

# Public Service Broadcasting Tracker 2016 – Weighting Approach

Technical Appendix

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# 1. Background

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Until 2014, the PSB tracker had been conducted using CATI<sup>1</sup> telephone methodology. In 2015 the decision was made to change it to a split sample of online and face-to-face CAPI<sup>2</sup> survey, with a smaller parallel run of telephone interviews in 2015 using the previous CATI methodology, in order to enable the recalibration of previous data.

This document outlines the process by which results were normalised between the online and face-to-face surveys, to provide final results for reporting. The process by which pre-2015 telephone surveys were calibrated with the 2015 mixed methodology can be found in Annex E in the 2016 PSB Annual Report, the link to which is provided here: [https://www.ofcom.org.uk/data/assets/pdf\\_file/0029/69545/annex-e.pdf](https://www.ofcom.org.uk/data/assets/pdf_file/0029/69545/annex-e.pdf)

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<sup>1</sup> CATI - Computer-assisted telephone interviewing

<sup>2</sup> CAPI - Computer-assisted personal interviewing

## 2. Sample structure 2016

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The PSB 2016 tracker was conducted as follows;

- Survey total: 3364 interviews
  - CAPI face-to-face (F2F): 777
  - Online: 2587

The online component of the main survey was conducted using an online panel. The face-to-face survey was conducted in-home via CAPI.

Both surveys were designed to be nationally representative: quotas were set by age, gender and socio-economic status within nation, and by region within England, and a minimum quota was set for BAME at an overall UK level. For the main survey, separate, matching quotas were set for the online and face-to-face elements, in proportion to the total interviews conducted in each. In addition, the devolved nations were over-sampled, and England was under-sampled, to allow more robust analysis of the individual channels (in particular, BBC One, ITV1 and Channel 4) by nation.

Boost samples for regular viewers of Channel 4 in each of the devolved nations were included to ensure minimum samples for analysis.

## 3. Methodology

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### 3.1 Discriminant analysis

Analysis called *discriminant analysis* was undertaken in order to determine which survey questions discriminated most between respondents answering the survey using the different methodologies. The analysis was used to determine the attributes which most strongly predicted which group a respondent belonged to, based on a number of other attributes.

Discriminant analysis was run on the survey to predict differences between responses based on whether the questionnaire had been completed face-to-face, or online.

Since discriminant analysis aims to predict which group a respondent belongs to, as well as to determine which questions are the most discriminating (in order of greatest to least significance), it also provides the accuracy of a prediction based on those variables. This we will refer to this as the *accuracy*. The accuracy is given as the percentage of respondents which are correctly allocated to their survey methodology.

When weighting data the effectiveness of each interview diminishes, so the data are less robust than when using unweighted data. We use a concept of efficiency of the weighting to say by how much the effectiveness of the data is reduced. The efficiency of the weighting (or just *efficiency*) is the proportion of the sample size which would give the same effectiveness if we had achieved the desired profile using no weighting. In other words, if we have an efficiency of 75% we could have the same reliability of data with 75% of the sample size if we had a perfect profile and did not weight the data. The efficiency is also given as a percentage where no weighting would be 100%. Generally, efficiency of 50% or above is considered acceptable.

### 3.2 Capping weights

Capping weights is the process of limiting the range of values a weight can take. This is done because large weights – or more specifically large differences in weights – can cause issues with small numbers of respondents dominating results. We have capped weights at 0.1 and 5, so no respondent can have a weight below 0.1 or above 5. This reduces issues caused by large differences in weight. All targets within the sample were still achieved.

## 4. Weighting variables

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### 4.1 Main PSB audience opinion measures

There are a number of main audience opinion measures from the PSB tracker which are published by Ofcom on an annual basis. These are as follows;

- Proportions of self-claimed regular viewers of any PSB channel as well as each PSB channel (Q12)
- Delivery of the PSB purposes for each channel (Q15)
- Delivery of the PSB purposes across all PSB channels (Q16)
- Importance of the PSB purposes (Q17)

### 4.2 PSB 2016 tracker survey weighting

The weighting includes standard demographic variables; age, gender, socio-economic group, region, working status and ethnicity.

Following the 2015 transition of the PSB Tracker from a CATI telephone methodology to mixed online and face-to-face CAPI methodology, a number of variables were identified which varied significantly between the survey methodologies. However, not all of these brought the main audience opinion measures into line, therefore they were not included in the final weighting. Three variables were identified as the optimum to bring the survey methodologies closely into line while maintaining an acceptable efficiency. Using the weighting scheme produced by these variables, 99% of key measures and 80% of other survey measures were within 10% difference between the survey methodologies.

However, there were still some significant differences between survey methodologies. Since 70% of interviews were conducted online, if we were to weight the online to the face-to-face, the online would still contribute the majority to the results. The decision was made to weight the survey methodology, so face-to-face and online each contribute 50% to the results.

A review of the weighting approach was carried out following the 2016 fieldwork, re-running the discriminant analysis on the 2016 data. The result of this review established that the optimal approach was to use the same weighting variables that were identified in 2015, while updating the targets based on 2016 results.

Table 1 provides the final variables included in the weighting, along with the weighting efficiency and the discriminant accuracy they provide. Both the *efficiency* and *accuracy* relate to the statistics provided by including all variables up to and including the current one.

Table 1 - Final weighting variables and the weighting efficiency and accuracy they provide

Question	Efficiency (with demos)	Accuracy
<b>Q15J</b> It shows new programmes, made in the UK – BBC Two (AGREE 7-10)	52.8%	57.7%
<b>Q17E</b> Rating on statement - It portrays my region/Scotland/Wales/Northern Ireland fairly to the rest of the UK (AGREE 7-10)	51.0%	61.9%
<b>Q15G</b> It shows well-made, high quality programmes - Channel 4 (AGREE 7-10)	49.9%	63.7%

The final accuracy was slightly below the target of 50%, however since it was less than 1% it was deemed to still be acceptable.

The final weighting targets for the combined methodology were therefore;

Table 2 - Final weighting targets

<b>Q4</b> Respondent gender	Male	49%
	Female	51%
<b>Q3</b> Respondent age	16-24	15%
	25-34	16%
	35-44	17%
	45-54	17%
	55-64	14%
	65-74	11%
	75+	10%
<b>SEG</b>	AB	22%
	C1	31%
	C2	21%
	DE	26%
<b>Working status</b>	Working full-time	36%
	Working part-time	14%

	Not working	50%
<b>Definitive standard region</b>	Scotland	9%
	North	4%
	Yorkshire/Humberside	8%
	North West	11%
	West Midlands	9%
	East Midlands	7%
	East Anglia	9%
	Wales	6%
	South West	8%
	London	13%
	South East	13%
	Northern Ireland	2%
<b>Ethnicity</b>	BAME	13%
	White	87%
<b>Q15J</b> It shows new programmes, made in the UK – BBC Two	Not asked (i.e. do not view channel regularly)	78%
	Not 7+ (i.e. 1-6 or DK)	5%
	7+	16%
<b>Q17E</b> Rating on statement - It portrays my region/Scotland/Wales/Northern Ireland fairly to the rest of the UK	DK	6%
	Not 7+ or DK (i.e. 1-6)	12%
	7+	83%
<b>Q15G</b> It shows well-made, high quality programmes - Channel 4	Not asked (i.e. do not view channel regularly)	76%
	Not 7+ (i.e. 1-6 or DK)	5%
	7+	19%

<b>Survey methodology</b>	CAPI	50%
	Online	50%