



Top Tips for Critically Assessing Data and Research

The following are general guidelines on how to critically assess data and research.

What is meant by critical?

By being critical, we do not mean being overly negative. To be critical of a piece of data or research means that you question the information and opinions presented in the material, in an attempt to evaluate or judge its worth overall.

Some Top Ten Tips to consider when critiquing a piece of data or research are:

1. Timeliness

Is the information current and up-to-date? Is historical information still valid? Is information from 2003 or 1998 still useable? Will it still help to inform an argument and hold up under scrutiny? Are the findings from new data and research conclusive or are they still being tested and trailed? Is the data from a longitudinal study (which can provide powerful information but has its limitations)?

Population or financial information can quickly change and become out-of-date (e.g. rates of volunteering or the economic impact of volunteering) so it is important to check that you are using the most current information available.

More in-depth information – such as how people think about volunteering or identifying a range of motivations for volunteering – might have a longer lifespan, as the way ideas are constructed and how people behave can take longer to change.

2. Impartiality

Who produced the material? Why did they produce the material? Is the research impartial or does the author have an agenda? Does the material present a balanced view?

A key factor to consider is who is funding the research and who is in control of communicating its findings. Do they have a particular agenda? Is the research objective enough?

Extreme examples of manipulation can be found in pharmaceutical or tobacco industries, where companies have been accused of manipulating clinical trials for commercial reasons and deliberately delaying the release of negative findings.

3. Clarity - Using Definitions

Are definitions clearly stated and are they consistent between different sources?

A common example might be a piece of research talking about 'young people' but not clearly defining what they mean by this (i.e. 10-16 years or 16-24 years)? Another is presenting research or data about volunteering and not being specific about the type of voluntary participation (e.g. formal or informal, group or individual).

4. Clarity - Methodology

Has the method used to collect the information been clearly explained? What questions were asked? How was the data captured? What unit of measurement has been used (i.e. count, percentage, rate per population)? What geography does the data cover? What techniques were used to select the people invited to a focus group? What errors and issues did the researcher identify with this approach? Have any limitations and/or caveats been clearly documented?

The [Scottish Household Survey \(SHS\)](#) contains a detailed methodology, including a section on data limitations. It is good practice to consult the methodology as this will help you decide whether the process for collecting the information was well thought through and will help you to gauge the overall quality and accuracy of the findings that have been produced.

A common omission in reporting is not talking about how respondents were identified to take part in a survey or approached to take part in a focus group or interview. Whether or not people were 'randomly' selected or purposely selected to make sure the right people were included makes a big difference to the reliability of the results.

5. Sample Size

How many people have been interviewed? How many people have replied to a survey? Does it matter if only seven people have taken part? If only a few people have responded, can the findings be generalised to the wider population?

Large sample sizes tend to produce more accurate estimates, making it easier to accept that the findings from a large sample are true of the whole population. For example, the SHS is a large-scale social survey which interviews around 11,000 households every 2 years. Such a large sample means we can accept that the findings from the survey are likely to be true for the whole population. If the survey only sampled 200 people, then it would be a stretch to say its results could be generalised to the whole of Scotland.

For qualitative research, greater numbers are always a plus, but what is also important is that a range of experience(s) is reflected across participants. While it would be difficult to apply the findings from a focus group of 30 volunteers in Stirling to the rest of Scotland, their experience would still be relevant and useful to inform decision-making within Stirling.

The way to judge sample size is not to think about whether it is a large enough proportion of the population you are trying to sample, but whether the absolute sample size is adequate. A useful analogy to explain this concept is the 'chicken soup' analogy. If you wanted to know whether a pot of chicken soup contained enough seasoning, you would need to test it. If the spoon you used was too small, you would not get an accurate idea of how the soup tasted. However, if you were to use a large enough spoon, say a tablespoon, you would sample enough of the soup to make a decision on the seasoning. If it was a very large pot of soup, a tablespoon of soup to test the taste would still be enough. You would not increase the size of the tasting spoon based on the size of the pot. Likewise, the absolute sample size is the most important thing when surveying, rather than trying to sample a proportion of the whole population.

6. Ethics

Are any ethical considerations described and explained?

Research ethics are a set of principles guiding how researchers should conduct themselves, particularly in relation to projects involving human participants. Typical considerations include ensuring participants are fully aware of what the study involves (informed consent), putting safe guards in place to see no harm is caused to participants (particularly where children and vulnerable people are involved), etc.

The [Social Research Association \(SRA\)](#) provides detailed guidance on ethical standards in social research.

7. Comparability

Can you compare the information with different sources of material? Can the information be compared across time (time series analysis)? Have there been any changes in methodology that need to be accounted for?

For example, although the wording of the volunteer question in the SHS has remained the same since 2006/07, there were several years prior to this where different volunteer questions were tested. Even questions worded slightly different can extract different responses from participants, so this needs to be taken into consideration when comparing information across time.

8. Accuracy

Is the information accurate? Are the findings what you would have expected? Are the strengths and weaknesses of the study acknowledged? Are the claims from the research too 'grand'? Is the information clear and simple to understand? Can you determine what are facts and what are predictions or assumptions? Is there evidence to support any assumptions? Have any statistical tests been used to confirm the significance of any findings or to measure the confidence that can be placed in any results?

For example, the 2011 SHS report concludes: "the majority of respondents stopped being involved in voluntary work or activities because of changes to their life circumstances, for example because they no longer had the time (23%), because they moved house (12%) or due to illness (10%). There was little indication that people stopped volunteering due to anything the organisation they had volunteered for had done, or had failed to do: for example, only 1% said they had felt unappreciated and 2% felt things could have been better organised."

We would argue that people indicating they no longer had time or because they had moved, does not necessarily mean there was 'nothing the organisation...had done, or failed to do'. There are examples of roles being made more flexible to account for a change in circumstances which enables people to carry on volunteering. We would therefore suggest this conclusion is an assumption and is not necessarily true in all cases.

9. Data Gaps

Are there any gaps in the material that need to be taken into consideration when drawing any conclusions? What information has not been provided? How useful or important is it to have this information? Where else could you find this information to plug the gap?

For example, the Scottish Charity Register that is produced by the [Office of the Scottish Charity Regulator \(OSCR\)](#) only contains information on registered charities. Any voluntary organisation that is not a registered charity is not included. If you wanted to calculate how many Third Sector organisations there were in your Local Authority area and you only used information from the Charity Register, you would be missing all of the organisations that were not registered as a charity from your findings.

10. Supporting Evidence

Are the findings from one study supported by findings from another study? A stronger argument and a clearer picture can be produced if different sources of information are in agreement.

For example, in the Volunteering in Scottish Charities survey

(<http://www.volunteerdevelopmentscotland.org.uk/research/charity-survey-2011/>), small local charities reported difficulties in finding and keeping suitable volunteers. The Volunteering in Scotland omnibus survey suggested that relatively small proportions wanted to either begin volunteering or increase the number of organisations/groups they volunteered with. These two findings are more powerful in combination.