Technical details

The 2021 British Social Attitudes (BSA) survey used a mixed-mode push-to-web design with an optional Computer-Assisted Telephone Interview (CATI) opt-in. Letters were sent to a random sample of addresses inviting up to two household members to complete the survey online, with an option to be interviewed by phone if preferred. This is the same design as used in the 2020 BSA. Prior to 2020, BSA was a face-to-face survey (see Curtice et al., 2020 for details), but this was changed as a result of the public health measures introduced in the wake of the COVID-19 pandemic (see Clery et al, 2021, Technical details for more information about this transition).This chapter provides details of the design of the BSA 2021 survey, and how it differed from previous years of BSA.

Sample design

The BSA survey is designed to yield a representative sample of adults aged 18 or over. Since 1993, the sampling frame for the survey has been the Postcode Address File (PAF), a list of addresses (or postal delivery points) compiled by the Post Office.

For practical reasons, the sample is confined to those living in private households. People living in institutions (though not in private households at such institutions) are excluded, as are households whose addresses were not on the PAF.

Before 2020 a geographically clustered and stratified sample of addresses was selected. Interviewers then called at each address. If there were more than one dwelling unit (DU) or household at the issued address, a random selection of one household was made at which to seek an interview. If there was more than one individual living in the selected household, a random selection of household members was made.

The sampling and selection method used since 2020 is different from previous years, because of the change in survey mode from face-to-face to primarily online.

Selection of addresses and dwelling units

In 2021 a sample of 44,280 addresses was drawn from the PAF. Addresses located north of the Caledonian Canal and on the Isles of Scilly were excluded in order to be consistent with previous years of BSA.

The sample drawn from the PAF included both clustered and unclustered addresses. Clustered addresses were included to facilitate a face-to-face follow-up experiment run on a portion (one version) of the sample. Only interviews conducted at the unclustered addresses – online or by telephone – are included in the analysis dataset used in this report and considered in the figures presented in subsequent sections of this chapter.

The first step was to draw the clustered sample. A total of 123 postcode sectors (PSUs) were selected systematically from a list of all postal sectors in Britain (GB). Before selection, any sectors with fewer than 500 addresses were identified and grouped together with an adjacent sector. Sectors were then stratified on the basis of: 37 sub-regions; population density, (population in private households/area of the postal sector in hectares), with variable banding used in order to create three

equal-sized strata per sub-region; and ranking by percentage of homes that were owner-occupied. At the second stage, 25 addresses were selected within each PSU, giving a total of 3,075 addresses.

Following the drawing of the clustered sample, 41,205 unclustered addresses were then selected from all PSUs in GB, including those used in the clustered sample (but excluding the addresses already selected within these). Prior to selection of the unclustered sample, all PAF addresses within England, Scotland and Wales were sorted by: (a) region; (b) population density; and (c) tenure profile (% owner occupation). A systematic (1 in N) random sample of addresses was then drawn.

In total, we therefore selected a sample of 44,280 addresses, across a total of roughly 8,570 PSUs of which 123 contained 25 clustered addresses and an average of five additional unclustered addresses, and the remaining 8,447 PSUs included an average of five unclustered addresses.

The 44,280 addresses were allocated to a main sample (N= 36,900). and a reserve sample (N=7,380). All clustered addresses were allocated to the main sample and denoted as the experiment sample. The reserve sample was not issued. In practice two addresses were not issued as they were duplicated between the clustered and unclustered sample. The total main sample was therefore 36,898 addresses.

The initial invitation to participate in the online survey was made by post. Consequently, in instances where the selected address contained more than one dwelling unit (DU) or household it was not possible to make a random selection of a single DU/household. Instead, the selected household was effectively the one which first opened the invitation letter.

Selection of individuals

Where selected households contained more than one person aged 18 and over it was not possible to select at random one person to be interviewed. Instead, the invitation and reminder letters contained two unique access codes that allowed any two adults aged 18 or over living within the household to log in and complete the questionnaire.

The 2021 questionnaire and fieldwork

Each address was allocated at random to one of twelve versions of the questionnaire.

Fieldwork

Fieldwork was carried out between 16th September and 31st October 2021.

A mixed-mode design was used. Sampled addresses were sent letters inviting up to two respondents per household to complete the online survey. Up to two reminder letters were sent to addresses where no-one or only one person had taken part so far. While respondents were encouraged to complete the survey online, they were given the option of conducting the survey by telephone. This was to try to ensure that the offline population, and those who are less likely to take part online, still had the opportunity of taking part. The fieldwork period was the same for both modes. The invitation and first reminder letters sent to respondents mainly directed them to taking part online, merely presenting the option of a telephone interview as an option in the frequently asked questions. The second reminder letter made the option of a telephone interview more explicit.

Telephone interviews were conducted by interviewers drawn from NatCen Social Research's regular panel. Before fieldwork began, interviewers attended a briefing conference to familiarise themselves with the questionnaire.

For each version of the questionnaire the mean interview length when completed online was:

- Version 1: 26 minutes,24 seconds
- Version 2: 26 minutes,35 seconds
- Version 3: 26 minutes,38 seconds
- Version 4: 27 minutes,9 seconds
- Version 5: 26 minutes,35 seconds
- Version 6: 26 minutes,30 seconds
- Version 7: 29 minutes,30 seconds
- Version 8: 29 minutes,40 seconds
- Version 9: 28 minutes,32 seconds
- Version 10: 28 minutes,1 second
- Version 11: 29 minutes,12 seconds
- Version 12: 29 minutes, 56 seconds

Communication strategy

The principles for designing the invitation and reminder letters were based on the Tailored Design Method (Dillman et al., 2014), an approach to designing postal, web and telephone surveys based on social exchange theory, that has the goal that the respondent believes that the expected benefits of responding outweigh the costs, therefore increasing the likelihood of response. The main aim of the letters was to provide all the relevant information a respondent requires to complete the survey, and to answer immediate questions they might have had. The communications were designed to ensure that each successive contact built on the previous one, varying the motivational statements to increase the likelihood of converting non-responders.

1. Invitation letter

A letter was sent to each sampled address inviting adults aged 18 or over and resident at the household to take part in the survey. As noted earlier, up to two adults could take part in each household and two sets of unique login details were provided to each address. The letter explained the purpose of the study, how the address was selected, and stressed the importance of taking part. The letter also confirmed that the respondent would receive a £10 shopping voucher on completing the survey as a thank you for taking part. The invitation letter mainly directed respondents to taking part online, merely presenting the telephone interview as an option in the frequently asked questions. One sampled address was found to be non-residential, so the invitation letter was sent to 36,899 addresses.

2. First reminder letter

About a week after the invitation letter was mailed, sampled addresses were sent a reminder letter. Owing to the lead-in time for producing and printing this letter, it was sent to all sampled addresses. The reminder letter built on the invitation letter by informing respondents of the advantages of taking part, and provided details of how to access the survey. As in the invitation letter, respondents were directed mainly towards taking part online.

3. Second reminder letter
About a week after the first reminder letter, a second reminder letter was sent to all households where no-one had taken part, or only one person had done so. Households that had opted out of the survey by contacting the office were also excluded from this mailing. This letter differed from the invitation and first reminder letters by making it clearer that respondents could telephone the office to complete a telephone interview. In the first reminder and invitation letter this information was only included within the frequently asked questions on the reverse of the letter. The second reminder letter was sent to 36,512 of the original 36,899 addresses that formed the main sample.

4. Third reminder letter
During fieldwork a decision was made not to issue the reserve sample. However, it was decided to issue an optional third reminder to the main sample in order to further encourage response. This letter emphasised that it was the last chance to participate and included the same messaging in relation to the telephone interview as the second reminder. The third reminder was sent to 32,879 addresses.

Response rate

Response rates for push-to-web surveys are not necessarily directly comparable with those achieved in face-to-face surveys. Whereas the BSA face-to-face survey aimed to select at random one individual per household to take part, the push-to-web approach allowed up to two people per household to participate. Therefore, the closest comparison that can be made is between the household-level response rate in the push-to-web survey (that is, the proportion of households from which at least one fully productive case was achieved), and the overall response on a face-to-face survey. For BSA 2021 the household-level response rate was 13%. However, information on non-responding addresses is not fully captured in push-to-web surveys, so it is not possible to record accurately the number of selected addresses which were not eligible because, for example, they are non-residential addresses. If we assume the level of such addresses is the same as in the 2019 BSA survey (9%), the estimated final response rate in 2021 was 14.2%. The response rate was therefore somewhere between 13% and 14.2% (see Table 1).

Table 1 BSA 2021 response rate

Issued sample	73,796 cases 36,898 addresses
Estimated number of deadwood/ineligible*	9%
Eligible addresses	33,577
Number of fully productive cases	6108
Number of partially productive cases	142
Number of addresses with at least one complete	4780
Number of completes per address	1.31
Unadjusted response rate	13.0%
Adjusted response rate	14.2%

** Estimate based on BSA 2019 % of ineligible/deadwood addresses*

This response is very similar to the 2020 BSA (between 13.1% and 14.1%), which had the same survey design as in 2021. On the 2019 BSA – the last face-to-face survey – the household response rate was between 44.3% and 44.8%. The response rate in 2020 and 2021 was therefore considerably lower than in 2019, as would be expected given the use of a push-to-web survey mode.

It is also possible to estimate an individual-level response rate for the push-to-web survey. This relies on estimating the number of eligible adults per address. If we assume that this figure is 1.89,[1] a total of 69,737 adults were eligible to respond. Given that 6,250 responses were achieved, this means the individual level response rate was 9%.

Weighting

It is known that certain subgroups in the population are less likely than others to respond to surveys. This is referred to as differential non-response. These groups can end up being under-represented in the sample, which can bias the survey estimates. Weights are applied to the BSA survey to correct for these biases. Such non-response could occur within households as well as at the level of the selected postal address. As explained above, every address had an equal probability of being selected, while at each address up to two people in one household were invited to take part. Weighting was therefore required to adjust for differential non-response by households and by individuals within households. Separate non-response models were constructed to deal with each of these elements of non-response. Finally, calibration weighting was used to adjust the profile of the responding sample so that it matched the population in terms of age, sex, education, tenure, ethnicity and region. The different stages of the weighting scheme are outlined in detail below.

Non-response model

Specific subgroups can end up being over-represented in the sample, which can bias the survey estimates. As already noted, given that up to two people per household could respond in 2021, non-response could occur at the household level, when no one from the selected address responds, or within households, when only one person responds in households with two or more adults. Where information is available about non-responding addresses, the propensity for households (at selected addresses) to respond can be modelled, and the results used to generate a non-response weight. Similarly, where information is available about responding households, the expected number of responses within these households can also be modelled. Hence there are two components to the non-response weights – one for between-household non-response and one for within-household non-response. These are intended to reduce bias in the responding sample resulting from differential response to the survey.

Between-household response was modelled using logistic regression, with the dependent variable indicating whether or not someone at each selected address responded to the survey. Responding addresses were coded 1 and non-responding addresses were coded 0. A number of variables that described the character of the area in which a selected address was located, including aggregated census data and deprivation indices, were considered for possible inclusion in the response model. The model generated an estimated probability of responding for each selected address. From this model, the between-household non-response weight was calculated as the inverse of this estimated probability of responding for each responding address.

[1] This estimate is derived from the Office for National Statistics (ONS) Labour Force Survey (Office for National Statistics, 2021a).

The variables found to be related to household response, once the other predictors included in the model have been controlled for, were: region, population density of postcode sector (quintiles), percentage of residents with a degree in the postcode sector (quintiles), percentage of owner-occupied properties in the Output Area (quintiles), the percentage of residents in social grade AB in the postcode sector (quintiles), the percentage of ethnic minority residents in the postcode sector (quintiles), the percentage of residents 65+ in the postcode sector (quintiles) and the percentage of households with cars in postcode sector (quintiles). The model shows that the likelihood of response increases with higher rates of home ownership, higher percentages of population density as well as higher percentages of social grade AB and higher rates of degree level education. The full model is shown in Table 2.

Non-response within households was also modelled using logistic regression, with the dependent variable indicating whether each responding address had one response or two to the survey. Addresses that contained only one adult and addresses from which there was not any response were not included in this stage of the non-response modelling. As well as the area-level information used before, additional household-level variables (gathered from the responses that were received) such as household size, tenure, whether anyone in the household has a degree and income were also considered for possible inclusion in the model. The predicted probability from the model of two people responding, rather than one, was used to estimate the expected number of completed surveys in responding households. This was calculated as (1-p) + 2p = 1+p, where p is the probability of two responses. The within-household non-response weight was calculated as the ratio of the number of adults in the household (capped at 4) divided by the expected number of responses for each responding household, i.e. numad / (1+p), where numad is the number of adults in the household (capped at 4).

Table 2 Model of between-household response

	Odds	Significance (p value)
Region		0.018
North East	(Reference)	
North West	0.940	0.604
Yorkshire and the Humber	1.049	0.701
East Midlands	1.186	0.173
West Midlands	1.058	0.649
East of England	0.947	0.658
London	0.805	0.106
South East	1.014	0.905
South West	1.144	0.269
Scotland	1.089	0.487
Wales	0.928	0.594
Pop density in postcode sector (quintiles)		0.030
1 (lowest)	(Reference)	
2	0.886	0.022
3	0.926	0.175
4	1.004	0.946
5 (highest)	1.032	0.664
Percentage with degree (quintiles)		0.001
1 (lowest)	(Reference)	
2	1.192	0.019
3	1.361	0.001
4	1.339	0.005
5 (highest)	1.574	0.000
Percentage ethnic minority (quintiles)		0.002
1 (lowest)	(Reference)	
2	0.896	0.033
3	0.937	0.245
4	0.927	0.236
5 (highest)	0.752	0.000
Percentage owner-occupied (quintiles)		0.000
1 (lowest)	(Reference)	
2	1.219	0.001
3	1.291	0.000
4	1.335	0.000
5 (highest)	1.438	0.000
Percentage aged 65+ (quintiles)		0.003
1 (lowest)	(Reference)	
2	0.871	0.010
3	0.850	0.004
4	0.828	0.001
5 (highest)	0.787	0.000
Percentage social grade AB (quintiles)		0.017
1 (lowest)	(Reference)	
2	1.154	0.063
3	1.202	0.052
4	1.406	0.002
5 (highest)	1.470	0.002
Percentage households with cars (quintiles)		
1 (lowest)	(Reference)	
2	1.036	0.559
3	1.040	0.581
4	0.960	0.615
5 (highest)	0.866	0.101
Constant	0.106	0.000

The variables found to be related to the probability of receiving two responses once the other predictors included in the model have been controlled for were: region, total pre-tax household income (quartiles), the number of adults in household, household tenure, and whether there were any children under 16 in the household. The model shows that the likelihood of two respondents per household decreases with more eligible adults in the household as well as in households with children and in households in rented or other tenure. The full model is shown in Table 3.

Table 3 Model of within-household response

	Odds	Significance (p value)
Region		0.824
North East	(Reference)	
North West	0.792	0.234
Yorkshire and the Humber	0.892	0.581
East Midlands	0.835	0.394
West Midlands	0.896	0.592
East of England	0.765	0.189
London	0.721	0.098
South East	0.804	0.257
South West	0.933	0.733
Scotland	0.832	0.374
Wales	0.886	0.597
Pre-tax household income (quartiles)		0.000
Missing	(Reference)	
1 (lowest)	2.519	0.000
2	2.143	0.000
3	2.329	0.000
4 (highest)	2.139	0.000
Number adults in household		0.087
2	(Reference)	
3	1.033	0.798
4+	0.854	0.920
Household tenure		0.000
Ownership – outright	(Reference)	
Ownership – mortgage/shared ownership	0.896	0.033
Renting/other	0.937	0.245
Children under 16 in household		
None	(Reference)	
1+	0.846	0.046
Constant	0.489	0.000

Calibration weighting

The final stage of weighting was to adjust the composite non-response weight (the product of the weights from the previous stages) so that the weighted composition of the sample was in line with the best available population estimates of the characteristics of adults in Britain.

Table 4 Sample distribution

	Population	Unweighted respondents	Respondents weighted by pre-calibration weight	Respondents weighted by final weight
Region	%	%	%	%
North East	4.2	4.4	4.0	4.2
North West	11.3	11.2	12.0	11.3
Yorkshire and the Humber	8.5	8.4	8.3	8.5
East Midlands	7.5	8.2	7.6	7.5
West Midlands	9.1	8.8	9.0	9.1
East of England	9.6	9.9	9.5	9.6
London	13.5	11.1	13.1	13.5
South East	14.1	14.6	14.1	14.1
South West	8.8	10.7	8.9	8.8
Scotland	4.9	4.4	5.0	4.9
Wales	8.6	8.3	8.5	8.6
Age and sex	%	%	%	%
M 18–24	5.5	2.0	2.6	5.4
M 25–34	8.6	6.4	6.7	8.6
M 35–44	8.0	6.7	6.6	7.9
M 45–54	8.3	6.9	7.2	8.3
M 55–59	4.2	4.0	4.2	4.2
M 65-+	3.6	4.7	4.6	3.6
F 18–24	10.8	13.3	11.6	10.9
F 25–34	5.1	3.6	5.1	5.2
F 35–44	8.4	9.7	10.0	8.4
F 45–54	8.1	9.4	9.5	8.0
F 55–59	8.5	8.8	9.8	8.5
F 65+	4.3	6.0	6.0	4.4
Age and education	%	%	%	%
18-34 Degree/equivalent	12.5	14.3	15.1	12.5
18-34 other qualification	14.0	6.7	8.2	14.0
35-54 Degree/equivalent	16.6	22.1	21.7	16.6
35-54 other qualification	14.5	8.9	10.2	14.5
55-69 Degree/equivalent	8.2	17.0	15.5	8.2
55-69 other qualification	11.2	10.5	10.5	11.2
70+	17.3	16.7	14.1	17.4
No qualification	5.7	3.8	4.7	5.7
Household tenure	34.0	39.5	35.3	34.0
Owned outright	33.7	32.3	31.6	33.7
Mortgage owned	32.4	28.3	33.1	32.3
Rented/other	34.0	39.5	35.3	34.0
Ethnicity				
White	87.5	90.1	88.1	87.5
BAME	12.5	9.9	11.9	12.5
Base	*51,435,642*	*6250*	*6250*	*6250*

Only adults aged 18 or over living in Great Britain were eligible to take part in the survey. Consequently the data have been weighted to the British population aged 18 and over according to the 2020 mid-year population estimates published by the Office for National Statistics/General Register Office for Scotland (Office for National Statistics, 2021b) for age, sex and region, and the latest Labour Force Survey (Office for National Statistics, 2021a) for education, ethnicity and housing

tenure. The demographic composition of the original and final weighted sample, and how this compares with the population estimates, is shown in Table 4.

The calibration weight (BSA21_final_wt) is the final weight used in the analysis of the 2021 survey; this weight has been scaled so that the total sample size is unchanged. The range of the final calibrated weights is between 0.05 and 6.72.

Weighting efficiency and effective sample size

The effect of the weights on the precision of the survey estimates is indicated by the effective sample size (neff). The effective sample size measures the size of an (unweighted) simple random sample that would achieve the same precision (that is, the range of the standard error associated with each estimate) as the design that has been implemented. If the effective sample size is close to the actual sample size, then we have an efficient design with a good level of precision. The lower the effective sample size is, the lower the level of precision. The efficiency of a sample is given by the ratio of the effective sample size to the actual sample size. The effective sample size (neff) of BSA 2021 after weighting is 4,269 with an efficiency of 68%. This is similar to the BSA 2020, which had an effective sample size (neff) after weighting of 2,914 with an efficiency of 74%. For detailed analysis of how this compares to earlier years of the BSA, using the face-to-face model, see the technical notes accompanying the 2020 BSA report (Clery et al., 2021).

Weighted bases

All the percentages presented in this report are based on weighted data but only the unweighted bases are presented in the tables. Details of weighted and unweighted bases for standard demographic variables are shown in Table 5.

Table 5 Weighted and unweighted bases for standard demographic variables

	Weighted base	Unweighted base
Sex		
Male	*3030*	*2737*
Female	*3167*	*3468*
Age		
18-24	*658*	*350*
25-34	*1061*	*1003*
35-44	*1001*	*1016*
45-54	*1051*	*985*
55-59	*532*	*624*
60-64	*454*	*613*
65+	*1478*	*1651*
Ethnicity		
White	*5362*	*5530*
Black and Minority Ethnic	*769*	*605*
Class group (NSSEC)		
Managerial & professional occupations	*3334*	*3841*
Intermediate occupations	*723*	*679*
Employers in small org; own account workers	*383*	*371*
Lower supervisory & technical occupations	*510*	*426*
Semi-routine & routine occupations	*875*	*652*
Highest educational qualification		
Degree	*2168*	*2973*
Higher education below degree	*689*	*884*
A level or equivalent	*1284*	*827*
Qualifications below A levels (such as GCSEs/O Levels)	*1437*	*1053*
Other	*118*	*96*
No qualification	*502*	*362*
Marital status		
Married or in a civil partnership	*3310*	*3298*
Separated or divorced after marrying or civil partnership	*636*	*760*
Widowed/surviving partner from a civil partnership	*236*	*290*
Not married	*1945*	*1812*

Analysis variables

A number of standard analysis variables have been used in some of the chapters in this report. Details of the analysis variables requiring further definition are set out below. Where relevant the name given to the relevant analysis variable is shown in square brackets – for example [EmpOcc]. In 2020, some questions underwent small changes of wording in order to optimise the questions for administration over the web and by telephone

Region

The BSA dataset identifies 11 regions, formerly the Government Office Regions (South East, London, North West, East of England, West Midlands, South West, Yorkshire and the Humber, East Midlands, North East, Wales and Scotland).

National Statistics Socio-Economic Classification (NS-SEC)

It is important to note that NS-SEC was derived differently in 2021 and 2020 from previous BSAs for which information may be found in the Technical details for the 2019 survey (Curtice et al., 2020)'.

For the 2020 survey, respondents were asked to self-code their current or last job into an eight category variable [EmpOCC]. An employment status variable that summarises information on employment status and size of organisation was also derived [EmplStatDV] from questions on whether an individual is:

- an employer, self-employed or an employee [Empstat;
- size of organisation [employ]; and
- supervisory status [Superv].

The National Statistics Socio-Economic Classification (NS-SEC) was derived from a combination of the information on occupation and employment status [RclassGP]. This allows respondents to be classified into the following socio-economic groups:

- Managerial and professional occupations
- Intermediate occupations
- Small employers and own account workers
- Lower supervisory and technical occupations
- Semi-routine and routine occupations

Those who have never had a job are coded as "not classifiable".

Party identification

Respondents are classified as identifying with a particular political party on one of three counts: if they consider themselves supporters of that party; closer to it than to others; or more likely to support it in the event of a general election. Responses are derived from the following questions:

> ***Generally speaking, do you think of yourself as a supporter of any one political party? [Yes/No]***
> ***[If "No"/"Don't know"]***
> ***Do you think of yourself as a little closer to one political party than to the others? [Yes/No]***
> ***[If "Yes" at either question or "No"/"Don't know" at 2nd question]***
> ***Which one?/If there were a general election tomorrow, which political party do you think you would be most likely to support?***
> ***[Conservative; Labour; Liberal Democrat; Scottish National Party; Plaid Cymru; Green Party; UK Independence Party (UKIP); Brexit Party; Other party; None; Refused to say]***

Income

In 2020, the BSA dataset includes a measure of household income [HHIncome] in which respondents were asked to place themselves into banded income quartiles. The bandings used are designed to be representative of those that exist in Britain and are taken from the Family Resources Survey (Department for Work and Pensions, 2021). In addition, respondents currently in work were asked to place themselves within estimated earnings quartiles.

Attitude scales

Since 1986, the BSA surveys have included two attitude scales which aim to measure where respondents stand on certain underlying value dimensions – left–right and libertarian–authoritarian.[2] Since 1987 (except in 1990), a similar scale on 'welfarism' has also been included. Some of the items in the welfarism scale were changed in 2000–2001. The current version of this scale is shown below.

A useful way of summarising the information from a number of questions of this sort is to construct an additive index (Spector, 1992; DeVellis, 2003). This approach rests on the assumption that there is an underlying – 'latent' – attitudinal dimension which characterises the answers to all the questions within each scale. If so, scores on the index are likely to be a more reliable indication of the underlying attitude than the answers to any one individual question.

Each of these scales consists of a number of statements to which the respondent is invited to "agree strongly", "agree", "neither agree nor disagree", "disagree" or "disagree strongly".

The items are:

Left–right scale

Government should redistribute income from the better off to those who are less well off [Redistrb]
Big business benefits owners at the expense of workers [BigBusnN]
Ordinary working people do not get their fair share of the nation's wealth [Wealth][3]
There is one law for the rich and one for the poor [RichLaw]
Management will always try to get the better of employees if it gets the chance [Indust4]

Libertarian–authoritarian scale

Young people today don't have enough respect for traditional British values. [TradVals]
People who break the law should be given stiffer sentences. [StifSent]
For some crimes, the death penalty is the most appropriate sentence. [DeathApp]
Schools should teach children to obey authority. [Obey]
The law should always be obeyed, even if a particular law is wrong. [WrongLaw]
Censorship of films and magazines is necessary to uphold moral standards. [Censor]

Welfarism scale

The welfare state encourages people to stop helping each other. [WelfHelp]
The government should spend more money on welfare benefits for the poor, even if it leads to higher taxes. [MoreWelf]
Around here, most unemployed people could find a job if they really wanted one. [UnempJob]
Many people who get social security don't really deserve any help. [SocHelp]
Most people on the dole are fiddling in one way or another. [DoleFidl]

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[2] Because of methodological experiments on scale development, the exact items detailed in this section have not been asked on all versions of the questionnaire each year.
[3] In 1994 only, this item was replaced by: Ordinary people get their fair share of the nation's wealth *[Wealth1].*

If welfare benefits weren't so generous, people would learn to stand on their own two feet. [WelfFeet]
Cutting welfare benefits would damage too many people's lives. [DamLives]
The creation of the welfare state is one of Britain's proudest achievements. [ProudWlf]

The indices for the three scales are formed by scoring the leftmost, most libertarian or most pro-welfare position, as 1 and the rightmost, most authoritarian or most anti-welfarist position, as 5. The "neither agree nor disagree" option is scored as 3. The scores to all the questions in each scale are added and then divided by the number of items in the scale, giving indices ranging from 1 (leftmost, most libertarian, most pro-welfare) to 5 (rightmost, most authoritarian, most anti-welfare). The scores on the three indices have been placed on the dataset.[4]

The scales have been tested for reliability (as measured by Cronbach's alpha). The Cronbach's alpha (unstandardised items) for the scales in 2020 are 0.84 for the left–right scale, 0.81 for the libertarian–authoritarian scale and 0.90 for the welfarism scale. This level of reliability can be considered 'good' for the left–right, libertarian and welfarism scales (DeVellis, 2003: 95–96).

Other analysis variables

These are taken directly from the questionnaire and to that extent are self-explanatory. The principal ones are:

- Sex
- Age
- Economic position
- Religion
- Highest educational qualification obtained
- Marital status
- Whether receiving any benefits or tax credits

Sampling errors

No sample precisely reflects the characteristics of the population it represents, because of both sampling and non-sampling errors. If a sample was designed as a random sample (if every adult had an equal and independent chance of inclusion in the sample), then we could calculate the sampling error of any percentage, *p*, using the formula:

$$s.e.(p) = \sqrt{\frac{p(100-p)}{n}}$$

where *n* is the number of respondents on which the percentage is based. Once the sampling error had been calculated, it would be a straightforward exercise to calculate a confidence interval for the true population percentage. For example, a 95% confidence interval would be given by the formula:

$$p \pm 1.96 \times s.e.(p)$$

[4] In constructing the scale, a decision had to be taken on how to treat missing values ("Don't know" and "Not answered"). Respondents who had more than two missing values on the left–right scale and more than three missing values on the libertarian–authoritarian and welfarism scales were excluded from that scale. For respondents with fewer missing values, "Don't know" was recoded to the midpoint of the scale and "Not answered" was recoded to the scale mean for that respondent on their valid items.

Clearly, for a simple random sample (srs), the sampling error depends only on the values of *p* and *n*. However, simple random sampling is almost never used in practice, because of its inefficiency in terms of time and cost.

In BSA 2021, although the (majority of the) sample of addresses is not clustered geographically (in contrast to previous BSAs), because more than one adult is able to take part per address responses are clustered at the household level. Consequently, with a complex design like this the sampling error of a percentage giving a particular response is not simply a function of the number of respondents in the sample and the size of the percentage, but it also depends on how that percentage response is spread within and between households.

This design may be assessed relative to simple random sampling by calculating a range of design factors (DEFTs) associated with it, where:

$$DEFT = \sqrt{\frac{Variance\ of\ estimator\ with\ complex\ design, sample\ size\ n}{Variance\ of\ estimator\ with\ srs\ design, sample\ size\ n}}$$

and represents the multiplying factor to be applied to the simple random sampling error to produce its complex equivalent. A design factor of one means that the complex sample has achieved the same precision as a simple random sample of the same size. A design factor greater than one means the complex sample is less precise than its simple random sample equivalent. If the DEFT for a particular characteristic is known, a 95% confidence interval for a percentage may be calculated using the formula:

$$p \pm 1.96 \times complex\ sampling\ error\ (p) = p \pm 1.96 \times DEFT \times \sqrt{\frac{p(100-p)}{n}}$$

In 2021, most of the questions asked of all sample members have a margin of error of around plus or minus two to three of the survey percentage. This means that we can be 95% certain that the true population percentage is within two to three percentage points (in either direction) of the percentage we report. However, sampling errors for percentages based only on respondents to just one of the versions of the questionnaire, or on subgroups within the sample, are larger than they would have been had the questions been asked of everyone. Table 6 gives examples of the confidence intervals and DEFTs calculated for a range of different questions.

Table 6a Complex standard errors and confidence intervals of selected classification variables

	% (p)	Complex standard error of p	95% confidence interval		DEFT	*Unweighted base*
			Lower	Upper		
Party identification (full sample)						
Conservative	30.4	0.01	28.9	31.9	1.304	*2012*
Labour	31.5	0.01	29.9	33.1	1.373	*1903*
Liberal Democrat	7.3	0.00	6.5	8.1	1.195	*563*
Scottish National Party	3.7	0.00	3.1	4.3	1.260	*206*
Plaid Cymru	0.6	0.00	0.4	0.9	1.247	*36*
Green Party	7.6	0.00	6.8	8.5	1.290	*512*
None	13.5	0.01	12.4	14.8	1.388	*696*
Housing tenure (full sample)						
Owns	67.1	0.01	65.3	68.8	1.487	*4452*
Rents from local authority	7.3	0.01	6.4	8.4	1.555	*341*
Rents privately/HA	20.6	0.01	19.1	22.2	1.515	*1225*
Highest educational qualification (full sample)						
Degree or above	34.7	0.0	33.3	36.1	1.217	*2973*
Other Higher Education	11.0	0.0	10.2	11.9	1.068	*884*
A levels or equivalent	20.5	0.0	19.1	22.0	1.448	*827*
Qualifications below A levels e.g. GCSEs	23.0	0.0	21.6	24.4	1.346	*1053*
No qualifications	8.0	0.0	7.1	9.0	1.414	*362*
Do you receive any state benefits or tax credits? (full sample)						
Yes	42.5	0.0	40.9	44.2	1.347	*2626*
No	56.3	0.0	54.6	57.9	1.350	*3562*

Table 6b Complex standard errors and confidence intervals of selected attitudinal variables

	% (p)	Complex standard error of p	95% confidence interval		DEFT	*Unweighted base*
			Lower	Upper		
Opinions differ about the level of benefits for unemployed people. Which comes closest to your own view (full sample)						
...benefits for unemployed people are too low and cause hardship	47.9	0.0	45.5	50.3	1.370	*1501*
…benefits for unemployed people are too high and discourage them from finding jobs	45.6	0.0	43.2	48.0	1.368	*1374*
Neither	1.7	0.0	1.3	2.2	1.006	*65*
How much interest do you generally have in what is going on in politics... (full sample)						
A great deal	12.3	0.0	11.4	13.3	1.201	*861*
Quite a lot	25.4	0.0	24.2	26.7	1.177	*1815*
Some	35.5	0.0	34.1	37.0	1.244	*2198*
Not very much	17.8	0.0	16.6	19.0	1.282	*961*
None at all	8.8	0.0	7.8	9.8	1.473	*406*

Table 6b Complex standard errors and confidence intervals of selected attitudinal variables

	% (p)	Complex standard error of p	95% confidence interval		DEFT	*Unweighted base*
			Lower	Upper		
Opinions differ about the level of benefits for unemployed people. Which comes closest to your own view (full sample)						
Censorship of films and magazines is necessary to uphold moral standards (full sample)						
Agree	41.4	0.0	39.8	43.0	1.306	*2564*
Neither agree nor disagree	23.6	0.0	22.3	25.0	1.284	*1447*
Disagree	34.4	0.0	32.9	36.0	1.327	*2206*
The government should redistribute income from the better off to the less well-off (full sample)						
Agree	48.8	0.0	47.2	50.5	1.325	*3132*
Neither agree nor disagree	23.4	0.0	22.1	24.7	1.274	*1366*
Disagree	27.2	0.0	25.7	28.6	1.310	*1715*
How satisfied or dissatisfied are you with the way the NHS runs nowadays? (run on half the sample)						
Satisfied	35.8	0.0	33.7	38.0	1.289	*1155*
Neither satisfied nor dissatisfied	22.7	0.0	20.9	24.6	1.236	*667*
Dissatisfied	41.0	0.0	38.8	43.1	1.247	*1280*

Analysis techniques

Regression

Regression analysis aims to summarise the relationship between a 'dependent' variable and one or more 'independent' variables. It shows how well we can estimate a respondent's score on the dependent variable from knowledge of their scores on the independent variables. It is often undertaken to support a claim that the phenomena measured by the independent variables *cause* the phenomenon measured by the dependent variable. However, the causal ordering, if any, between the variables cannot be verified or falsified by the technique. Causality can only be inferred through special experimental designs or through assumptions made by the analyst.

All regression analysis assumes that the relationship between the dependent and each of the independent variables takes a particular form. In *linear regression*, it is assumed that the relationship can be adequately summarised by a straight line. This means that a one percentage point increase in the value of an independent variable is assumed to have the same impact on the value of the dependent variable on average, irrespective of the previous values of those variables.

Strictly speaking the technique assumes that both the dependent and the independent variables are measured on an interval-level scale, although it may sometimes still be applied even where this is not the case. For example, one can use an ordinal variable (e.g. a Likert scale) as a *dependent* variable if one is willing to assume that there is an underlying interval-level scale and the difference between the observed ordinal scale and the underlying interval scale is due to random measurement error. Often the answers to a number of Likert-type questions are averaged to give a dependent variable that is

more like a continuous variable. Categorical or nominal data can be used as *independent* variables by converting them into dummy or binary variables; these are variables where the only valid scores are 0 and 1, with 1 signifying membership of a particular category and 0 otherwise.

The assumptions of linear regression cause particular difficulties where the *dependent* variable is binary. The assumption that the relationship between the dependent and the independent variables is a straight line means that it can produce estimated values for the dependent variable of less than 0 or greater than 1. In this case it may be more appropriate to assume that the relationship between the dependent and the independent variables takes the form of an S-curve, where the impact on the dependent variable of a one-point increase in an independent variable becomes progressively less the closer the value of the dependent variable approaches 0 or 1. *Logistic regression* is an alternative form of regression which fits such an S-curve rather than a straight line. The technique can also be adapted to analyse multinomial non-interval-level dependent variables, that is, variables which classify respondents into more than two categories.

The two statistical scores most commonly reported from the results of regression analyses are:

- *A measure of variance explained*: This summarises how well all the independent variables combined can account for the variation in respondents' scores in the dependent variable. The higher the measure, the more accurately we are able in general to estimate the correct value of each respondent's score on the dependent variable from knowledge of their scores on the independent variables.
- *A parameter estimate*: This shows how much the dependent variable will change on average, given a one-unit change in the independent variable (holding all other independent variables in the model constant). The parameter estimate has a positive sign if an increase in the value of the independent variable results in an increase in the value of the dependent variable. It has a negative sign if an increase in the value of the independent variable results in a decrease in the value of the dependent variable. If the parameter estimates are standardised, it is possible to compare the relative impact of different independent variables; those variables with the largest standardised estimates can be said to have the biggest impact on the value of the dependent variable.

Regression also tests for the statistical significance of parameter estimates. A parameter estimate is said to be significant at the 5% level if the range of the values encompassed by its 95% confidence interval (see also section on sampling errors) are either all positive or all negative. This means that there is less than a 5% chance that the association we have found between the dependent variable and the independent variable is simply the result of sampling error and does not reflect a relationship that actually exists in the general population.

Factor analysis

Factor analysis is a statistical technique which aims to identify whether there are one or more apparent sources of commonality to the answers given by respondents to a set of questions. It ascertains the smallest number of *factors* (or dimensions) which can most economically summarise all of the variation found in the set of questions being analysed. Factors are established where respondents who gave a particular answer to one question in the set tended to give the same answer as each other to one or more of the other questions in the set. The technique is most useful when a

relatively small number of factors are able to account for a relatively large proportion of the variance in all of the questions in the set.

The technique produces a *factor loading* for each question (or variable) on each factor. Where questions have a high loading on the same factor, then it will be the case that respondents who gave a particular answer to one of these questions tended to give a similar answer to each other at the other questions. The technique is most commonly used in attitudinal research to try to identify the underlying ideological dimensions which apparently structure attitudes towards the subject in question.

Table and figure conventions

The following conventions are used for tables and figures throughout the report.

1. Data in the tables are from the 2021 British Social Attitudes survey unless otherwise indicated.
2. Tables are percentaged as indicated by the percentage signs.
3. In tables, '*' indicates less than 0.5 % but greater than zero, and '–' indicates zero.
4. When findings based on the responses of fewer than 100 respondents are reported in the text, reference is made to the small base size. These findings are excluded from line charts but included in tables.
5. Percentages equal to or greater than 0.5 have been rounded up (e.g. 36.5 % = 37 %).
6. In many tables the proportions of respondents answering "Don't know" or not giving an answer are not shown. This, together with the effects of rounding and weighting, means that percentages will not always add up to 100 %.
7. The unweighted bases shown in the tables (the number of respondents who answered the question) are printed in small italics.
8. In time series line charts, survey readings are indicated by data markers. While the line between data markers indicates an overall pattern, where there is no data marker the position of the line cannot be taken as an accurate reading for that year.

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