Mixed-mode surveys of the general population

Results from the European Social Survey mixed-mode experiment
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Summary

This summary reports on a sequential mixed-mode experiment that took place in the UK alongside the face-to-face main round of the 2012 European Social Survey (ESS). The study aimed to test the feasibility of data collection among a randomly selected sample of addresses who were initially invited to take part via a web questionnaire, and were then followed up face-to-face if they did not respond online.

Key findings include:

- The response rate to the web phase of the mixed-mode survey was 21%, rising to 39% after the face-to-face follow up. This was considerably lower than the response rate obtained for the (face to face only) main ESS survey, which was 55%.

- The profile of the sample who took part in the web phase of the mixed-mode survey differed from the profile of those who took part in the main ESS survey. The web sample was younger and more socio-economically advantaged (they had spent more time in education, were more likely to be in paid work and more likely to live in mid to high income households). Once the face-to-face sample from the mixed-mode study was combined with the web sample, these differences were reduced, though they were not eliminated.

- Once people had started the survey, interview length did not seem to be a major issue – 81% of respondents completed the survey in a single session and there were very few break offs.

- Large numbers of people did not comply with the instructions that were provided to ensure that a household member was randomly selected by the interview program. This raises doubts about the best way of selecting a single respondent from a household with more than one eligible adult when no interviewer is present.

- Our analysis suggests that if additional resource could be used to boost the overall mixed-mode response rate there would still be considerable cost savings when compared with the costs of a face-to-face only design.
1 Introduction

Survey designers face a continuous tension between maximising survey quality and containing costs, particularly in the context of falling response rates. The web and mobile phones have given researchers opportunities to explore whether using a variety of different modes of data collection might broaden participation (by offering respondents more choice about when and how to take part) and save costs (by reducing the number of respondents interviewed via more expensive modes).

The use of a mixed-mode approach in the UK is complicated by the fact that the only credible sample frame for the general population is an address-based one, the Postcode Address File. So any initial contact with a sampled address must be by letter or a personal visit; no telephone or email address information is available (Nicolaas et al, 2014).

This summary reports on a sequential mixed-mode experiment that took place in the UK alongside the main round of the 2012 European Social Survey (ESS). The study aimed to test the feasibility of data collection among a randomly selected sample of addresses who were initially invited to take part via a web questionnaire, and were then followed up face-to-face if they did not respond online.

In this summary we explore the following questions:

- What impact does a mixed-mode design have on response? To assess this we look at how the total response rate for the mixed-mode experiment (online and face-to-face) compares to the response rate achieved in the main face-to-face ESS survey. We also consider whether different incentive values affect response.

- What is the impact of a mixed-mode design on who participates? We assess how those who took part in the online survey to the sample who took part in the main face-to-face ESS.

- What are the practical implications of carrying out a web survey of the general population? Here we consider how well different methods of random respondent worked. We also look at how long the interview took and how many dropped out before completing it.

- Finally, what are the cost implications of a sequential mixed-mode design? We consider what savings may be incurred by a mixed-mode design.
2 Details of the experiment

The experiment involved sampling 2,000 addresses from the UK Postcode Address File and contacting them by letter. The letter invited potential respondents to complete the ESS survey online and included a £5 voucher which could be used even if the recipient did not take part in the study (in other words, an unconditional incentive).

There were two additional experimental elements to the study:

- The ESS requires an interview from a single randomly selected adult within the household. We tried two different methods of respondent selection (the next/last birthday method versus automated web selection).
- We tested two different values of conditional incentives (£15 and £35) to see what impact this had on response rates.

After a reminder process, a proportion of non-respondents (500 addresses in 20 sample points) were visited by an interviewer who tried to carry out a face-to-face interview. Anyone who participated at this stage in the research was given a £5 voucher. This element of the study allowed us to gain an understanding of how initially offering an online interview affects response to a subsequent interviewer visit.
3 Key findings

3.1 Response rates

Table 1 shows the response rates obtained in the mixed-mode experiment and the main ESS survey. Response to the main ESS (where all interviews were carried out face to face) was 55%. The response rate to the ESS web survey was 21%. Among the sub-group that was then followed-up by a face-to-face interviewer, the combined web and face-to-face response rose to 39% but was still substantially lower than the 55% achieved on the main ESS survey.

The two different values of the conditional incentive offered to all online participants led to a small but insignificant difference in response. Among the group promised £35, 21.5% took part, compared with 19.6% among those offered £15.

There are a number of possible reasons why the combined response rate (web and face-to-face) achieved by the ESS experiment is so much lower than the response rate for the main ESS, which uses face-to-face methods only:

- The ESS experiment offered a lower value incentive (£5) to those who subsequently took part face to face than the one that was initially offered for the online interview (£15 or £35); this may well have put some people off participating at this later stage. Further investigation into incentive values for mixed-mode surveys would be useful.

- More generally, perhaps having had the opportunity to participate online and deciding not to do so affects people’s willingness to take part later face to face, irrespective of the value of the incentive. A similar, but less pronounced, difference in response rates was found on Understanding Society’s Innovation Panel wave 5, where the overall response rate among the mixed-mode group (74%) was slightly lower than the response rate (78%) among those only approached face-to-face (Burton, 2013). This has clear implications for respondent communication and interviewer training.
One clear practical message from the experiment relates to the extent to which the availability of different modes overlaps. The ESS experiment kept the web survey open during the initial part of the face-to-face phase, so that if people would rather take part online they still had that opportunity. However, anecdotal feedback from interviewers suggests this caused some difficulties, as it made it easy for potential respondents to say they would complete the study online (and then not do so).

3.2 Sample profile

To what extent does the sample profile of those interviewed as part of the mixed-mode experiment differ to the profile of the main ESS sample? In this section we assess this as follows:

- We compare the profile mixed-mode web sample with the main ESS sample, focusing on sex, age, education, employment status and income.
- Then we assess how the profile of the mixed-mode experiment group changes when you add in those who were interviewed face-to-face after the web phase.

In all cases we use unweighted data. When weighted data are available (produced by the ESS Core Scientific Team), more comparison of substantive questions will be useful. This will provide indication of any potential mode effects.

Age

The profile of the mixed-mode web sample is younger than that of the main ESS sample. The most pronounced difference relates to the proportion in the 25-44 age group – they account for 28% of the main ESS sample (the green bar) but 43% of the mixed-mode web sample (the pale purple bar). This gap shrinks, but does not disappear, once the face-to-face interviews from the mixed-mode sample are added (the dark purple bar). The opposite pattern is true in relation to the 65 plus age group; they are under-represented in the mixed-mode web sample, with this gap closely partly once the mixed-mode face-to-face sample is taken into account.

![Figure 2 Sample profile by age](image-url)
Sex

As is the case with many surveys, both the main ESS and the mixed-mode sample are disproportionately female. This is most marked among the mixed-mode web sample, and reduces slightly when the mixed-mode face-to-face sample is taken into account.

![Sample profile by sex](image)

**Education**

The mixed mode web sample has spent longer in education than the main ESS sample. Nearly half (49%) the main sample spent between nine and 12 years in education, compared with just 26% of the mixed-mode web sample. Meanwhile, 11% of the latter had spent 20 years or more in education, double the rate found among the main ESS sample. Once the mixed-mode face-to-face sample is taken into account this gap difference in education reduces but does not completely disappear.

![Sample profile by education](image)

**Employment status**

The mixed-mode web sample was much more likely to have been in work in the preceding seven days – this accounted for 71% of respondents, compared with just...
47% of the main ESS sample. This difference shrank once the mixed-mode face-to-face sample is added, but did not diminish completely (54%).

**Household income**

The mixed-mode web sample was more affluent than the main ESS sample, being more likely to report a mid- or high-range household income. This gap reduces once the mixed-mode face-to-face sample is taken into account, but does not vanish completely.

![Graph showing sample profile by household income](image)

*Figure 5 Sample profile by household income*

The mixed-mode web sample was much less likely than the main ESS to give a ‘don’t know’ response to the income question, a gap that did not close very much once the mixed-mode face-to-face sample was added. The mixed-mode web sample was also more likely not to answer the household income question at all. It is worth noting that in the face-to-face it isn’t possible to leave this question blank, but we did so in the online version due to the lack of interviewer to explain.

![Graph showing sample profile by non-response to household income question](image)

*Figure 6 Sample profile by non-response to household income question*
Summary

Overall, there are considerable differences between the mixed-mode web-only sample and the main ESS sample. These mirror differences found in other experimental work comparing online and face-to-face samples of the general population (TNS BMRB, 2013). Although many of these differences are reduced once the face-to-face element of the mixed-mode sample is taken into account, some do not disappear entirely. The most pronounced final differences between the two samples relate to education (42% of the mixed-mode sample were in education for between 9 and 12 years, compared with 49% of the main ESS sample) and income (33% of the mixed-mode sample are in middle income households compared with 25% of the main ESS sample). There is also a notable difference between the high proportion of people in the main ESS sample who gave a ‘don’t know’ answer to the household income question (17%) and the far lower proportion who did so in the mixed-mode sample (4%).

3.3 Practicalities

The vast majority of people, 93%, of those who began the ESS survey online completed it. Two per cent only completed the majority of the interview, and five percent broke off and did not get very far into the interview before aborting.

81% of responders completed the web survey in a single session. The median session length was 42 minutes, but the median total length (once the fact that some people required multiple sessions to finish) was 52 minutes. This is very similar to the interview length for the main ESS.

ESS, like many surveys, requires interviewers to carry out a random selection at any addresses that contain more than one eligible adult, to identify who they should interview. This clearly poses a challenge for web surveys as any random selection will need to be carried out by someone within the household (who could either inadvertently or deliberately get the selection wrong). The experiment tested two approaches:

- One half of the sample were told to carry out the selection according to who in the household had had the most recent or next birthday (half this group were asked about the most recent birthday, and the other half the next birthday).
- The other half were asked to fill in details of all household members at the start of the online questionnaire. If there was more than one eligible person the program then selected one at random to take part. Towards the end of the interview, the details of the interviewed person were collected again, allowing us to compare these with the details of the selected person given at the start of the interview.

If we exclude cases where the respondent was the only adult (and therefore no random selection was necessary), in 60% of cases insufficient information was provided to allow us to see whether the respondent was the selected respondent. Of those cases where it was possible to cross-check the details of the actual respondent with the selected respondent, around two thirds (68%) appeared to comply with the instructions while a third (32% did not). This raises questions about this approach to respondent selection is feasible.
3.4 Costs

One of the main appeals of mixed-mode surveys is the reduction in cost that is assumed to come from introducing modes that are cheaper than face-to-face interviewing. In this section we assess the cost implications of some of these findings.

We used the mixed-mode experiment to calculate the per interview operational costs of a face-to-face and web interview (that is, the costs of each interview excluding management and development costs). This produces a ratio of 5.7:1; each face-to-face interview cost nearly six times that of a web interview.

What does this mean in practical terms?

- Let’s assume a sample of 1,000 eligible cases achieving a 55% response rate face to face – that is, 550 interviews. If we assume that 5.7 is a unit of currency, the cost of this exercise would be 5.7 x 550 interviews which is 3135 units. This is Option 1 bar in Figure 7 below.

- Option 2 shows the equivalent cost of the same 1,000 eligible cases going through a sequential mixed mode similar to that used for the ESS mixed-mode study. Assuming the same response rates we obtained would apply, this would produce 200 web interviews (at a cost of 1 unit each) and 190 face-to-face interviews (at a cost of 5.7 units each). This option is of course much cheaper than Option 1, but also has a far lower response rate and thus a lower achieved sample size.

- What would happen if we did get a 55% response rate overall to a mixed-mode study? The cost of this is shown in Option 3. However, this assumes that obtaining a face-to-face response would incur no additional costs per interview, which seems unlikely.

- So Option 4 shows the cost of a mixed-mode design that includes additional incentives to make the face-to-face phase more attractive. The key point here is that even with these additional costs, the mixed mode design is still substantially cheaper than the single mode face-to-face design.
3.5 Conclusions

We conclude by addressing the four questions we posed at the beginning of this report:

- **What impact does a mixed-mode design have on response?** Our study found that the final response rate for the ESS sequential mixed-mode survey (web followed by face to face) was considerably lower than the response rate obtained for the main ESS survey (face to face only). The value of the incentive offered for the web-phase did not have a significant bearing on response.

- **What is the impact of a mixed-mode design on who participates?** The profile of the sample who took part in the web phase of the mixed-mode survey differed from the profile of those who took part in the main ESS survey. In summary, the web sample was younger and more socio-economically advantaged (they had spent more time in education, were more likely to be in paid work and more likely to live in mid to high income households). However, once the face-to-face sample from the mixed-mode study was combined with the web sample, these differences were reduced, though they were not eliminated.

- **What are the practical implications of carrying out a web survey of the general population?** Once people had started the survey, interview length did not seem to be a major issue – 81% of respondents completed the survey in a single session and there were very few break offs. However, large numbers of people did not comply with the instructions that were provided to ensure that a household member was randomly selected by the interview program, raising doubts about the best way of selecting a single respondent from a household with more than one eligible adult.

- **What are the cost implications of a sequential mixed-mode design?** Our analysis suggests that if additional resource could be used to boost the overall mixed-mode response rate there would still be considerable cost savings when compared with the costs of a face-to-face only design.
4 References

