

Implementing a Blaise 5 Mixed-Mode Solution

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1. Introduction

The Office for National Statistics (ONS) has been conducting the Opinions survey for several years as a face-to-face interview. It is a regular omnibus survey conducted on behalf of sponsoring organisations, who use it as a vehicle to obtain opinions on topics of interest. A decision was made to move the survey to a mixed-mode CAWI (Computer Assisted Web Interviewing) and CATI (Computer Assisted Telephone Interviewing) survey, and a phased approach was planned to achieve this. In October and November 2017, a CATI pilot exercise was conducted and a fully mixed-mode CATI/CAWI survey was then carried out in February and March 2018.

Resource pressures meant that the existing telephone interviewing systems using Blaise 4.8 would be used, as opposed to using the Blaise 5 call scheduler. Regarding the web element, the current corporate position is that the electronic questionnaire tool (eQ) which the ONS is in the process of developing should be used for web survey. However, delays in the rollout of the eQ tool meant that an alternative solution was required to meet the February deadline. The decision was made to use Blaise 5 for the web-collection instrument.

2. Conducting the survey

2.1 Methodology

The Opinions survey sample consisted of 2010 household cases, drawn from the fifth wave of the Labour Force Survey (LFS) and based on age and gender. A named adult from each of the household cases was identified, and this person had to be the individual who completed the survey.

One issue that was identified early on was the treatment of personal data brought forward from the LFS. The telephone survey would continue to reference previous LFS responses provided by individuals, and the interviewer would ensure as far as practicable that the correct respondent was being spoken to. The web survey required a new approach, due to concerns regarding personal data security and who had access to responses previously collected as part of the LFS.

The approach taken for the web survey was to display the name of the sampled person invited to complete the survey. A statement was included in the questionnaire requesting whoever was completing the form to confirm that they were indeed the sampled person. No previously collected data from the LFS was pre-loaded into the web survey database, avoiding any data confidentiality issues.

2.2 The collection period

There was a three-week survey period; for the first week respondents were invited to complete the survey online. Postal reminders were sent towards the end of the first week to try and maximise online response. If they had not completed the survey online after the first week, then the second week would see the interviewers phoning respondents. The online questionnaire would then become unavailable for the third week, when all interviewing was conducted by phone.

3. Technical solution

3.1 The web survey

Blaise 5 was the only serious contender for conducting the web survey. The ONS has used Blaise for many years, and its staff have become proficient in coding survey questionnaires using the software. However, the layout template designer was a new concept that we were using for the first time on a live questionnaire. The biggest challenge was to create effective layout templates in the time available, particularly as staff capability in using it was still being developed.

The web survey was being hosted by colleagues at the Northern Ireland Statistics and Research Agency (NISRA). Due to Information Assurance concerns, the ONS did not have direct access to the Blaise server. Whilst not ideal, NISRA implemented a workable solution which proved effective for the small-scale pilot. A scheduled task would copy the Blaise web data from the server to a secure ftp site, from which the ONS could retrieve the data to be incorporated into its systems.

The Opinions survey database pre-populated with the sample was installed on the NISRA server, with each case having a unique identifier. An accompanying login database, with the same case identifiers and their unique respondent access codes was also installed. The access codes had previously been mailed to the sampled individuals.

A link to the Opinions survey was provided on the ONS website, from which respondents would be redirected to the questionnaire hosted by NISRA. The Opinions questionnaire then called the login questionnaire. On the successful input of the user access code that had previously been sent to the respondent, the corresponding case would then be retrieved from the pre-filled Opinions database for completion.

3.2 The telephone survey

The ONS Telephone Operations (TO) currently uses the Blaise 4.8 call scheduling system. The Opinions survey had previously been conducted in the TO as part of the transition in moving the survey from a face-to-face to telephone exercise. Time constraints in the mixed-mode project meant that the only practical option was to continue using Blaise 4.8, rather than utilising the Blaise 5 call scheduler.

The web element of the mixed-mode pilot would increase the number of respondents contacting the Survey Enquiry Line (SEL) team in the TO. The SEL deals with any number of calls from respondents, ranging from queries, complaints, refusals to arranging appointments. For a previous unrelated pilot SEL operatives would record outcomes of respondent calls relating to the web survey in a Blaise 4.8 instrument.

For the Opinions mixed-mode the decision was made to incorporate the SEL instrument into the main telephone survey questionnaire, ensuring that the TO Blaise database would always have the latest case information available to the scheduler. This would include, for example, those respondents contacting SEL after receiving the advanced letter to confirm their refusal to take part.

3.3 Bringing the modes together

One of the more significant challenges was ensuring the CATI database was consistent with the latest responses from the web. Hosting each mode on separate databases in different organisations was always going to introduce a time lag between the consistency of the web and phone data.

On opening the web questionnaire, after reaching a specific point in the questionnaire a status field is set to partially completed. At the end of the questionnaire the status is set to completed. If the respondent breaks off from the web questionnaire without completing it, the status will remain as partially completed. This ensured that the case would be available for telephone interviewing if not subsequently completed by the respondent on the web.

The web data collected in Blaise 5 was downloaded from the NISRA web server, and then converted using Manipula to XML format. To enable the conversion from XML to the Blaise 4 CATI database, the Blaise5to4Source.exe was used to create a Blaise 4 structure of the web questionnaire.

A Blaise 4 Manipula script was then used to copy the XML data into the Blaise 4 CATI database. All web cases, irrespective of whether they were completed or partially completed, were copied. This was done at regular intervals during the day, reducing the risk of completed web cases being selected by the call scheduler.

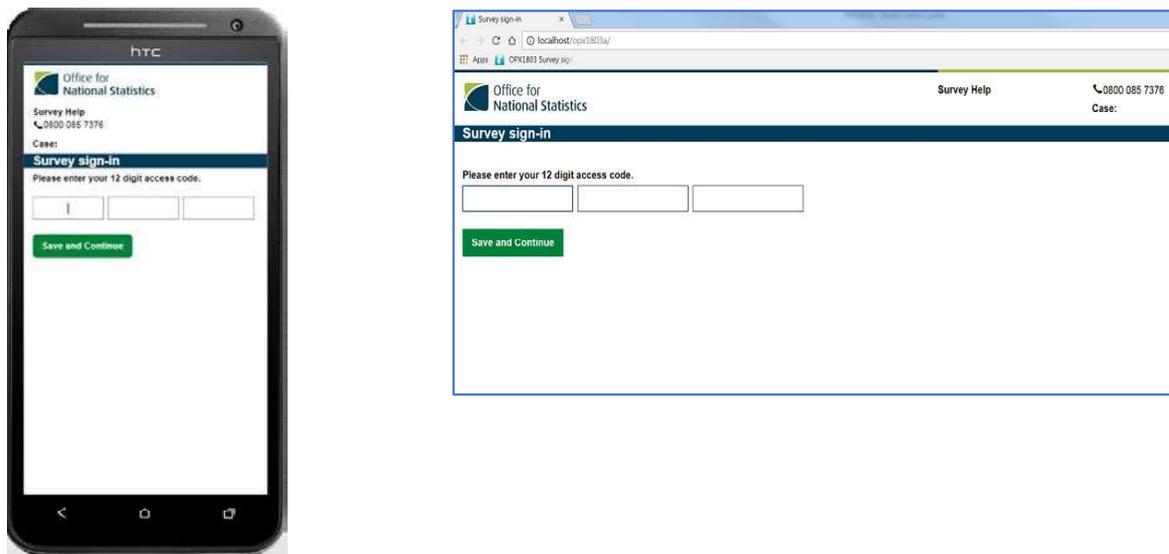
As previously mentioned the LFS data was not pre-loaded into the web database. Consequently, the Manipula transfer of web data to the CATI database would empty the pre-filled LFS data in that database for the relevant case. The reasoning for this was that any data collected on the web would be timelier than data collected in the last LFS wave.

3.4 Designing the web questionnaire

We decided to separate authentication into a separate sign-in questionnaire. On successful validation of the 12-digit access code previously sent to the respondent, the Opinions questionnaire was then launched.

The screen design of the Blaise 5 web pages was heavily influenced by the look and feel of the standards employed by the corporate eQ tool. These in turn refer to the UK Government Digital Standards, which most UK Government departments adhere to. The Blaise 5 layout designer made it possible to replicate the screen designs across different device screen sizes.

Figure 1. Mobile and laptop survey sign-in screens

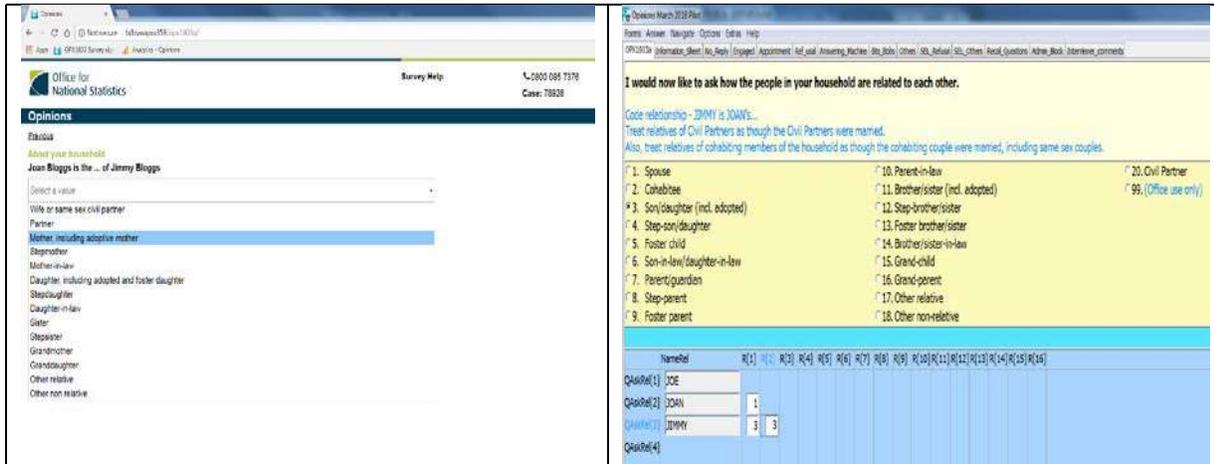


As this was the first time that layout templates designed in Blaise 5 would be used in an ONS web survey, considerable effort was made to ensure that they displayed as intended across different platforms. A group of volunteers from within ONS brought their devices to drop-in sessions to see how the templates rendered on a variety of different screen sizes and browsers. These sessions proved invaluable, and the findings influenced further changes to the templates.

The structure of the web questionnaire was often influenced by the display requirements to maximise the respondent experience when completing the survey. This was primarily driven by the research done as part of the development of another online survey using the eQ tool. This often conflicted with the structure of the CATI questionnaire, which had been designed over time to enable the interviewers to conduct the survey quickly.

The family relationship questions are a good example of the design having to reflect the needs of the questionnaire user. The web questionnaire was designed to collect relationships between household members; these relationships were collected one page per person. The CATI questionnaire has historically had a grid approach to collecting the household relationships, with interviewers being able to navigate quickly through many repeating questions for all the household members.

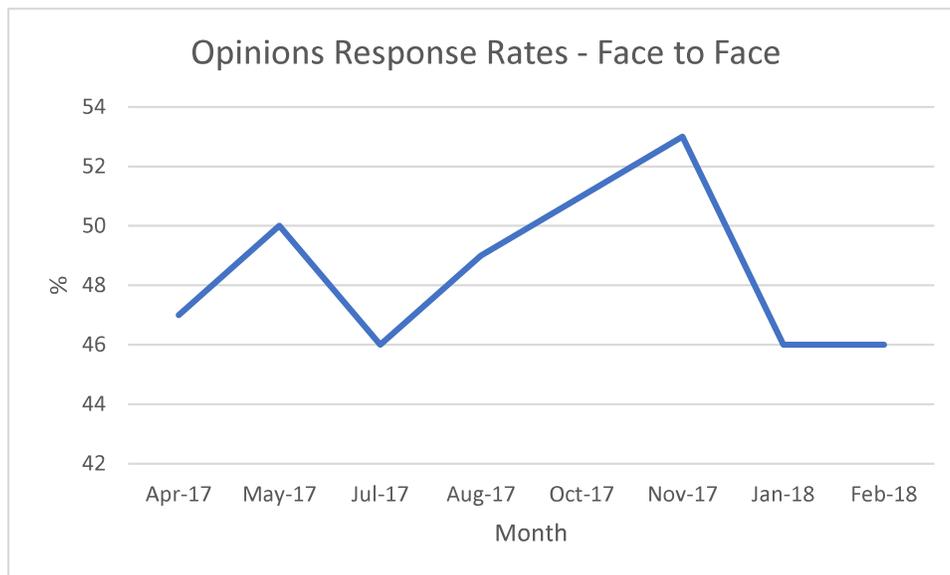
Figure 2. Web vs. Phone - Comparison of Relationship Questions



4. The results

A key driver for conducting the mixed-mode survey pilot was to evaluate the effect on response rates, which have been showing a decline over the last few years. Prior to the mixed-mode pilot, response rates for the Opinions CAPI survey ranged from 46% to 53% over a 12-month period (see Table 1).

Table 1. Opinions Response Rates – Face to Face



The mixed-mode pilot saw a substantial increase in response rates when compared with the face-to-face interviews. The sample was drawn from the last wave of the Labour Force Survey (LFS), and consequently a slightly higher response due to more compliant respondents might be expected. However, it could also be

argued that respondents at this stage of survey cycle (LFS has five waves) may be suffering from survey fatigue. Nevertheless, the response rates for the mixed-mode pilot were encouraging, as Table 2 below shows.

Table 2. Response as percentage of issued sample

Completion	February	March	Total
Online	24.5	27.6	26.1
Partial	2.7	1.7	2.2
Telephone	34.1	31.4	32.8
Total	61.3	60.7	60.8

Of all those who responded to the survey, telephone was the most successful mode for achieving completed interviews. A small number of respondents only partially completed the web survey, but a healthy number of respondents completed the web form.

Table 3. Response as percentage of all respondents

Completion	February	March	Total
Online	40.0	45.8	42.9
Partial	4.4	2.2	3.3
Telephone	55.6	52.0	53.8

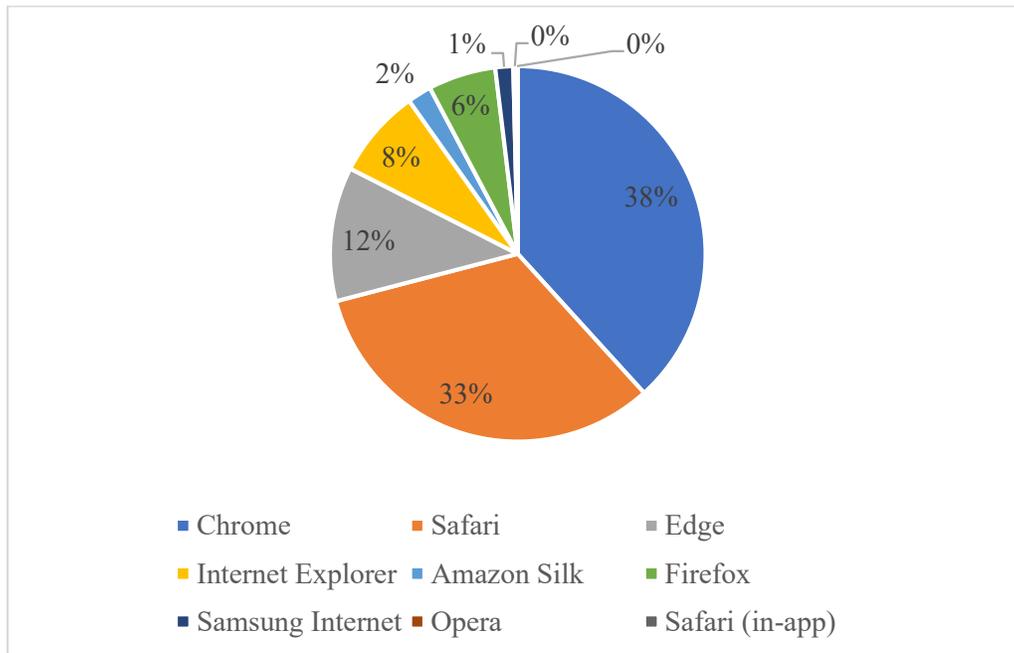
The Opinions questionnaire is comprised of several distinct sections. The first section, collecting demographic information about the household, saw the largest respondent drop-off in both collection months. The sections collecting responses to questions provided by sponsoring clients saw smaller drop-off rates as Table 4 demonstrates.

Table 4. Response as percentage of online respondents

Completion	February	March	Total
Full	90.1	94.2	92.2
Internet Access (section 3)	1.8	2.3	2.1
Smoking/e-cigarettes (section 2)	0.8	0.7	0.8
Demographics (section 1)	7.3	2.8	5.1

A variety of browsers were used to view the Opinions survey landing page on the ONS website. Table 5 shows that over the two survey periods, Chrome and Safari were clearly the most popular browsers, ahead of the Microsoft products. The unique pageview data was collected using Google Analytics.

Table 5. Opinions web page viewed by browser



5. Reflections on the mixed-mode project

Initial training and support from Statistics Netherlands was essential to using the Blaise Resource Database effectively. It is an extremely powerful tool, and for the beginner it can be daunting. Features such as automatically applying templates based on type names has led us to devise new questionnaire standards. One Resource Database and standard naming conventions will be used across all surveys. Users can then create questionnaires without the need to manually apply templates in the layout designer.

Statistics Netherlands were quick in resolving issues. Some were genuine bugs with the software, but the majority were due to programmer inexperience, particularly in creating the layout templates.

The advantages of a questionnaire that truly supports mixed-mode cannot be overstated. The Opinions questionnaire undergoes a lot of code changes during the testing phase. Duplication of effort replicating these changes across two questionnaires was time consuming, introducing a significant risk of inconsistency between the versions. A single database associated with the single questionnaire instrument, pre-loaded with all sampled cases available to any collection mode, is essential. This would avoid the timing issues that are inevitable when two modes are conducted with two separate questionnaires and databases.

The pilot web questionnaire demonstrated a lot of the layout functionality that is available in Blaise 5, but there were elements that could have been approached more effectively if time and resource had allowed. One such area was accessibility, and future work will include this essential work.

We did not fully realise the potential of paradata. We know that Blaise 5 offers a lot of functionality, but a restriction for us in NISRA hosting the survey was access to the audit data. The Opinions audit data shared the same audit database table as surveys conducted by NISRA. Unfortunately, there was not enough time to instigate a system to extract the relevant details for Opinions, and data security issues prevented the

whole database table from being copied. Obviously there was a lot of interest in the timings of the completion of individual questionnaire modules.