

# Sampling

## Sample design

The sample for Food and You 2 was selected from the postcode address file (PAF) in England, Wales and Northern Ireland. The sample of addresses was unclustered within each country.

Households were sampled to achieve interviews in 1,000 households in Wales and Northern Ireland, and 2,000 households in England (Table 1). In other words, a greater proportion of households were sampled in Wales and Northern Ireland compared to England. This was done to improve the precision of estimates for Wales and Northern Ireland.

The size of the issued sample in each country was calculated by dividing the target achieved sample by estimated address yield (proportion of addresses with at least one productive response). Yield estimates were based on actual yields obtained in Waves 2 and 3. An additional reserve sample was drawn to be issued (in whole or in part) if response rates were lower than anticipated (which they were not).

**Table 1: Sample sizes and assumptions for each country**

Country	Main sample	Assumed address completion rate	Total sampled
England	6,667	30%	10,000
Wales	3,448	29%	5,172
Northern Ireland	4,000	25%	6,000
Total	14,115	28%	21,172

The sample of main and reserve addresses were stratified proportionately by region (with Wales and Northern Ireland being treated as separate regions), and within region (or country) by local authority (district in Northern Ireland) to ensure that the issued sample was spread proportionately across the local authorities. National deprivation scores were used as the final level of stratification within the local authorities (in England the [Index of Multiple Deprivation \(IMD\)](#), in Wales the [Welsh Index of Multiple Deprivation \(WIMD\)](#) and in Northern Ireland, the [Northern Ireland Multiple Deprivation Measure \(NIMDM\)](#)). In practice stratification was achieved by ordering the population of PAF addresses by (i) region (country) (ii) local authority (district) within region and (iii) national deprivation score of LSOA (OA on Northern Ireland) within local authority (district), and then selecting addresses by the method of random start and fixed interval. The steps for sampling that were taken were:

1. From the PAF file, exclude all business addresses and private addresses that were selected in previous waves of the Food & You 2 survey
2. Order the address list by region (for England only)
3. Within each English region, Wales and Northern Ireland, order addresses by local authority (district in Northern Ireland)
4. Within local authority / district, order addresses by IMD of LSOA in England, WIMD of LSOA in Wales, and NIMDM of SOA in Northern Ireland
5. Select numbers of addresses shown in Table 1 by method of random start and fixed interval from these ordered lists
6. Divide stratum-ordered selections into successive groups of 3 selections

7. Within each group of three, randomly allocate two cases to the main sample, and one case to the reserve sample.

## Household sample design

As stated above, addresses were selected from the Postcode Address File (PAF) systematically using the random start and fixed interval method. At each address, up to two adults were invited to take part in the survey. Two unique login codes for the online survey were provided in the initial invitation letter and up to two were provided in each reminder mailing. Up to two postal questionnaires were provided in the postal questionnaire mailing (Mailing 3). In the reminders, two logins / questionnaires were sent to completely non-responding addresses. At any address where one adult had already completed the questionnaire only one login code and one postal questionnaire were sent. Each adult who completed the questionnaire received a £10 online or paper voucher.

### Process for selecting adults within a household

There are many approaches that could have been used for selecting adults within households. For instance, the two adults with the most recent birthdays or the adults with the two next birthdays could be selected. These are commonly referred to as quasi-random approaches, as they are roughly equivalent to a fully random approach. While this would have randomised the selection process to a degree in households where there were more than two adults, in self-administered surveys it adds another barrier to completing the survey and has been shown to be incorrect in about 20% to 25% of cases. Further details are available from TNS BMRB's 2013 [report of web experiments](#) prepared for the Cabinet Office on the Community Life Survey or a journal article from 2014 by Kristen Olson and Jolene D. Smyth focusing on the accuracy of within-household selection in general population web and mail surveys published in *Field Methods* (volume 26, issue 1, pages 56–69).

With this in mind, it was decided to allow any two eligible adults (aged 16 years or over) to participate in the survey. Given the household size distribution in the UK, it was estimated that 93% of the sample selected in this way would also have been selected had we managed to successfully implement a random selection method.

This approach was consistent with that taken for the previous three waves of the Food and You 2 survey.