall (30.3% vs. 27.7%) despite the higher early return response rate for the latter group, suggesting that a £5 incentive for later responses was considerably less effective than the £10 one.

Table 7: Responding addresses by experimental group

	Control		Experimental E1		Experimental E2	
	N	%	N	%	N	%
Issued addresses	10527	100.0%	5263	100.0%	5263	100.0%
Addresses with 1 or 2 responses before first reminder despatch [a]	833	7.9%	720	13.7%	619	11.8%
Addresses with 1 or 2 responses at any time [b]	3185	30.3%	1767	33.6%	1456	27.7%

[a] All pairwise inter-group differences significant (p<0.01) using Chi-square test

[b] All pairwise inter-group differences significant (p<0.01) using Chi-square test

Table 8 shows the number of online and postal returns per issued address for each condition.

Table 8: Mean number of online and postal returns per issued address

	Control	E1	E2	Sig tests
Issued addresses	10527	5263	5263	
Online returns per issued address	0.269	0.337	0.254	C vs. E1: t=6.4, p<0.001 C vs. E2: t=1.4, n.s. E1 vs. E2: t= 6.7, p< 0.001
Postal returns per issued address	0.174	0.156	0.138	C vs. E1: t=2.2, p<0.025 C vs. E2: t=4.7, p<0.001 E1 vs. E2: t= 2.2, p< 0.029
Total returns per address	0.443	0.493	0.392	C vs. E1: t=4.0, p<0.001 C vs. E2: t=4.2, p<0.001 E1 vs. E2: t= 7.2, p< 0.001
Ratio of online to postal returns (online: postal)	1.55: 1	2.16: 1	1.84: 1	

Condition E1 successfully encouraged online responding: it delivered more online responses, more responses overall, and a higher ratio of online to postal responses than did the control condition (2.16 vs. 1.55). Although condition E2 also increased the ratio of online to postal responses from 1.55 (for the control) to 1.84, it did not increase the number of online questionnaires received in absolute terms, and this was achieved at the cost of obtaining fewer responses overall.

We compared unweighted survey estimates for the three conditions for 5 demographic variables and 30 survey variables. Estimates were very similar in the three conditions for all variables tested, and no significant differences were found. We also estimated the net cost of achieving each response in each condition. Costs per response were around five per cent greater for the two experimental groups than for the control group.

Discussion

To summarise our findings:

- offering a larger (£15 instead of £10) incentive to those responding before a stated deadline increased the number of responses received by the deadline date;

- offering a higher incentive for responding early also delivered a higher overall questionnaire return rate than a flat rate £10 incentive, but only if the incentive did not drop, after the deadline, to below £10; when the incentive for later respondents dropped to £5, the early questionnaire return rate dropped to below that of the control group;

- An early completion incentive of £15 followed by a £10 incentive delivered more responses in all, more online responses and fewer postal responses per issued sample address than did a flat rate £10 incentive. In contrast, a £15 early completion incentive followed by a £5 incentive delivered fewer responses overall, no more online responses and fewer postal responses per issued address than a flat rate incentive.

- Comparisons of selected demographic and survey variables provided no evidence that incentive regime affected survey estimates.

- The costs per achieved respondent were around five per cent greater for both the early incentive groups relative to the control.

Offering £15 for early completion followed by £5 for later responses was clearly not cost-effective. It was more expensive than offering £10 throughout, reduced the overall response rate and did not increase the number of online responses.

Although offering £15 followed by £10 also cost more than a flat-rate £10, it improved survey quality both by increasing overall response rate and by delivering more online responses, allowing longer, more complex, questionnaires, real-time edit checks and lower levels of item non-response.

Whether it is considered worth investing in an increased incentive for early completion, will therefore depend on the value attached to the consequential improvements in data quality.

Transitioning the NHS Patient Survey Programme from paper to push-to-web

Eileen Irvin and Laura Thomas

The NHS Patient Survey Programme (NPSP) has been commissioned by the Care Quality Commission (CQC) since 2005. This is a collection of surveys covering healthcare provided by NHS trusts across England. The NPSP currently includes five surveys: Inpatients, Maternity, Children and Young People's (CYP), Urgent and Emergency Care (UEC) and Community Mental Health (CMH). Surveys are sent to named respondents to ask them about their recent experience of care at a named hospital trust.

Historically, these surveys have been run using a paper self-complete questionnaire approach. However, in 2018, CQC commissioned Ipsos MORI as the Coordination Centre for Mixed Methods, to move the surveys to a push-to-web approach and co-ordinate the mainstage surveys using this new method.

So far, pilots have been completed for Inpatients, Maternity and CYP, with further pilots currently underway on CMH and UEC. The Inpatients 2020 and Maternity 2021 mainstages have also successfully transitioned to a mixed method approach.

The pilots

For Inpatients, Maternity and CYP, participants traditionally received a postal invitation with a paper questionnaire, followed by two postal reminders to non-respondents. An additional paper questionnaire was

included in the second reminder. For the pilot, this method was used for the control group. For the experiment groups, a paper invitation with log-in details for the online survey was sent. This was followed by three postal reminders and two or three SMS reminders for non-respondents. A paper questionnaire was not provided until the second reminder.[05]

The purpose of the pilots was to understand the feasibility of moving these surveys to push-to-web and assess the impact on four outcomes. These were:

- **Non-response bias:** Online surveys and SMS reminders can encourage younger people to take part, and younger participants were less likely to respond to the surveys in their paper-only design.[06] However, those with online access also tend to be less deprived than those without,[07] meaning the results could be less representative than previously. Although including a paper mode should reduce the risk this poses,[08] it is important to monitor, to ensure that including an online mode does not increase non-response bias.

- **Response rate:** Push-to-web can have a lower response rate than paper-only approaches,[09] so it is important to understand the impact on response rate of moving method. Although non-response bias is not necessarily correlated with response rates,[10] lower response rates can impact costs, if a larger initial sample is required to achieve the

[05] For details of all methodologies and mailing intervals tested, see the pilot reports available on the NHS surveys website: https://nhssurveys.org/surveys/survey/06-development-work/

[06] This is detailed in the technical guidance for the surveys, such as in the Quality and Methodology report for the 2019 Adult Inpatients Survey https://nhssurveys.org/wp-content/surveys/02-adults-inpatients/04-analysis-reporting/2019/Quality%20and%20methodology%20report.pdf

[07] National Centre for Research Methods, (2014). Web Surveys for the General Population: How, why and when. Available online here: https://eprints.ncrm.ac.uk/id/eprint/3309/3/GenPopWeb.pdf

[08] Messer, B. L. and Dillman, D. A. (2011). Surveying the general public over the Internet using address based sampling and mail contact procedures. Public Opinion Quarterly, 75, 429-457

[09] Dillman DA, Smyth JD, Christian LM. Internet, Phone, Mail, and Mixed-Mode Surveys: The Tailored Design Method. 4. New Jersey: John Wiley and Sons; 2014, p. 431

[10] Groves, R. and Peytcheva, E.(2008), The impact of nonresponse rates on nonresponse bias: a metaanalysis. Public Opinion Quarterly 72, 167-189

same number of responses. If initial samples sizes are not able to be increased, it would reduce the precision of the samples, making it harder to detect differences.

- **Trends:** Changing survey mode can result in differences in question response due to mode effects. Therefore, when making a change in mode, it is important to understand the implications for the responses received and whether trends can be maintained.

- **Costs:** A push-to-web approach has the potential to reduce printing and postage costs, as well as reducing scanning costs given this is not necessary for online responses. However, push-to-web can lead to a reduced response rate compared to paper on its own,[11] which can increase costs because more reminders are required. In addition, there are extra costs involved in the set-up and management of the online survey, which need to be considered, as well as the costs of the SMS reminders, which were added for the experimental approach.

Non-response bias

In order to assess non-response bias (the difference between the responding samples and populations) a comparison was done between sample variables and the sample profile of respondents. A number of demographic and health variables were available on the sampling frames were available for this comparison. They included variables such as age, sex/gender, ethnicity, deprivation, reason for hospital admission and length of stay (for Inpatients and CYP) and place of delivery (for maternity).

Across the Inpatients, Maternity and CYP pilots, non-response bias was reduced for the push-to-web approach compared with the control group. Improvements were seen by age (across all pilots), ethnicity (for CYP) and deprivation (for CYP and Maternity), and was stable for other variables.

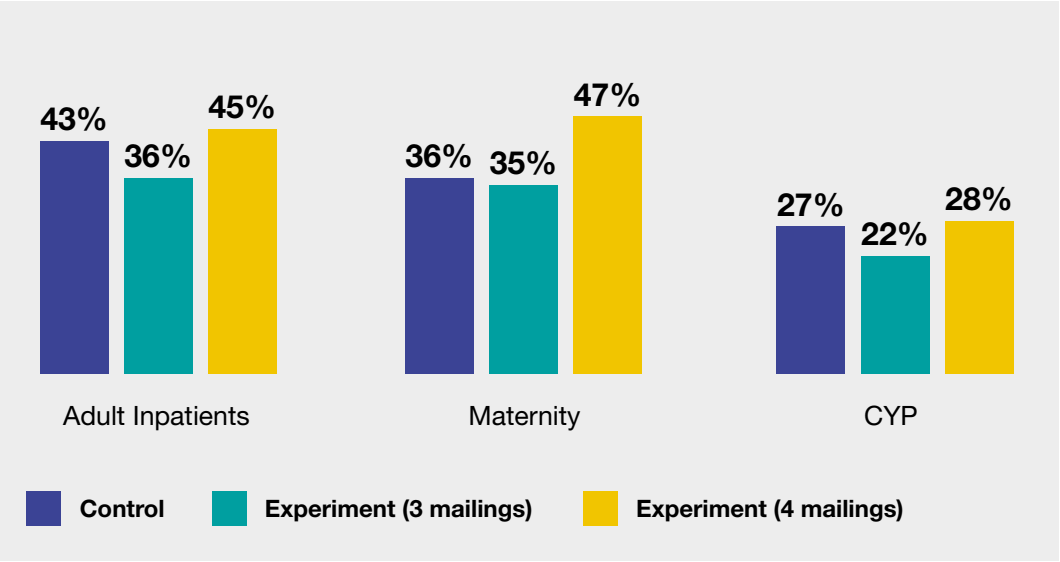
[11] Dillman DA, Smyth JD, Christian LM. Internet, Phone, Mail, and Mixed-Mode Surveys: The Tailored Design Method. 4. New Jersey: John Wiley and Sons; 2014, p. 431

Response rate

The impact on response rate of using a different contact method and introducing a new response mode varied between different patient groups.

For the Inpatients and CYP pilots, as shown in Figure 7 below, an additional postal reminder was required to achieve comparable response rates between the push-to-web and paper-only approaches. Although this did not lead to an increase in non-response bias, this meant either a fourth mailing was required, which would have cost implications, or the potential for a lower number of responses would have to be accepted.

Figure 7: Response rates by control and experiment group, by pilot, with three and four mailings

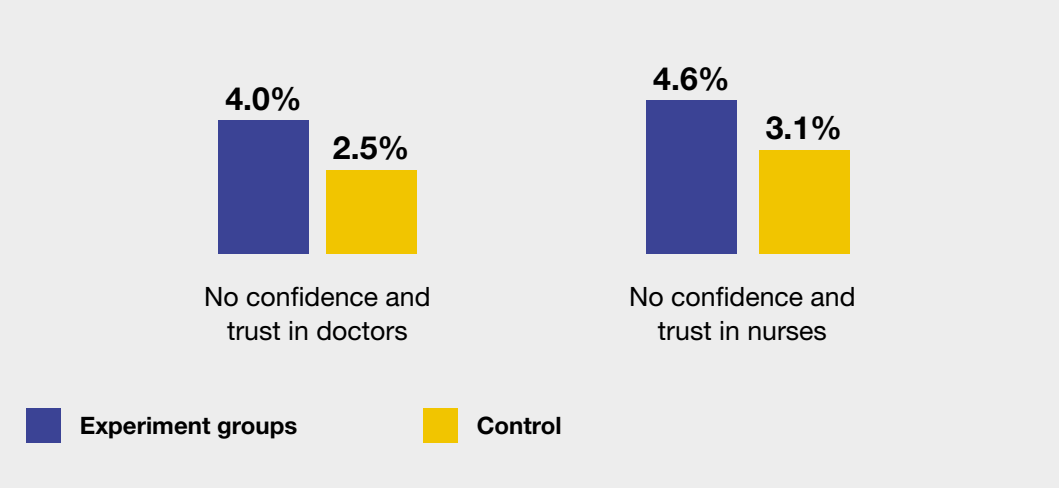


However, for Maternity, the response rate was not significantly impacted with three mailings, and substantially increased once the fourth mailing was included. This likely reflects the specific population being measured – new mothers. This group tend to be of an age who are amenable to online surveys and as parents of new babies, taking part in an online survey on a mobile phone is likely to be easier than the practicalities of posting a paper questionnaire. For the most successful experiment group, 83.8% of responses were received online and three quarters (74.8%) of these were completed on a mobile phone. This was higher than any other pilot.

Trends

Some trends were altered under the new approach. For Inpatients and parent and carer responses to the CYP survey, responses about experiences of healthcare professionals were consistently more negative. For example, as shown in Figure 8, in the Adult Inpatient pilot, the percentage of respondents reporting a lack of confidence and trust in doctors or nurses was consistently significantly higher for the experiment groups than control groups. Although the differences were comparatively small, there is often little variation in these measures for these surveys and this could therefore make it appear that changes had taken place that had not. As these differences were not controlled for by weighting, it was agreed the Inpatient and CYP parent and carer responses would require a break in trends if the change in mode was introduced.

Figure 8: Adult Inpatient pilot - Lack of confidence in doctors and nurses by control and experiment group (unweighted)



However, responses from other populations were not impacted. Responses to the Maternity survey and from children and young people to the CYP survey were consistent across the control and experiment groups. This meant that, when a change in mode was introduced to these surveys, trends could be maintained for these populations.

Costs

The impact on cost varied between surveys given their differential response rates.

For the Inpatient and CYP surveys an additional mailing was required to achieve a comparable number of responses. This meant a decision had to be made between an increase in costs or a reduction in the number of expected achieved responses for each trust when moving methods.

For Maternity, by contrast, because of the particularly successful uptake of the online survey and increase in response rate, as well as the smaller sample size, it was possible to introduce a fourth mailing without increasing costs.

Implications for NPSP and other research programmes

Overall, the results of the pilots show that push-to-web using SMS reminders and a postal follow-up is a feasible alternative to a paper-only survey for patient experience surveys with a variety of populations. Feasibility had been a particular concern for the Inpatients survey, given the older population and that older age is generally associated with lower online response rates.

However, the variation in impact on non-response bias, response rates, trends and costs reaffirms the importance of conducting pilots before making large-scale changes to survey methodology, to understand the implications for the specific population involved.

As mentioned above, the Inpatients and Maternity mainstages have successfully transitioned to a mixed-mode approach, following the results of the pilots. Further pilots are currently underway for CMH and UEC, to understand whether these surveys can be feasibly moved and the implications for these populations.

It is also worth noting that the Inpatients, Maternity and CYP pilots primarily took place prior to the COVID-19 pandemic.[12] As the pandemic has led to an increase in usage of online services, push-to-web surveys are likely to increase in popularity among respondents. Therefore, it will be important to consider the difference between pilot results and the results of the Inpatient 2020 mainstage (published on the CQC website: https://www.cqc.org.uk/publications/surveys/adult-inpatient-survey-2020) and Maternity 2021 mainstage (due to be published early 2022).

For more details about the pilots, additional information and the full reports are available on the NHS Surveys website (https://nhssurveys.org/surveys/survey/06-development-work/) and on the CQC website (https://www.cqc.org.uk/publications/surveys/nhs-patient-surveys-introducing-online-data-collection).

[12] Fieldwork for the Inpatients pilot took place entirely before the pandemic. For the CYP pilot, all mailings had been sent out prior to the first lockdown on 23 March 2019, and only the fourth mailing of the Maternity pilot experiment group took place during lockdown.

Push-to-web testing for the GP Patient Survey

Joanna Barry, Rachel Williams and Eileen Irvin

Ipsos MORI, on behalf of NHS England and NHS Improvement (NHSEI), recently tested several push-to-web strategies for the GP Patient Survey (GPPS).

GPPS is a large-scale postal survey with an online option, collecting information from over 700,000 patients annually about their experiences of local GP and other health services in England. It is now sampled from the Personal Demographic Service which provides information for all patients registered with the NHS, allowing us to access contact details of sampled individuals (name, address and mobile number, if available). As with many other surveys, we have faced the challenges of falling response rates and increasing postage costs over recent years. However, these challenges have created opportunities to experimentally test mailing strategies and changes to survey materials, with the aim of reversing declining response rates and/or encouraging online completion, therefore reducing costs.

The mailing strategy for the main survey previously involved sending an initial postal questionnaire followed by a postcard reminder a week later, with two subsequent postal reminder questionnaires for all non-responders at monthly intervals. However, in 2020 a new sample frame provided mobile numbers and email addresses for the first time, allowing us to test push-to-web strategies with multi-mode contact, using a combination of letter, text message and email. These experiments were embedded within the main survey, meaning fieldwork was carried out at the same time using a subset of the sample. This allowed us to clearly see the impact of each strategy compared with a control and provided

invaluable comparisons between several push-to-web strategies. The experiment groups tested involved:

- Replacing a postcard reminder with alternative text message or email contact[13]

- Moving to a sequential push-to-web mailing strategy (sending initial letter(s) including a link to the online survey only, followed by paper questionnaires in later mailings)[14]

Overall, these experiments aimed to encourage more participants to take part online, therefore reducing printing and postage costs of the survey.

Replacing a postcard reminder with alternative text message or email contact

These experiments involved replacing a postcard, sent after the first mailing, with SMS priority or email priority contact. Otherwise the mailing strategy remained consistent with the main survey. The postcard acts as an effective nudge to participate and we aimed to understand whether this could be achieved using a cheaper method of contact. It is also possible to include a unique personalised survey link within emails and SMS, and we aimed to understand whether this increases online participation.

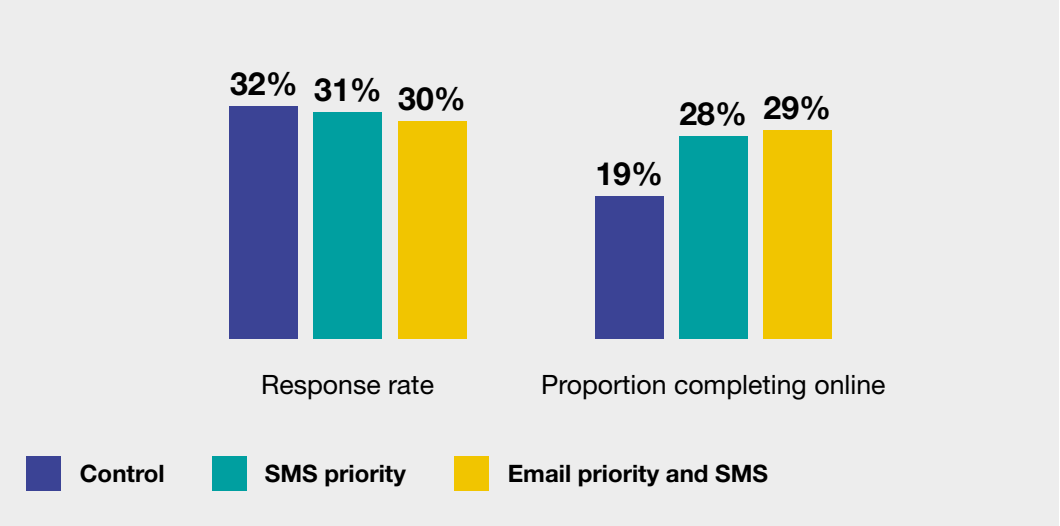
As shown in Figure 9, replacing the postcard reminder increased the proportion of online completes without affecting the overall response rate. Cost analysis showed both methods would provide significant cost savings for NHSEI, though SMS priority had a slightly higher response

[13] The designs tested were (1) SMS priority: replace postcard with SMS where mobile number is available (78% of participants). (2) Email priority and SMS: replace postcard with email reminder where email address is available (27%) of participants, otherwise replace with SMS.

[14] The designs tested were (1) Push-to-web (gentler): remove questionnaire from first mailing, replace postcard with SMS reminder (2) Push-to-web (harder): remove questionnaire from first two mailings, replace postcard with SMS reminder. (3) Push-to-web (harder) with shorter mailing intervals: remove questionnaire from first two mailings, replace postcard with SMS reminder and move timings closer together. (4) Push-to-web (harder) with additional SMS contact: remove questionnaire from first two mailings, replace postcard with SMS reminder and include a second consecutive SMS reminder after mailing two.

rate and was therefore more cost-effective than email priority. Importantly, there were no differences between the demographics and survey responses of these experiment groups and the control.

Figure 9: Simultaneous mixed-mode: response and online completion rates



Base: Response rate – patients invited: Control (2,257,809), SMS priority (11,960), Email priority and SMS (11,962). Proportion completing online – patients who responded: control (719,513), SMS priority (3,712), Email priority and SMS (3,559).

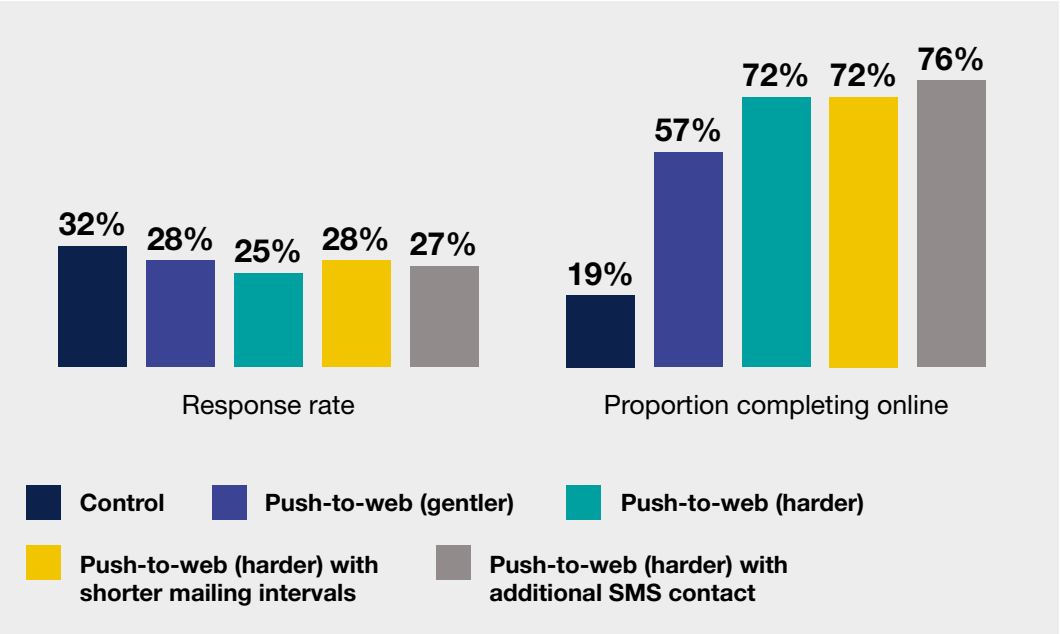
Moving to a sequential push-to-web mailing strategy

Rather than offering both the paper and online versions of the survey at the same time (simultaneous push-to-web) these experiment groups offered a link to the online survey only first, followed by paper questionnaires in later mailings (sequential push-to-web). This is common practice for these types of surveys as an effective method to increase online completion, which is desirable as it is cheaper and provides higher quality data than paper. However, the approach had not been trialled on GPPS, as the survey prioritised maximising response rates to maintain the robustness of GP practice level results (paper completion surveys have traditionally had higher response rates), and the previous sample frame did not provide mobile numbers. This experimental approach was combined with using mobile numbers as part of an additional contact

strategy to try to mitigate potential response rate declines. Various designs were tested, including varying the number of contacts before a postal questionnaire was introduced, the length of time between mailings and the number of mobile contacts between postal mailings.

These experiments were very successful at pushing participants online, but at the cost of lower response rates than the control for all conditions (Figure 10). In addition, as paper questionnaires were not included in earlier mailings these groups responded later in fieldwork, meaning more participants needed to be sent reminder mailings. The lower response rate for these groups also means a larger initial mailing size would be needed to achieve the same number of completed responses, which offsets the saving achieved by pushing participants online, and meant these experiments were less cost-effective than others. Finally, although sequential push-to-web strategies had minimal impact on survey responses or demographics, we found some differences in those reporting awareness and use of online general practice services.

Figure 10: Sequential mixed-mode: response and online completion rates



Base: Response rate – patients invited: Control (2,257,809), Push-to-web gentler (11,961), Push-to-web harder (11,962), Push-to-web harder, with shorter mailing intervals (11,970), Push-to-web harder, with additional SMS contact (11,966). Proportion completing online – patients who responded: control (719,513), Push-to-web gentler (3,374), Push-to-web harder (3,002), Push-to-web harder, with shorter mailing intervals (3,288), Push-to-web harder, with additional SMS contact (3,189).

Implications for GPPS and other research

By testing a wide range of strategies, we provided NHSEI with robust evidence on how to deliver GPPS more cost-effectively while maintaining data quality. For the 2021 survey, SMS reminders replaced the postcard and successfully increased the percentage of online completes to 37% (compared with 19% in 2020). The experiments have also provided invaluable insight into the impact of push-to-web approaches on response rate, online completion, non-response bias and cost-effectiveness. In particular, we found that the proportion of participants completing online can be boosted substantially by using digital reminders and a sequential design, and that for most survey measures and demographics this did not affect sample composition.

Online follow up with non-responders of the Millennium Cohort Study Age 17 Survey

Madalina Radu

Ipsos MORI were commissioned by the Centre for Longitudinal Studies (CLS) at the UCL Institute of Education to carry out an online follow up survey with non-responding study members of the Millennium Cohort Study Age 17 Survey (MCS7).

Introduction to the Millennium Cohort Study

The Millennium Cohort Study (known as Child of the New Century to study members) is one of Britain's world-famous national longitudinal birth cohort studies, four of which are run by the Centre for Longitudinal Studies (CLS) at the UCL Institute of Education.

The Millennium Cohort Study follows over 19,000 young people born in the UK between September 2000 and January 2002. Study members are invited to take part in the survey every 3-5 years. The seventh sweep took place from January 2017 to May 2019, when the majority of the study members were seventeen. During the home visit they were asked to complete a self-completion questionnaire (CASI), a numeric cognitive assessment, and to have their height, weight and body fat measurements taken. Study members were also asked to complete a short online survey following the interviewer visit: an innovative new element for this sweep.

Rationale for the non-responders online follow up

Study members who did not take part in the main fieldwork for the Age 17 Survey were asked to complete a follow up online questionnaire instead. The follow-up included key questions from various elements of the mainstage survey and took up to 20 minutes to complete. It could be done on a device of the study member's choice. The online follow up of non-responders was designed to boost overall response to the Age 17 Survey for key questions. Additionally, it provided an opportunity to re-engage study members who had emigrated and were not part of the issued sample for the main fieldwork.

Contact strategy

Using a push-to-web approach,[15] a total of 2,505 study members were invited to take part in the online follow up survey of non-responders. This included 132 study members who were known to have emigrated and had not been approached for the main fieldwork.

The contact strategy involved three steps, as outlined in Figure 11 below.

Figure 11: Contact strategy for the online follow up

[15] In the push-to-web methodology individuals are initially approached by mail and asked to participate in an online survey. If email addresses or phone numbers were available, reminders with direct links were also sent. More details on the push-to-web methodology can be found at https://www.ipsos.com/ipsos-mori/en-uk/push-web-best-practice-guide

The invitation letter asked participants to enter the short survey URL link into their browser, before entering their unique login ID (as displayed on their invitation letter). The invitation email included a direct personalised link to the online follow up survey, meaning participants could use this link to access the survey without the need to enter their login ID.

The invitation email was sent two days after the invitation letter was dispatched for UK study members, and one week for the study members living abroad. It was anticipated that the invitation email would arrive in participants' inboxes around a similar time to the invitation letter, which was sent first-class. Study members who were non-responders at mainstage for whom there was no confirmed postal address available were only sent an invitation email.

Around one week after the initial invitation, a postcard reminder was sent (first-class) to participants who had received a postal invitation and had not yet taken part in the online follow up. The postcard contained the short URL link for the online survey and a reminder of the participant's unique login ID.

All study members invited to take part in the online follow up survey of non-respondents received a Millennium Cohort Study branded badge as a thank you gift.

Fieldwork timings

The sample was released into field in two batches, on two separate dates. Batch 1, comprised of 498 cases, was released to test the acceptability of the online follow up among non-responding study members in April 2019. Acceptability was defined in terms of the absence of receiving complaints from study members or their families, achieving some productive online completions, and a low proportion of breakoffs. Following the successful launch of batch 1, the second batch was launched comprising of 2,007 cases in May 2019.

The mainstage fieldwork for the Age 17 Survey took place between January 2017 and April 2019, meaning some of the study members may not have had contact with the study for over a year.

Survey design

The content of the online follow up questionnaire, which was chosen on the basis of scientific and policy importance, largely comprised a subset of questions asked in the main Age 17 Survey CAPI (computer assisted personal interview), CASI (computer assisted self-interview), and online questionnaire for study members. It covered key topics such as household composition, education, work status, health and wellbeing, personality, relationships, and social media.

Overall, the online follow up of non-responders adopted a similar mobile-first design to the online mainstage questionnaire. However, it had additional functionality related to data privacy. For example, lock screens were implemented at the end of each section advising that it was the end of the section and respondents could either go back to edit answers, or move forward to 'lock' their answers (and would not be able to return to that section). Moreover, when an abandoned interview was resumed, the back button was not displayed on the initial page, so that the user could not go back to access any answers supplied in a previous session (in case someone else got hold of the letter and logged in).

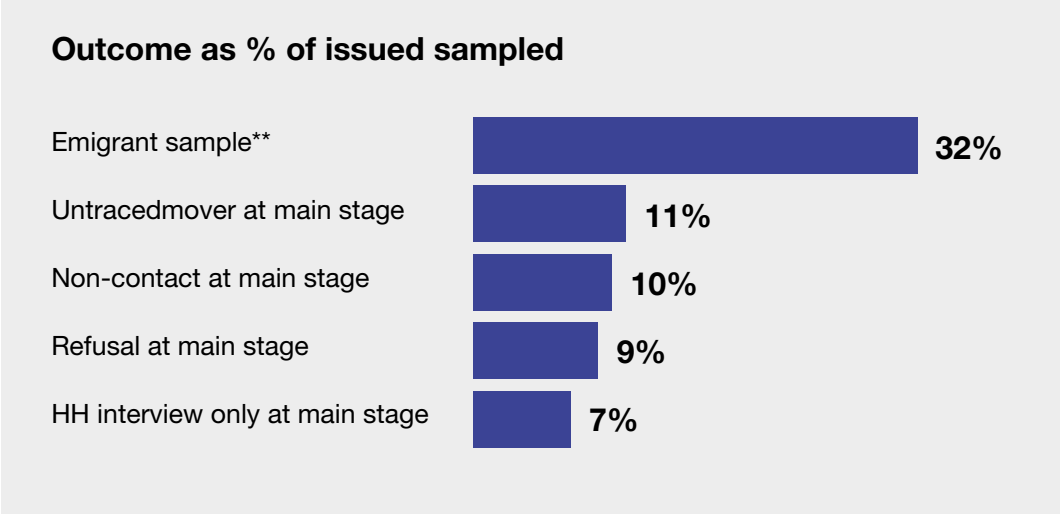
Response to online follow up

Of the 2,505 issued cases, 253 study members completed the online follow up survey either fully (237) or partially (16).[16] Most completions for the online follow up survey were from refusals at the main stage,[17] however this was because this was the largest group attempted online by some distance, accounting for half of all issued cases. In terms of response rates by outcome, as shown in Figure 12 below, the highest level of response was from the emigrant sample at 32%.

[16] A case is defined as 'partially productive' if the study member completed the first set of demographic and contextual questions (country of residence, date of birth, sex and gender, and household composition).

[17] The study members refused to take part in the mainstage survey, but they did not request to be removed from the survey permanently.

Figure 12: Proportion responding to the online survey by mainstage unproductive category



*This is primarily a sub-sample, but could be considered an outcome

Overall, the response rate to the online follow up of non-responders was 10.1%. The response rate for the main stage of the Millennium Cohort Study Age 17 Survey was 73.4%. The follow up online survey of non-responders increased the overall survey response rate to 74.6% (UK sample only).[18]

Conclusion

The online follow up of non-responders proved to be a successful initiative at boosting the response rate for the Age 17 Survey.

The mainstage survey (including the online element) had a high uptake amongst study members. However, the online follow up of non-responders proved a valuable exercise in boosting response by successfully engaging those who didn't take part in the full home visit survey. It offered study members the opportunity to take part online, on any device, only taking up to 20 minutes of their time. It provided greater flexibility for study members to fit it in around their personal

[18] Only study members living in the UK were eligible to take part in the Age 17 Survey.

circumstances (exams, work, relationships etc.), as well as greater privacy. It showed that it is possible to re-contact a proportion of study members who didn't take part initially and obtain a productive outcome with an alternate approach.

No complaints were received from study members about being contacted for the online follow up survey, despite that they had only fairly recently been invited and contacted by an interviewer to take part in the mainstage Age 17 Survey.

Last but not least, the online follow up demonstrated it was an effective way to engage study members who had emigrated.

More information about the online follow up survey, or the Millennium Cohort Study Age 17 Survey, can be found in the technical report here.

Longitudinal study members' views on novel data collection

Lucy Lindley and Polly Hollings

Ipsos MORI was commissioned by the Centre for Longitudinal Studies (CLS) at UCL's Institute of Education to carry out an extensive qualitative research project with study members from their four cohort studies. The Economic and Social Research Council (ESRC) provides core funding for the studies and funded this research project.

Introduction to the longitudinal cohort studies

CLS currently runs four longitudinal cohort studies. These studies follow people throughout their lives, which means the same sample of people is asked to take part in the research at multiple time-points over their lifetimes. The four cohort studies run by CLS follow people born in different generations:

- **The Millennium Cohort Study (MCS)**, known as Child of the New Century to participants, has been following the lives of 19,000 young people born during 2000/2001 in the UK;
- **Next Steps**, which has been following the lives of 16,000 people in

England born in 1989-90. Next Steps started following participants when they were age 14;

- **1970 British Cohort Study (BCS70)**, which has been following the lives of 17,000 people born in a single week in 1970 in Great Britain; and
- **National Child Development Study (NCDS)**, which has been following the lives of 17,000 people born in a single week in 1958 in Great Britain.

Participants in each of these studies, known as study members, are invited to take part in a data collection 'sweep' every few years. The contents of these sweeps vary, but they usually take the form of a face-to-face interview in their home and can include questionnaire measures, cognitive assessments to see how they think, health measurements such as height and weight, and asking for their consent to link their study data to other administrative records.

This research project

This stand-alone research project took place outside of typical data collection sweeps. To explore study member engagement and potential new ways to participate in data collection, Ipsos MORI carried out qualitative research with each of the four cohort studies. Overall, 28 in-depth interviews (10 face-to-face and 18 telephone interviews) and one focus group were carried out with members of each cohort study. A total of 143 study members were involved in this research project (112 from the in-depth interviews and 31 participants across the four focus groups).

These ideas included:

- **New technology examples**: an app for completing short surveys; an app that passively collects and directly shares with the study information about online and GPS activity; and asking members to share information such as screen-time and GPS activity collected on devices e.g. smartphone, activity tracker.

- **Data linkage examples** (i.e. linking their survey data to other information held about them): social media accounts, travel smartcard and banking/ financial records.

For this exploratory research, the examples only provided brief information about the different types of activities.

What was learnt about study members' views on novel data collection methods?

Overall, four key themes emerged when study members were thinking about the novel data collection ideas. These themes were related to participants' understanding of how their data will be collected and used, and influenced how comfortable participants felt about potential participation in these elements in the future.

1. **Study members want a sense of control over their personal data**

   Participants from across all cohorts consistently reported concerns that the novel passive data collection ideas felt like a form of tracking or surveillance. This negative reaction was expressed most strongly in relation to the use of GPS technology.

   As an alternative to the novel passive data collection ideas discussed, participants noted that they were happy to share personal data (such as online activity or locations frequently visited) using the more traditional mode of a survey.

> *"If you got in touch with me and said 'this is what we're doing' then I'm afraid to say I would say 'get lost'… I've got nothing to hide, but at the same time it should be up to me to tell you that, not for someone to just have access to it… it's like someone having control over your life, like someone stalking you."* **– Next Steps**

2. **Study members seek reassurances around who will use the data**

   Participants described different assumptions regarding how the data would be used. Thinking specifically about data gathered regarding online activity, some expressed unease that they may be judged for their online use whilst others saw it as an opportunity for self-reflection – for example, around time spent on social media.

“If I’m spending two hours a day longer on average than anyone else on my mobile phone that’ll make me think ‘actually maybe I should spend less time on my mobile’” **– MCS**

Participants queried involvement from third parties in collecting the data. In part, this concern was grounded in data security issues that have been highlighted through media attention on the topic. For some, the reference to third parties triggered concern around their data being used for commercial gain.

“You’d have to have a lot of trust in them so they’d have to be really be quite exemplary around what they do with the data and who has access to it and what happens to it.” **– BCS70**

3. **Study members are keen to understand the value of the data requested**

It was widely suggested by participants that they would need clear information regarding what data is being collected, why it is needed and how security will be assured. For example, sharing information from an activity tracker was considered acceptable due to the clear rationale relating to the study learning more about its participants’ health.

Despite the concerns raised, there was a general assumption that the types of data collected by these novel methods would add value to the study. Older cohorts, in particular, described a sense of duty to the study and therefore a desire to provide information requested where possible.

“It would be wrong to say no because how else would I justify being part of the study…how I spend money links to birth, parents, how life transpires.” **– NCDS**

4. **Study members seek transparency about what type of data will be shared with the study**

In addition, participants perceived some types of data as being more personal. For example, there was a distinction between information that was considered public (e.g. number of followers on a social media account), and information that was private (e.g. photographs or posts on a social media account). Similarly, there was a distinction between information at an aggregated level (e.g. a summary from a financial budgeting app or a credit score) and more granular data (e.g. information about individual financial transactions). Participants tended to feel more comfortable with public and aggregated level information being shared with the study.

> *"It's personal, that's for your friends."* **– MCS**

> *"The budgeting app is probably better because it's more general… transactions are more in depth, specific and directly from bank so should be more private."* **– Next Steps**

Conclusion

Overall, transparency is key for the future of novel data collection.

Study members want control over how and when they share their personal data, as well as a clear rationale and data security assurances.

For researchers, it is important to:

- Provide clear information about what data is being shared and how the data will (and will not) be used.
- Provide reassurances regarding the security of the data, and any involvement from third parties.
- Follow clear consent processes to ensure participants have control over their data.

- Clarify the value of the data to provide clear rationale for why it is being requested.

These findings have a clear wider application and provide sound principles for any studies seeking to collect personal data from its participants, especially where this is personal data that they may have not been asked to share before or are being asked to share in news ways. The findings echo those found by other studies (e.g. a recent public dialogue for the Centre for Data Ethics and Innovation).[19]

For more information about the cohort studies, please visit https://cls.ucl.ac.uk/.

[19] https://www.ipsos.com/ipsos-mori/en-uk/public-attitudes-towards-online-targeting

Adapting Cognitive Interview protocols for Surveys of Sensitive Topics with Children

Anna Mackin

Cognitive interviewing is a well-established method for pre-testing questionnaires. The approach involves using techniques derived from qualitative in-depth interviews to understand how participants interpret survey questions and, crucially, whether their interpretations are consistent with how the questionnaire drafters intended their survey questions to be understood. As such, it is particularly important for pre-testing questions in new and emerging topic areas, where there are not many existing survey questions to draw on.

The UNICEF Disrupting Harm survey, which aimed to understand the extent to which children and young people (aged 12-17) are exposed to harmful online content exploitation in 12 countries in Southeast Asia and Southern and Eastern Africa, was one such survey in a comparatively new area.[20] However, the sensitive nature of the questions included in the questionnaire and the young age of the participants presented challenges for applying standard cognitive interviewing protocols, which would typically require the participant to disclose how they answered each survey question to the interviewer. Therefore, the challenge for Ipsos was to create a cognitive interview protocol that would still allow

[20] Ipsos delivered nationally representative, random probability samples with in-home interviews with children aged 12-17 and a parent during 2021 in Cambodia, Indonesia, Malaysia, Philippines, Thailand, Vietnam, Ethiopia, Kenya, Mozambique, Namibia, Tanzania and Uganda. A cognitive testing phase preceded the survey.

us to gain actionable insights about how the survey questions were being interpreted but without requiring participants to tell the interviewer how they responded to the survey items. In addition, we sought to reduce the likelihood that the child participants would be made uncomfortable by the cognitive interview.

Below, we describe how we created a cognitive interview protocol for this survey.

Indirect probing to understand while preserving participant privacy

Using focused interviewer-led probes is considered more appropriate for cognitive interviewing child-participants than the alternative "think aloud" approach which places a large burden on the participant by requiring them to articulate in free-form the thought processes that they are going through while responding to a survey question. However, the "verbal probing" approach still typically involves the participant directly telling the interviewer their answer to the survey question, for example, *"can you tell me how you arrived at that answer choice?".* This presents a problem for testing a sensitive questionnaire which is designed to be self-completed.

To address this issue, Willis (2005)[21] advocates for indirect probing as a valid and useful way for testing sensitive questions. The idea is that the interviewer does not need to ask the participant to directly respond to the survey question to learn how the participant understands the question. Following this approach, the child participants in the cognitive interviews for the Disrupting Harm survey were first asked to self-complete a paper questionnaire before taking part in the cognitive interview. Once the child had completed the questionnaire, the interviewer used a series of showcards to remind the participant of the wording of each question, along with structured probes to review how the participant had understood each question.

[21] Willis, G. B. (2005). Special applications of cognitive interviewing. In Cognitive interviewing (pp. 176-206). SAGE Publications, Inc., https://www.doi.org/10.4135/9781412983655

The following steps ensured that the interviewing protocol was appropriate for the sensitive nature of the self-complete questions:

- Interviewers were instructed never to ask about the participant's specific answers.
- Probes in the discussion guide centred on the format of a question (for example, *"How easy or difficult would it be for someone your age to answer this question?"* or their understanding of terms within the question (for example *"What do you understand by "risky").* Therefore, participants never needed to reveal which answers they selected to respond to these probes.
- Participants were given alternatives to verbally responding to the interviewer's probes. For example, some probes asked participants to explain how well they understood sensitive terms such as "homophobic remarks". As children might not be comfortable verbally discussing their understanding of such terms with the interviewer, they were also given the option to write down their response on a piece of paper and hand it to the interviewer instead.

Exploring how to reduce item-nonresponse

In addition to being tricker to test using standard cognitive interviewing techniques, questionnaires on sensitive topics are also prone to high levels of item nonresponse, where participants skip certain questions that make them uncomfortable. Therefore, the cognitive interviews for the Disrupting Harm survey presented a valuable opportunity to learn whether any changes could be made to the questionnaire wording or mode of delivery that would make it less likely that children would skip sensitive questions. Rather than only being asked probes to tease out their understanding of the questions, as in a standard cognitive interview, participants were also asked whether they felt the questions were appropriate for their age group and whether they were happy with the self-complete format. Some examples of these probes are provided below:

- *How do you think people your age in your country will feel about answering these questions?*

- *These questions would be asked in the **self-completion part of the household visit** (i.e., you answering on the interviewer's laptop/tablet in private, in your home. The interviewer would never see your answers), how comfortable, or uncomfortable, would you be with this?*

What did we learn?

Although interviewers did not have access to the participant's individual responses via the indirect probes, they could still identify which aspects of the sensitive questions were poorly understood. For example, one question asked whether respondents had ever shared inappropriate photos of themselves with someone else online and contained a follow-up question about whether the participant took steps to "make sure that they could not be recognised". In the cognitive interview, no child was directly asked this survey question or required to tell the interviewer how they responded, but they were asked to explain what they understood by the term "cannot be recognised". Responses to this probe revealed that children in many survey countries had trouble understanding this phrase, and the translations of the phrase were accordingly replaced with more age-appropriate versions.

Through the probes about the mode of delivery of the questionnaire, we also uncovered valuable insights for removing potential sources of nonresponse. For example, we learned that in some of the survey countries, a tablet was not perceived by children as a safe or secure method of self-completing a survey, as they had concerns that the tablet made it easier for their answers to be shared with others. As a result, the section of the participant information sheet which discussed privacy was updated to make it clear that there would be no way for the interviewer to see the participant's answers once they had finished the self-complete survey and returned the tablet.

These examples show how qualitative interviewing can still be an extremely valuable part of pre-testing a survey questionnaire even when the sensitivity of the questionnaire precludes interviewers asking about the specific responses that the participants selected.

Survey Research Methods Centre

The Ipsos Survey Research Methods Centre (SRMC) is a specialist unit that provides expertise on a wide range of survey methodological matters to researchers across the company, and to clients. This methodological work includes developing practical sample designs and adjustment procedures for Ipsos surveys, and developing survey approaches and materials designed to maximise participant engagement and reduce survey error. The SRMC is a widely respected methodological unit with a mission to disseminate quantitative methodological knowledge and expertise across the company and across the social research industry more widely.

The SRMC actively maintains links with survey methodologist academics and regularly publishes papers in academic journals and at academic conferences. The SRMC also conducts a range of methodological studies, including feasibility studies for Government surveys, experiments designed to improve the implementation of ongoing studies, and more academically inspired methodological research. The team comprises a core group of statistical and methodological experts, based in the UK and Belgium, with links to experts based across the Ipsos global network.

Contact:

Tom Huskinson
Head of the Survey Research Methods Centre
tom.huskinson@ipsos.com

Andrew Cleary
Director of International Research Methods
andrew.cleary@ipsos.com

GAME CHANGERS

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