Ofcom Technology Tracker 2023 - Technical Report

This report details the methodology and technical specification for the 2023 Technology Tracker study, which has been run by BMG Research on behalf of Ofcom. The objective of the survey remains consistent with the 2022 study, which was also undertaken by BMG: to track the behaviour of UK households and individuals with respect to residential telecommunications, broadcasting and the internet.

1.1 Approach

Fieldwork for the survey took place using a primarily face-to-face methodology whereby respondents were interviewed on the doorstep with the interviewer recording answers on to an interactive version of the survey on a tablet device. For a small number of cases where respondents were interested in taking part but not able to do so while the interviewer was present, an alternative postal return methodology was provided. This approach was designed to achieve 80% of the target sample – 3,200 of the 4,000 interviews.

A secondary methodology was introduced for the 2023 study whereby respondents could take the survey online via a web link. This web link was issued via letters sent to a selection of addresses – an approach commonly known as push-to-web. The postal return methodology was also offered to these respondents as an alternative to the web link. This approach was designed to achieve the remaining 20% of the target sample – 800 of the 4,000 interviews.

These two approaches are detailed further in section 1.3.1 of this report.

In total BMG Research interviewed 3,997 adults, aged 16+, across the United Kingdom, between January 20th and April 24th 2023. Interviews were carried out across 315 different sampling units across the UK with 12 or 13 interviews carried out in each. Each interview took approximately 20 minutes to complete.

In England representative quotas were set by government office region (GOR), but in each of the devolved nations (Scotland, Wales, Northern Ireland) a boost was placed on the sample to allow for sub-group analysis within each nation. Within each region quotas were then applied so that each is representative by age, gender and socio-economic group (SEG). These regional quotas were then applied down to the level of each sampling unit to provide 315 representative snapshots of the UK population. After fieldwork, weights were also applied to data so that it was representative of the UK population by age, gender, SEG, working status, region and cabled/non-cabled area.

Further details of the sampling frame, research methodology, weighting procedures and reporting are outlined in the following pages. The SPSS files from the study are available on request.

1.2 Sample design

2023 fieldwork was conducted via two methodologies. A primary face-to-face methodology, which was conducted with an identical approach to that which was used in 2022. This approach accounted for 3,200 completed interviews. The secondary methodology was introduced using a push-to-web approach, which accounted for 777 interviews. The remaining 20 interviews were conducted via the postal survey approach.

While the push-to-web methodology was not been used on the 2022 technology tracker survey, we are able to retain comparability because this still utilises a random probability sampling method, the same as used in the face-to-face element of the survey. Therefore, only one sampling process is required for use across both methodologies.

Please note, that due to restrictions imposed by the COVID-19 pandemic in 2021, fieldwork was unable to take place via a face-to-face methodology. As such, 2023 data can be compared to data with 2022, as well as 2020 and earlier. However, data should not be compared to 2021 data as the approaches differed considerably.

1.2.1 Setting up sampling units

The target sample of 4,000 was split across 315 sampling units, giving a target of 12 or 13 interviews in each sampling unit. Output Areas (OAs) were used as the basic building block for sampling. These were then stratified by region, then within region along a 6-point urban/rural categorisation. Quota control was applied per region by three key variables (age, gender, socio-economic grade) to control the sample and ensure the units in a given region added up to be representative of each. In Scotland some SUs comprised of multiple OAs due to low populations in individual OAs. All OAs that were combined in this way were neighbouring.

A boosted sample of 500 in each of the devolved nations (Scotland, Wales, Northern Ireland), meant that a higher proportion of the sampling units were placed in each of these regions. The remainder were split across England to be representative of GOR by population size. Please see the table below for the breakdown of sampling units per region.

Region (GOR)	Sampling units
East Midlands	17
East of England	22
London	30

North East	10
North West	26
South East	32
South West	20
West Midlands	21
Yorkshire and The Humber	20
Scotland	39
Northern Ireland	39
Wales	39

Once the sample was extracted and sorted, it was checked for close correspondence to the UK population by deprivation - using indices of multiple deprivation (IMD) – and cabled/non-cabled areas – using a database supplied by Ofcom.

Because of the differing profile of each region, sampling units were not created to be uniform in size, but instead an SU is measured by the number of addresses it contains. The SUs were selected with a probability proportionate to size. This was done by grouping the SUs into size bands, then those with a larger population were assigned a higher probability of being selected, those with a smaller population were made less likely to be selected. This ensures that all households within an SU have an equal chance of being selected, regardless of the size of the SU in which a household is situated. Each address selected within an SU was assigned an ID.

In addition to the 315 SUs, the same number of back-up units with identical demographic profiles were created so that interviewers had additional addresses to recruit from, should they fail to hit their quotas in the primary SU.

SU targets were not method specific. The 12 or 13 interviews required in each unit were to be conducted either face-to-face or via push-to-web. In order to retain the 80/20% split between face-to-face and push-to-web methodologies, a limit of 2 to 3 online completes per unit was imposed.

1.2.2 Quotas

As mentioned in the previous section, the sample was designed to be representative of the UK population (with a boost in devolved nations).

This was built from the foundations of the sample upwards. Each SU was set individual quotas by age (16-24, 25-44, 45-64, 65+), gender (male, female), and socio-economic grade (AB, C1, C2, DE).

Quotas for fieldwork were set using 2011 Census data for Great Britain and Northern Ireland[1], with age quotas set using the ONS 2020 mid-year population estimates (released June 2021). Compared to the Census 2011, the 2020 mid-year population estimates indicate a small (3%) downward shift in the incidence of adults aged under 45 and a small (3%) upward shift in the incidence of adults aged 65 and over.

The below table shows the quotas set for this project.

Demographic	Quota set	Interviews achieved - unweighted	Weighted sample
Gender – Male	49%	48%	49%
Gender – Female	51%	52%	51%
Age – 16-24	15%	10%	12%
Age – 25-44	33%	33%	35%
Age – 45-64	32%	32%	32%
Age – 65+	20%	25%	21%
SEG – AB	22%	24%	26%
SEG – C1	31%	26%	27%
SEG – C2	22%	16%	22%
SEG - DE	26%	32%	25%

Quotas were designed to work in tandem across both methodologies. If an interview was conducted with a male respondent, aged 16-24, in SEG DE, this was marked as a complete against the target and removed from the quota for face-to-face interviewers.

Push-to-web letters were sent two weeks prior to the start of face-to-face fieldwork so that the majority of interviews conducted via this methodology had been completed, and quotas for face-to-face could be adapted based on the responses achieved. While a minority of push-to-web interviews were completed after this point, the small number meant it was more straightforward to adapt quotas based on these responses.

[1] 2021 Census data with the level of granularity required for this process was not available at the point of sampling design. The aim is to introduce it for sampling in the 2024 survey.

This design was selected so that the final sample is balanced and representative of the UK population as a whole.

1.3 Fieldwork

Fieldwork took place between January 20th and April 24th 2023. On average an SU contained 154 addresses. Only one interview could be conducted per address. If more than one person in the household met the quota a respondent was selected using the birthday method (i.e. the person who will be the next to have a birthday).

Two methodologies were utilised for conducting interviews: CAPI (Computer Assisted Personal Interviewing) administered face-to-face, and push-to-web driven online interviewing. A further reserve methodology of postal surveys was offered to respondents as a back-up.

Before fieldwork began, three identical scripts were set up; a primary CAPI script, and secondary online script and reserve paper script to be printed in booklets.

Further details of the process for the two main methodologies are explained below.

1.3.1 Push-to-web interviewing

A sub-set of addresses within each of the 315 sampling units were selected to be sent a letter containing information about the purpose of the survey and an invitation to take part in the study via a URL link and unique ID. The letters also contained contact details for the BMG Research support-line should they have difficulties taking part (this included a freephone number and email address) along with FAQs about Ofcom and the study.

Respondents would have to go to URL link on their phone, tablet or computer, and enter the ID to access the survey. For ease of access a QR code linking to the survey was also provided on the letter. The option to request a paper copy was also provided.

In order to understand how many letters to send, BMG used a conservative estimate of a 9.4% response rate (estimated using similar instances of push to web in other projects) to extrapolate what number would need to be sent for 800 completes across the UK. This meant that an initial 8,505 letters were sent to UK households, equating to about 27 addresses per SU. The intended and actual response rates are detailed in the table below.

Target sample	Required response from 8,505	Interviews achieved	Actual response rate
800	9.4%	777	9.1%

While the actual response rate was slightly lower, the deficit in responses was replaced by those who completed the research via a postal survey. This response

rate will be used to inform the required letters should the methodology be used again in future.

Addresses who received letters were removed from the available sample for face-to-face interviewers, and were only approached for this methodology if they had specifically requested this via an option provided in the online survey.

Towards the end of fieldwork, a small targeted reminder was sent to addresses in sampling units where there was still a small deficit in the number of online responses required.

1.3.2 CAPI interviewing

Interviewers were assigned to each SU, and within this unit they were asked to achieve interviews which reflected the SU-level quotas based on age, gender and SEG. These quotas were adapted based on the responses achieved via the push-to-web methodology.

Using an individual link, specific to the address, the interviews were instructed to conduct the interview in person on the doorstep, the interviewer using a tablet device to enter respondents' answers into the CAPI script with the aid of showcards for more complex questions. They were also provided with a limited number of paper copies which could be passed to respondents who were clearly interested in completing, but unable or unwilling to do so in person. However, these were only to be used when interviewers thought it was highly likely a respondent would complete via paper copy.

Interviews would also occasionally be able to use warm-leads, collected when a respondent attempted to complete online but found their SU quota was full. These were provided to interviewers to attempt contact and arrange an interview, but only where this individual fit within the required quotas.

While COVID-19 restrictions are no longer a consideration mandated by UK law, interviewers were asked to be mindful of any concerns that respondents might still have about the disease and to act with care in respect of these.

1.3.3 Interviewer and respondent incentivisation

Interviewers were incentivised per completion they achieved. In order to encourage in person responses, they were paid more to complete via the CAPI than providing respondents with paper copies.

Respondents were offered a £10 shopping voucher for completing via any methodology.

1.4 Weighting

The survey data used for this report is weighted to ensure the data is representative of the UK population aged 16+. Data from all methodologies is weighted together under one process.

Rim weighting was applied to age, gender, SEG, working status, region and cabled/non-cabled. Cabled/non-cabled were defined using information on the coverage of different levels of broadband connection, supplied by Ofcom to BMG Research. Cabled areas were defined as postcode areas (first three digits of a postcode) which had at least 50% coverage of either gigabit or ultra-fast broadband.

A full unweighted and weighted breakdown of the final sample can be seen in the table below.

Demographic	Interviews achieved - unweighted	Weighted sample
Gender – Male	48%	49%
Gender – Female	52%	51%
Age – 16-34	25%	29%
Age – 35-54	32%	34%
Age – 55+	43%	37%
SEG – AB	24%	26%
SEG – C1	26%	26%
SEG – C2	16%	22%
SEG - DE	32%	25%
Working status – working	54%	57%
Working status – not working	44%	41%
Region – London	9%	12%
Region – South East	10%	14%
Region – South West	6%	9%
Region – East of England	7%	9%
Region – West Midlands	7%	9%
Region – East Midlands	5%	7%
Region – Yorkshire & Humber	6%	8%

Region – North East	3%	4%
Region – North West	8%	11%
Region – Scotland	12%	9%
Region – Wales	12%	5%
Region – Northern Ireland	13%	3%
Cable	63%	49%
Non-cable	37%	51%

The percentages described above as '% Weighted' are the targets used to weight the data. The figures for age, gender and location are taken from the 2011 Census[2], with age quotas updated to align with the ONS 2020 mid-year population estimates. The '% Unweighted' column shows the actual percentage of interviews achieved in the January to April 2023 fieldwork.

To ensure an adequate sample size for sub-group analysis in each of the devolved nations, respondents in these regions were purposefully oversampled. However, weighting ensures that the total sample is not skewed as the proportion of those in each region is adjusted to be representative.[3]

1.5 Reporting

Throughout the data tables, significant differences are signified between sub-groups and the total result. Differences to the total are signified by a + or – symbol next to the percentage figure, differences to other groups within the crossbreak set (e.g. region) are signified by letters below the percentage figure – these letters applied to each column appear below the crossbreak name. Differences are considered to be significant at the 95% confidence level, meaning that there is only a 5% possibility that the difference occurred by chance rather than by being a real difference. This is a commonly accepted level of confidence.

The data used in this report are rounded up or down to the nearest whole percentage. It is for this reason that, on occasion, tables or charts may add up to 99% or 101%. Results that do differ in this way should not have a sum-total deviance that is larger than around 1% to 2%.

In the tables and charts contained in this report, a * symbol denotes a proportion that is less than 0.5%, but greater than zero.

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[2] The weighting structure replicates the sampling design. 2021 Census data with the level of granularity required for this process was not available at the point of sampling design. The aim is to introduce it for sampling in the 2024 survey.

[3] 500 respondents were interviewed in each of Scotland, Wales, and Northern Ireland, but the weighted base is 360, 200, and 120 respectively.

Because of the nature of the sample construction, quotas, and weighting used, when reporting it is necessary to state that the data represents the percentage of adults rather than the percentage of households.

Within each wave of research, we ask a set of core questions relating to these topic areas: take-up and use of landline, mobile phone, internet, television, radio, devices, and subscription services. Other questions asked may vary wave on wave.

Appendix. Guide to statistical reliability

The variation between the sample results and the 'true' values (the findings that would have been obtained if everyone had been interviewed) can be predicted from the sample sizes on which the results are based, and on the number of times that a particular answer is given. The confidence with which we can make this prediction is usually chosen to be 95%, that is, the chances are 95 in 100 that the 'true' values will fall within a specified range. However, as the sample is weighted, we need to use the effective sample size rather than actual sample size to judge the accuracy of results. The following table compares effective sample size and unweighted sample for some of the main analysis groups.

Demographic	Unweighted base	Effective sample size
Gender – Male	1916	1363
Gender – Female	2070	1441
Age – 16-34	1007	742
Age – 35-54	1271	914
Age – 55+	1717	1178
SEG – AB	971	716
SEG – C1	1038	741
SEG – C2	620	489
SEG - DE	1293	888
Working status – working	2157	1574
Working status – not working	1771	1192
Region – London	375	320
Region – South East	404	351

Region – South West	250	214
Region – East of England	273	232
Region – West Midlands	264	225
Region – East Midlands	210	176
Region – Yorkshire & Humber	254	209
Region – North East	126	103
Region – North West	328	268
Region – Scotland	498	404
Region – Wales	495	466
Region – Northern Ireland	520	502

The table below illustrates the required ranges for different sample sizes and percentage results at the 95% confidence interval.

Effective sample size	10% or 90%	20% or 80%	30% or 70%	40% or 60%	50%
Total – 2811	1.7%	2.2%	2.5%	2.6%	2.7%
Female - 1441	2.1%	2.9%	3.3%	3.6%	3.7%
SEG:C2 - 489	3.5%	4.8%	5.6%	6.1%	6.3%
Region: North East - 103	6.8%	9.8%	11.7%	12.9%	13.6%

For example, if 30% or 70% of a sample of 2,811 give a particular answer, the chances are 95 in 100 that the ‘true’ value will fall within the range of + 2.5 percentage points from the sample results.

When results are compared between separate groups within a sample, different results may be obtained. The difference may be ‘real’, or it may occur by chance (because not everyone has been interviewed). To test if the difference is a real one – i.e. if it is ‘statistically significant’ – we again must know the size of the samples, the percentages giving a certain answer and the degree of confidence chosen. If we assume ‘95% confidence interval’, the difference between two sample results must be greater than the values given in the table below to be significant.

Effective sample size	10% or 90%	20% or 80%	30% or 70%	40% or 60%	50%
Male – 1363 vs. Female – 1441	2.2%	2.9%	3.4%	3.6%	3.8%
London – 320 vs. Scotland – 404	4.0%	5.5%	6.5%	7.1%	7.4%