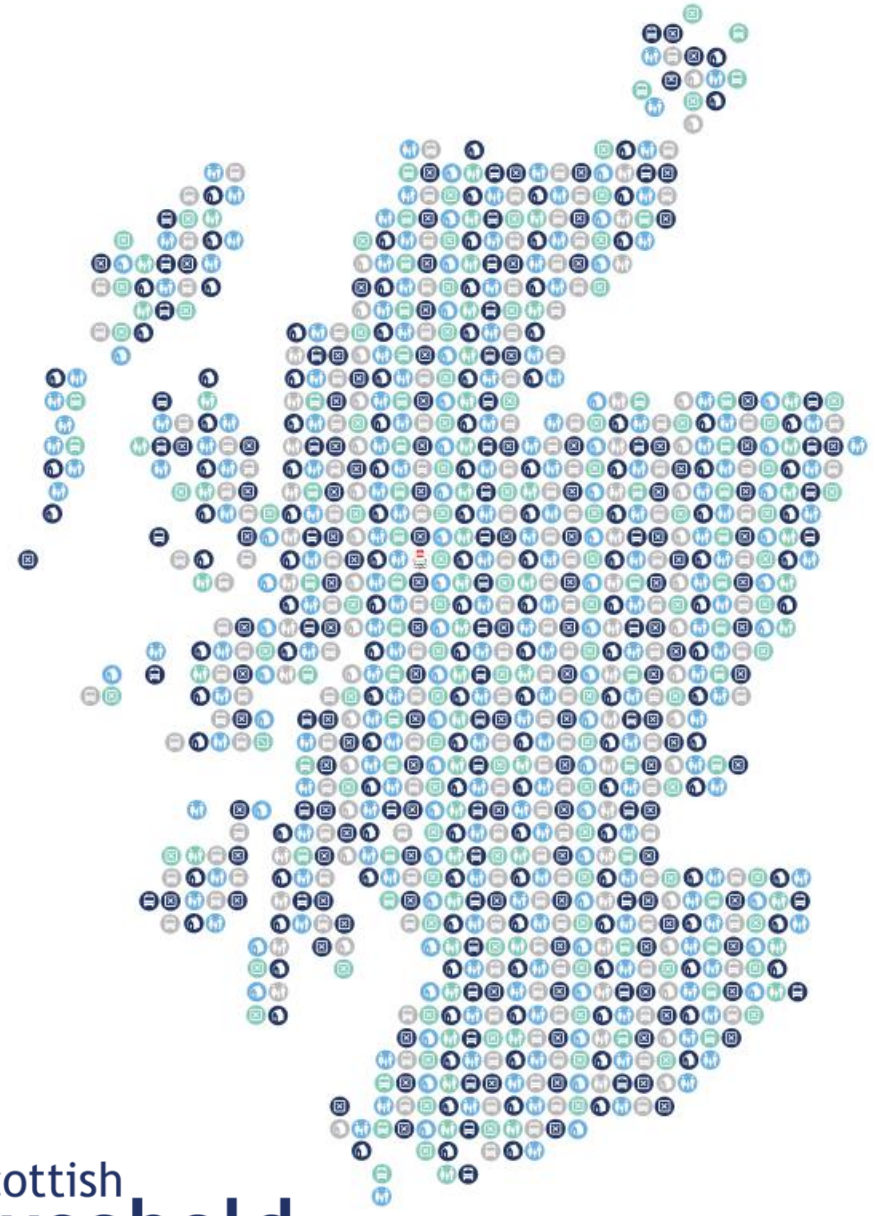
Scottish Household Survey:

Behind the Numbers | 2018

A National Statistics publication for Scotland



Scottish Household Survey

Help Shape Scotland

Scottish Government
Riaghaltas na h-Alba
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Acknowledgements

The Scottish Government acknowledges and thanks the 10,532 people across Scotland who gave their time to take part in the Scottish Household Survey 2018.

This report was produced by the Scottish Household Survey Project Team at the Scottish Government.

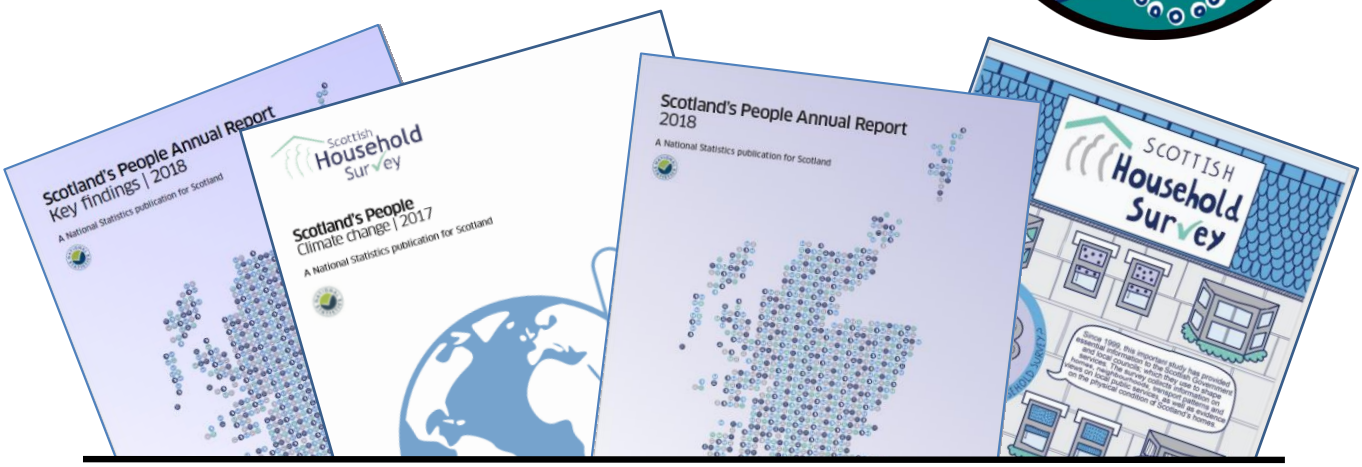
We would also like to thank all the Scottish Government lead analysts who contributed to the project.

Finally, special thanks to Ipsos MORI and their interviewers and surveyors for continuous efforts during the fieldwork.

Contents

What is a survey?

A survey is a way of gathering information from individuals. We ask questions about people's opinions or experiences and then generalise our results to Scotland.



The Scottish Household Survey (SHS) is the largest face-to-face survey that the Scottish Government runs.

The Scottish Household Survey sample has been designed to produce results for the whole of Scotland and every local authority **every year.**

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Why are surveys important?

Information from people living in Scotland is a critical source of data, not just for the government, but also for academics, charities, the media and citizens themselves.

Collecting people's views means policies and laws are made with input from the people who have to live by them.

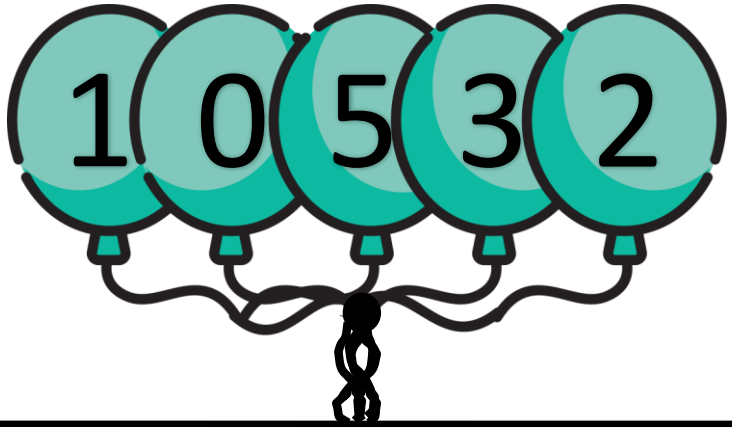
All kinds of people use this information to shape Scotland. For example, the government can check if polices are working, and if we are meeting our targets.

The people of Scotland tell us their views.

How long has the SHS been running?

The Scottish Household Survey has run continuously in Scotland since devolution in 1999.

How many people do you speak to?



In 2018 the final number of social survey interviews in the sample was 10,532, exceeding the target of 10,450.

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What data is collected in the SHS?

We collect information about Scottish homes and the people who occupy them. The interview is in two parts: a household section and an adult section.

Generally the Highest Income Householder or their spouse/partner answers the first part.

And one adult (aged 16+) member of the household is selected at random to conduct the second part.

The 2018 **Household** part covered topics such as: Basic Demographics, Property Type and Tenure, Internet Access, Cars and Bicycles, Schools, House Condition, Household Income and Employment, Childcare, Standard of Living, *and more*

The 2018 **Random Adult** part covered topics such as: Housing Experiences, Discrimination and Harassment, Qualifications, Views on Climate change, Self-assessed Health, Caring Responsibilities, Greenspace, Volunteering, Employment Status, *and more*

How is the SHS data collected?

Professional interviewers conduct face-to-face interviews with a sample of the people in Scotland.

Interviewers ask questions and have a book of multiple choice answers for the respondent...

Interviewers work for Ipsos MORI and use computer tablets to record answers.

...This is followed by a physical survey of the dwelling by professional surveyors.

Interviewers are required to make up to six calls at an address.

Surveyors complete a physical inspection of the dwelling.

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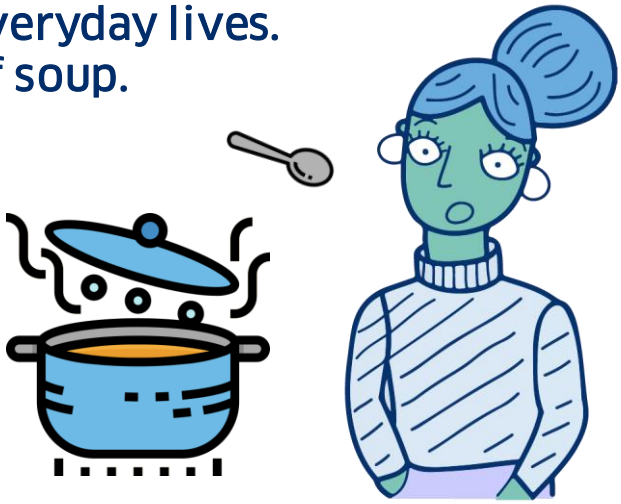
What is a sample?

A sample is a small quantity, used to estimate the whole

For the SHS, a sample is the group of people who are asked our survey questions. This group of people should represent the people of Scotland so that we can use our data to talk about the country as a whole.

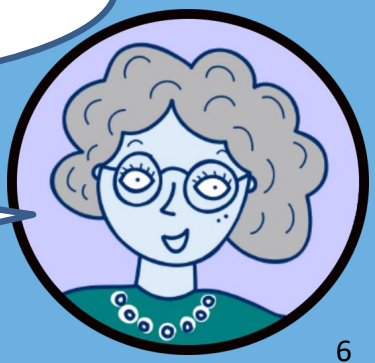
People use sampling in their everyday lives. Imagine you're making a pot of soup.

...To check how it tastes, do you need to eat the whole pot? Or will a spoonful (or sample!), be enough?



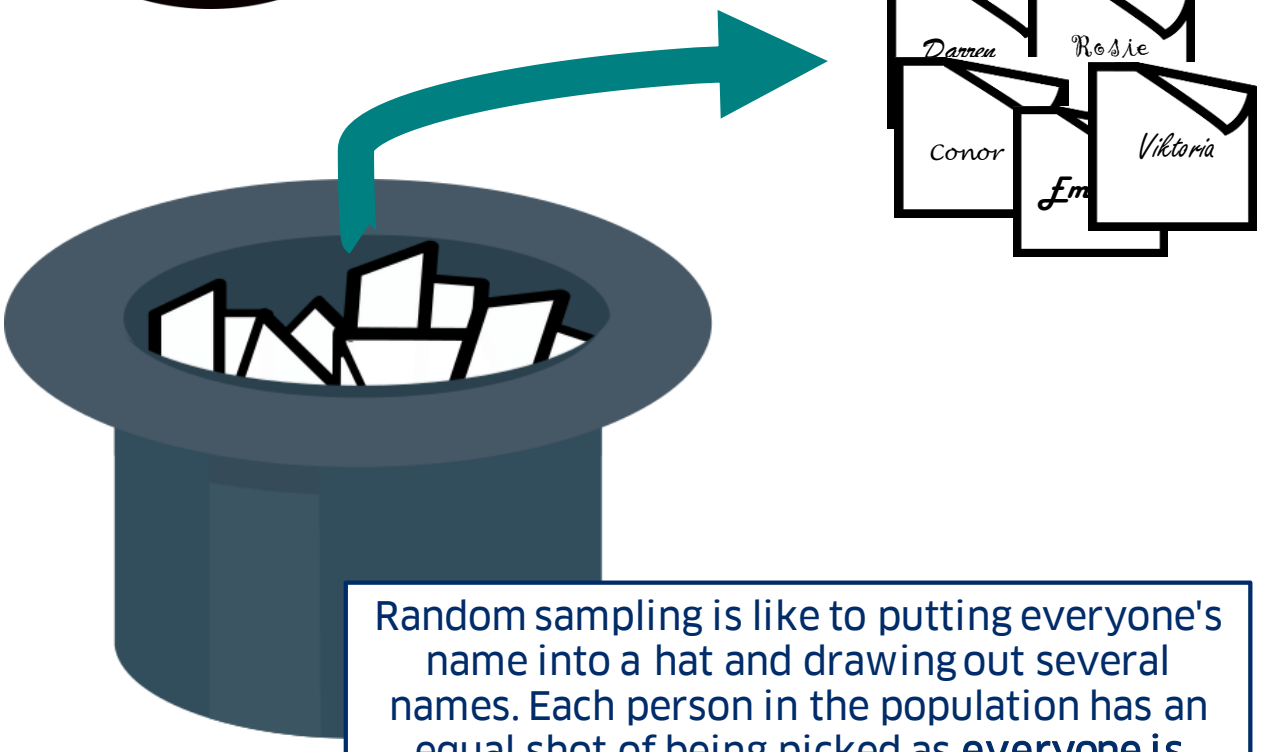
Why don't you speak to everyone?

We only speak to a sample of people to reduce the burden on people in Scotland and because it is cheaper.



How do you get it to be representative?

We choose our sample of the general population **randomly** each year.



Random sampling is like to putting everyone's name into a hat and drawing out several names. Each person in the population has an equal shot of being picked as **everyone is selected by chance.**

This means that those selected are **more likely to represent the entire Scottish population.**

This is critical to the overall survey research design.

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Where do the addresses for the SHS sample come from?

We randomly select addresses from the Royal Mail's list of residential addresses.*

We don't know anything about the people living at this address until we come. We do not have an email, phone number, or even a name.

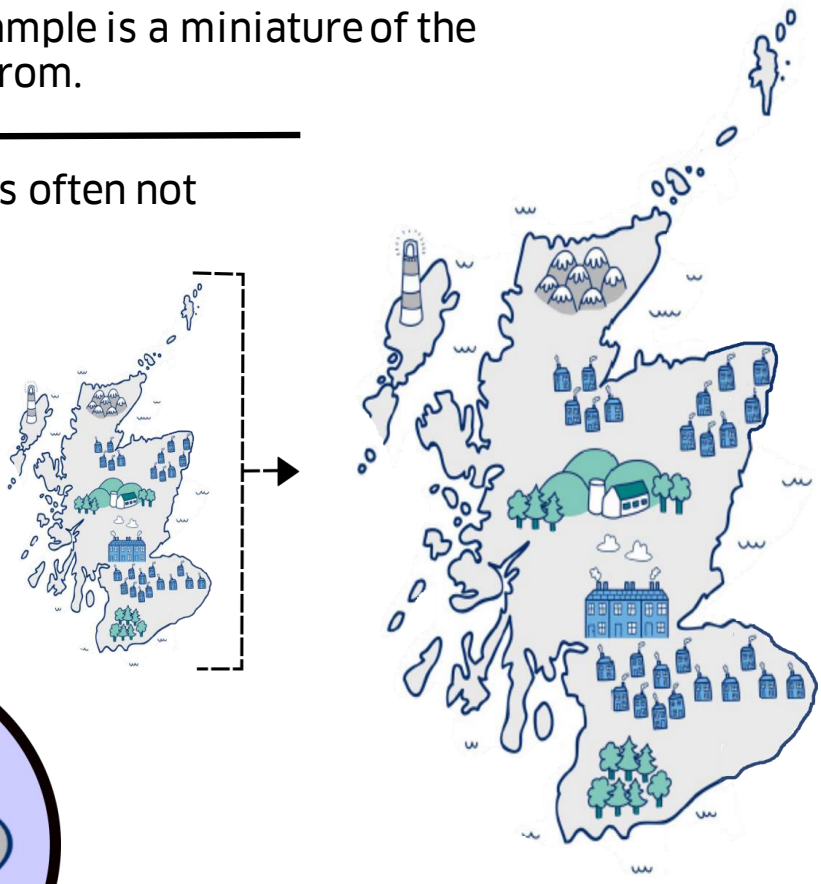
The sample of the population is made up of all **households**, and excludes prisons, hospitals and military bases.

*Called the small user Postcode Address File

So the SHS represents everyone in Scotland?

Ideally, a selected sample is a miniature of the population it came from.

Unfortunately, this is often not the case.



One of the problems we face is non-response; when respondents don't want to take part. This may cause some groups to be over- or under-represented. **This can introduce bias.**

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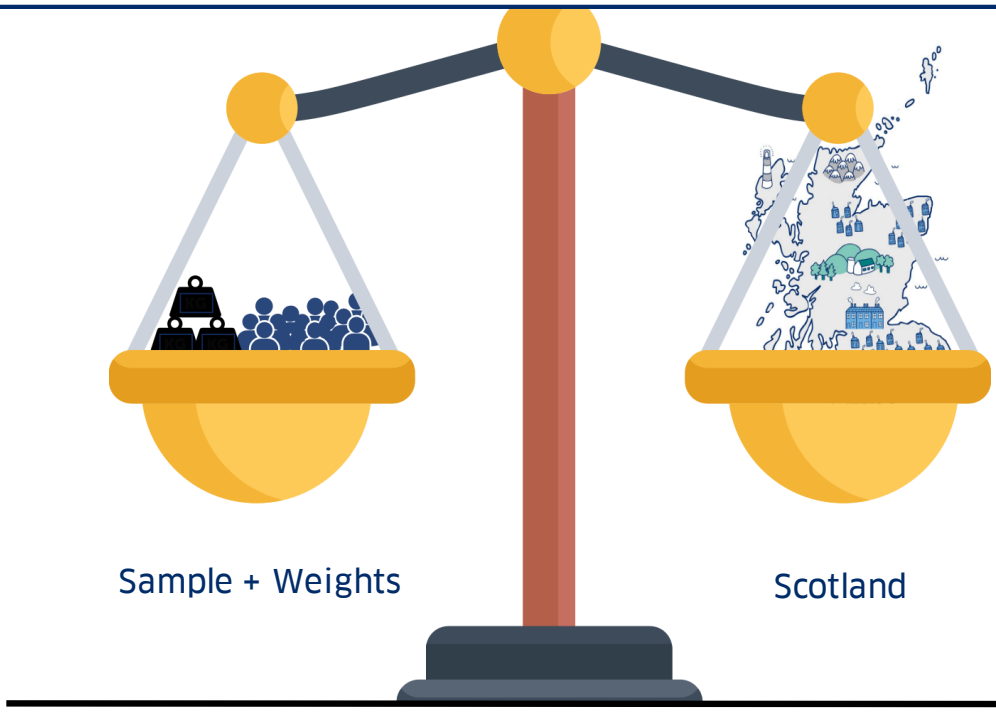
What do you do about bias?

A correction technique called 'weighting adjustment' is made to make sure the sample is representative of the population.

We assign an adjustment weight to each person to ensure our sample represents the population of Scotland.



The procedures for the implementation of the weighting methodology were developed by the Scottish Government working with the Methodology Advisory Service at the Office for National Statistics.

The weighting procedures for the SHS incorporate a selection weighting stage to address the unequal selection probabilities and calibration weighting to correct for non-response bias. Calibration weighting derives weights such that the weighted survey totals match known population totals

I'm busy, couldn't you just go next door instead?

Sorry, but once we have randomly selected an address, we cannot change it. We're not looking for just anyone to respond.

We use **Systematic Random Sampling**, which is the purest form of sampling.

Every household within each local authority has an equal chance of being selected. Interviewers make every attempt to contact this household.

This means that confidence intervals can be calculated, and accurate comparisons can be reported.

We can see if something has risen or fallen over time, or if things vary between regions or groups of people.

This is not always the case for surveys that use less reliable sampling methods.

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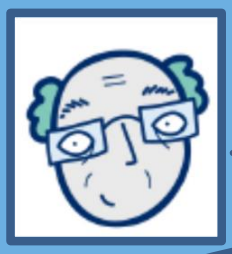


Why is your method more reliable than others?

We use random sampling. Other methods are cheaper and easier to collect, but the results are less accurate. Random sampling is the most accurate method.

"Better value" methods have their place. However, if the sampling method is **not random**, we have **less confidence** in the results, and should be careful when using them, particularly when making comparisons.

Quota sampling, for example, is non-random. It tries to capture people with certain characteristics. The probability of someone being included is not known, so confidence intervals cannot be calculated.

Let's compare random and quota sampling.

	Random	Quota
Cost	↑	↓
Time	↑	↓
Accuracy	↑	↓

Random sampling is more expensive and time consuming, but gives us accurate results.

Quota sampling is cheaper and less time consuming, but gives us less accurate results

What are confidence intervals?

A way of expressing the **range** of values that we have confidence our true value falls within.

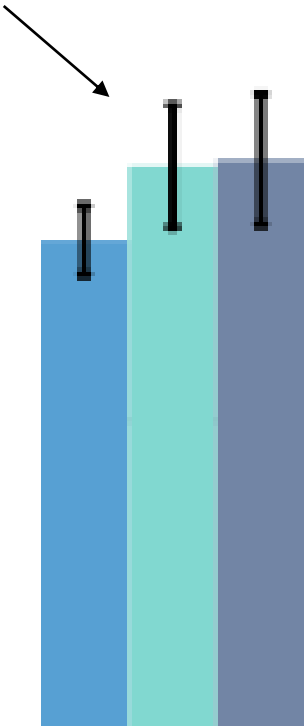
Like all sample surveys, the SHS can only produce **estimates**. However, because we use a robust sampling method, we are able to calculate confidence intervals.

Because we are making estimates, we need to take some **uncertainty** into account. Confidence intervals help us to do this.

You might see **error bars** like these, which show our confidence intervals. These are a range of values a little above and a little below the top of the bar.

We can't tell you the **exact** value for the population of Scotland.

But **we can say** that we have confidence that it falls within these bars.

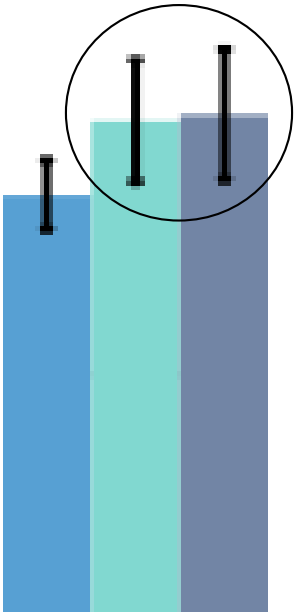


What is statistical significance?

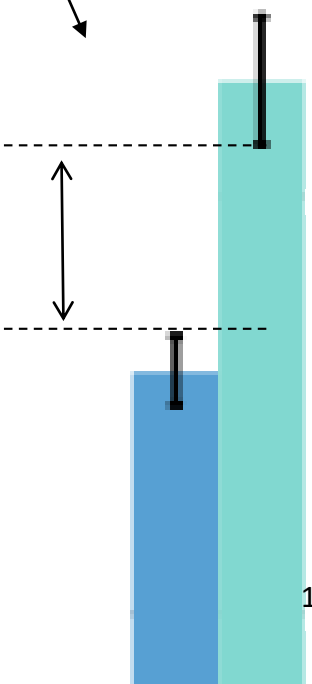
Statistical significance tells us whether differences between groups or changes over time are genuine.

If we want to say that two things are **different,** we have to take our degree of uncertainty into account. To do this, we need to 'test' if the difference is statistically significant. In our Annual Report we only comment on statistically significant findings.

Remember our error bars? Well, if they **overlap**, like this, then we **cannot be sure** that the difference between the values is statistically significant.



Here however, the error bars **do not overlap**. The difference between these values is **statistically significant.**



We should only report on findings which are **statistically significant.**

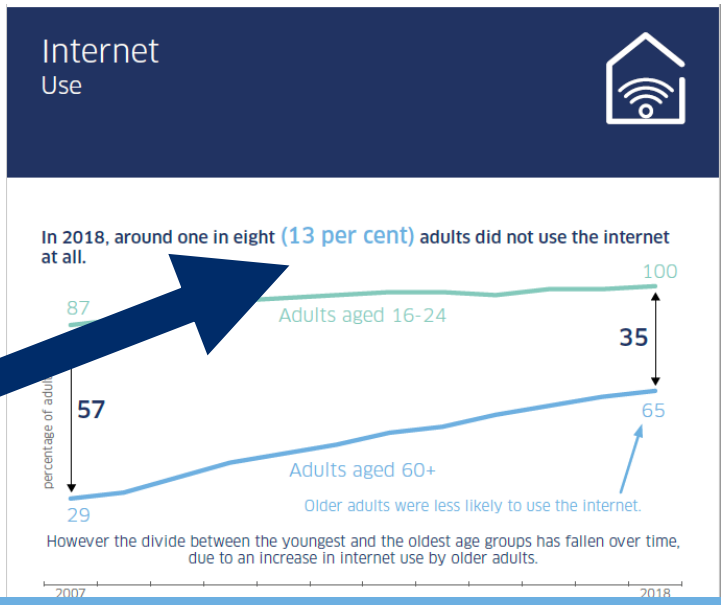
Why can't I do it online?

We can't do the survey online because the data wouldn't be accurate enough.

For example, we collect information about the number of people in Scotland who don't use the internet. We couldn't get an accurate answer for this from an online survey...

...And we would miss the views and opinions of these 13% of adults.

(Source: SHS 2018 Key Findings)



Online surveys are cheaper, but are affected by very low response rates, have problems capturing views of hard-to-reach groups (e.g. people who do not use the internet), and we would only be able to ask a fraction of the questions which we ask.

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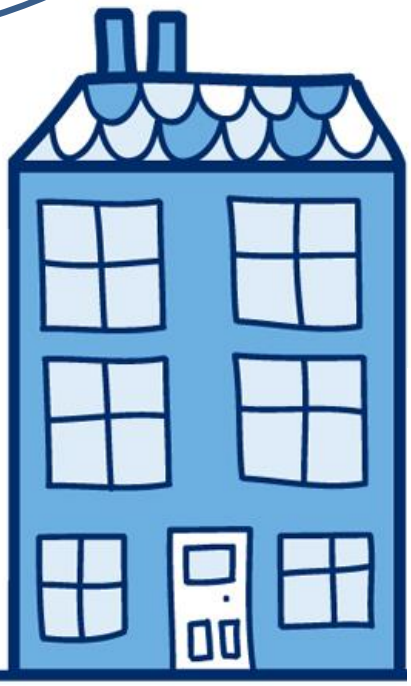
Why can't I do it by post?

Postal surveys are cheaper to collect than face-to-face. However, response rates can be low and they are unlikely to give us a representative sample.

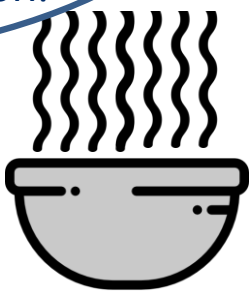


A **postal questionnaire** might be sent out to a random sample, but those who take the time to respond are more likely to represent an interested part of the community than all voices.

How can a sample of 250 for a local authority be representative?

We use robust methods that give us **accurate** estimates. But you're right, the **precision** of these estimates does differ according to sample size. As we increase our sample size, we become more certain about our results to a point, before this increase tails off.

It's a bit like Goldilocks and the Three Bears



Too Cold.
A sample of 50.
With a sample this small we wouldn't be sure our estimates were precise.

Just Right.
A sample of 250.
Our chosen sample size of 250 is large enough for us to trust our estimates, and is an efficient use of our resources.

Too Hot.
A Sample of 500.
We don't need to collect this big a sample. This would be time consuming, expensive, and would only make us slightly more certain.

Based on our calculations, we ensure a minimum number of interviews for each local authority that's '**just right**'. We make sure that we use our resources efficiently, and don't overburden the people of Scotland.

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What is the response rate?

In survey research, the response rate is the number of people who took part divided by the number of people we asked to take part. Our target response rate is 65%.

The response rate of the Scottish Household Survey in 2018 was:

64%

This means over 6 out of every 10 people who we asked to take part, did.

The response rate is an important indicator of survey quality, but not the only one. Non-response can introduce bias into survey estimates.

See further information on quality assurance on page 24.

Has the response rate changed?

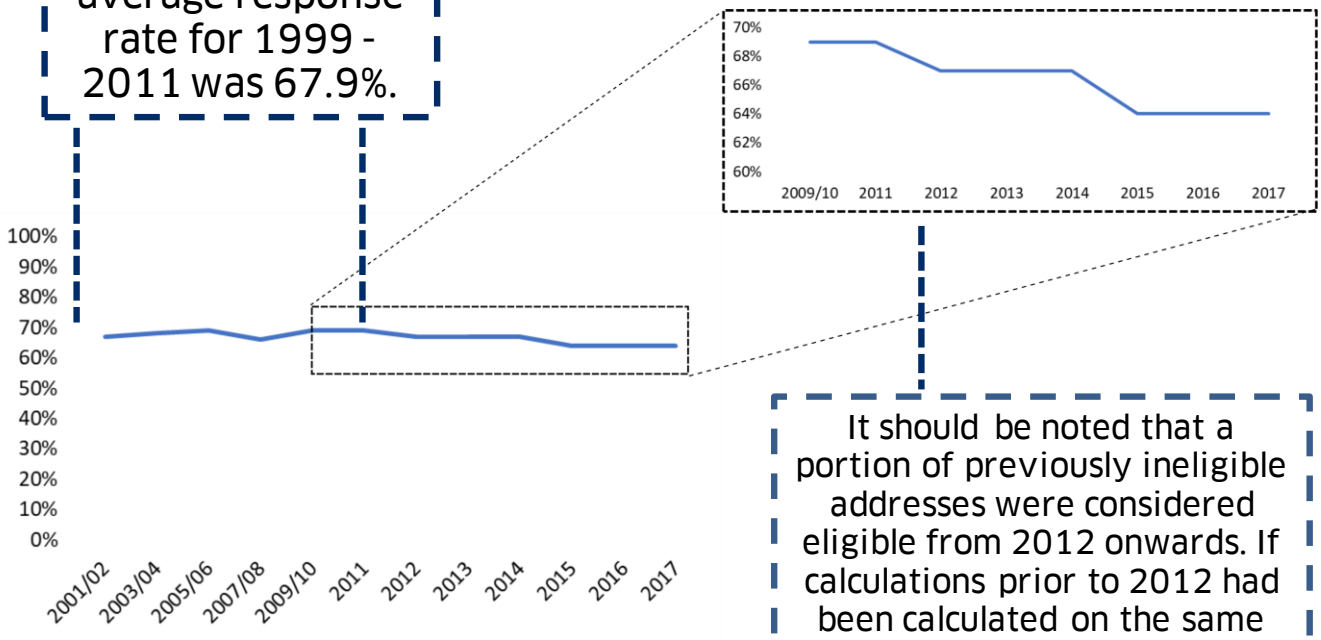
The SHS response rate has fallen by 4% since 1999.

In 2018 the SHS response rate was 64%...

this was the same as in the previous two years...

but 3 percentage points lower than the 2014 response rate of 67%.

The long-term average response rate for 1999 - 2011 was 67.9%.



It should be noted that a portion of previously ineligible addresses were considered eligible from 2012 onwards. If calculations prior to 2012 had been calculated on the same basis, there would have been a lower response rate.

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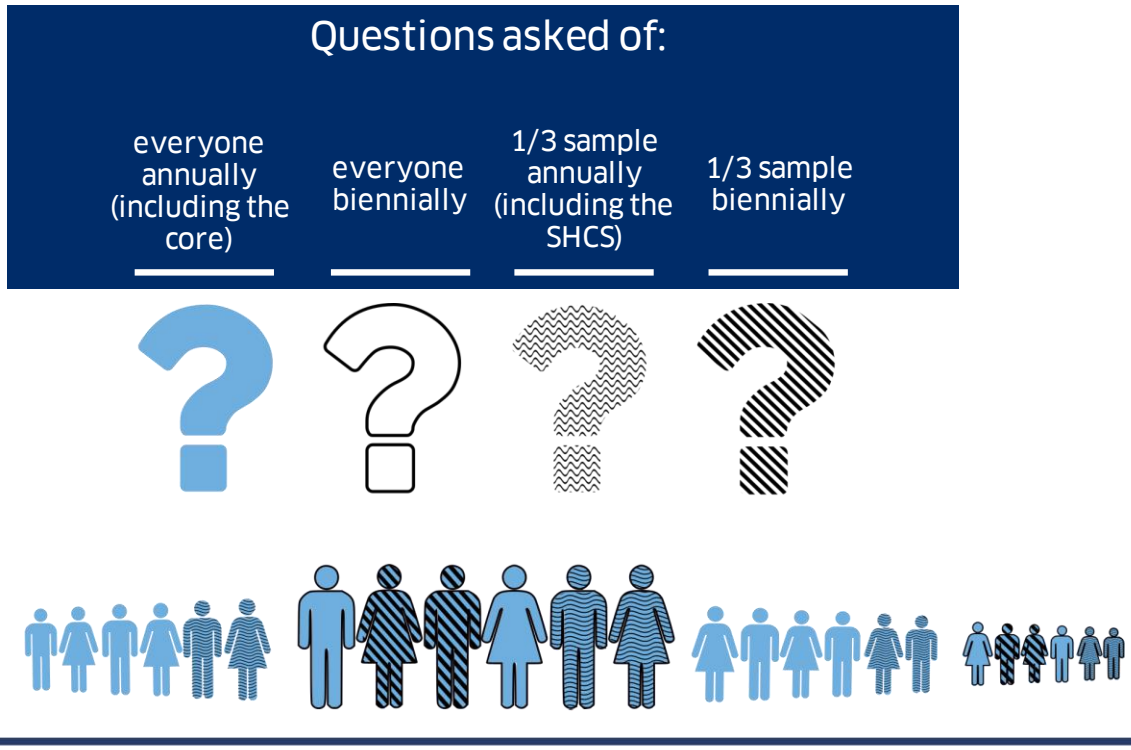
The SHS questionnaire (between 2012 and 2018) has a core and modular design which rotates and replicates across to subsequent years.



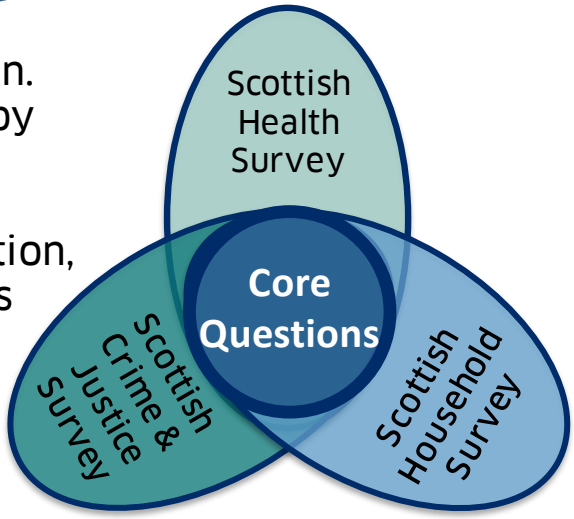
From 2012, the physical survey of the Scottish House Condition Survey (SHCS) has been incorporated into the SHS. Such surveys are conducted by professional surveyors through a visual inspection of the dwelling.

A "core" set of about 20 questions, are included which have been designed to be asked in a consistent way with other surveys.

What are 'core' questions?

Some questions are asked in the same way across the three Scottish Government face-to-face interviewer surveys. For these questions, there is a pooled sample of around 19,500 people.

This large sample gives us more precision. This means we can do detailed analysis by smaller geographies and **equalities characteristics** such as: ethnic group, religion, country of birth, sexual orientation, gender and age. The government use this data to measure Scotland's national performance.



We ask around 20 core questions, which cover these topics:

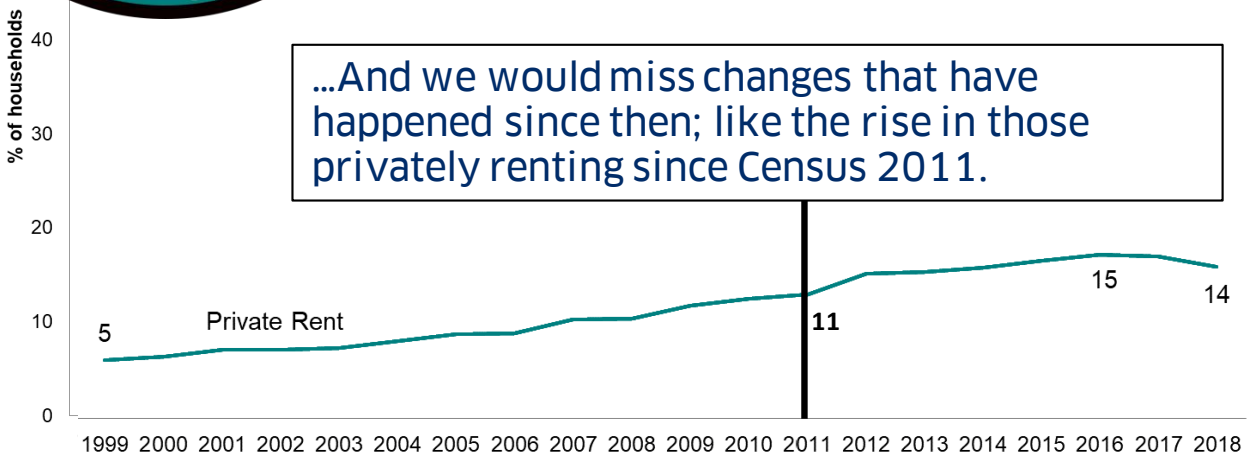
- General Health
- Long Term Condition
- Smoking
- Unpaid Caring
- Perception of Local Crime
- Demographics: Household Types
- Diversity: ethnic group, religion, sexual orientation, country of birth
- Household tenure; SIMD
- Car Access
- Local Service Satisfaction

Why are you asking me these questions when the government already knows all about us?

We need this information because we don't have all the answers about Scotland's population.

The government gets some information from the census but this quickly goes out-of-date as it's only once every 10 years...

...And we would miss changes that have happened since then; like the rise in those privately renting since Census 2011.



*Please note the chart excludes 'other' tenure

(Source: SHS 2018)

Making lawful, ethical, secure and transparent use of administrative data to supplement the information respondents are asked by interviewers could create time and cost savings. Unfortunately most data is not currently readily available to Scottish Government for these purposes. The "Long-term Survey Strategy" published in March 2018 sets out ongoing work to realise the public benefits that access to these data sources would bring, and references the burden asking these questions in surveys places on respondents.

Are there any limitations of SHS data?

There are a number of important methodological and data issues that users need to be aware of when using the SHS data.

Like all sample surveys, the SHS can only produce estimates. However, we also report confidence intervals. A 95% confidence interval is a range of values that you can be 95% certain contains the true mean of the population.

Click me for more details

The SHS is limited in the amount of detail it can collect about some topics. As a multi-purpose survey, the SHS is not designed to provide in-depth information about household income. This can be obtained from more specialised surveys such as the Labour Force Survey and the Family Resources Survey.

Although the SHS has a large sample that covers the whole of Scotland, it has some geographical limitations. Users should not use it to undertake geographical analysis below local authority level. Instead, the Scottish Surveys Core Questions should be used for this.

Users need to be mindful of the sampling errors for analysis, especially when this is based on breakdowns within a local authority.

In statistics, **sampling error** is the **error** caused by observing a **sample** instead of the whole population. The **sampling error** is the difference between a **sample** statistic used to estimate a population parameter and the actual but unknown value of the parameter.

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Measuring and assuring the quality of any survey does not just boil down to the response rate.

We ensure quality at every stage.

The Scottish Household Survey team ensures the quality of the data in many ways. Some of these include...

- Cognitive testing to ensure good quality questions
- Extensive training for interviewers
- Experienced researchers conducting the data processing

The Scottish Household Survey report is produced under the Code of Practice for Official Statistics. National Statistics are produced free of political interference, to agreed standards, and undergo regular quality assurance reviews.
For more information, visit https://www.statisticsauthority.gov.uk/ publication/code-of-practice/

Where can I find out more about the SHS?

The SHS publishes lots of information on various topics. These can be found below.

Publications

SHS Annual Reports

SHS Methodology and Fieldwork Outcomes

SHS Questionnaires

SHS 2018 Local Authority Tables

SHS Interactive Dashboard

SHS 2018 Key Findings

SHS Data Comic

SHS Inequalities Data Comic

Scottish Government Open Data Statistics website

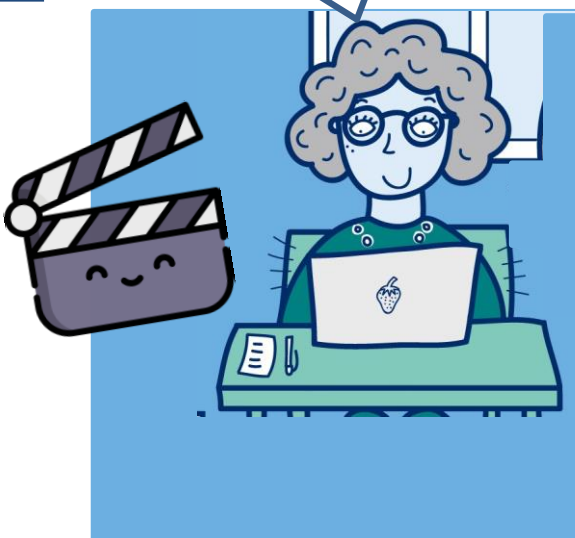
UK National Data Archive

Transport and Travel in Scotland (TATIS)

Scottish Surveys Core Questions (SSCQ)

Scottish House Condition Survey (SHCS)

We also have an animation and a short film. These are on Twitter and Facebook.



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How do I contact the SHS team?

Click me to go directly to the SHS homepage or contact us at the details below.

Contact Details

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Tel: 0131 244 1685

Twitter: Follow us on twitter

Post:
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Mailing list

If you wish to be added to the e-mail mailing list to be kept informed of details of SHS developments, you should register your interest in 'Population and Household Surveys' and/or the Scottish Household Survey' sub-topic on the ScotStat Register

Comic illustrations are by Katie Quinn.