



Top Tips for Presenting Data and Research

The following are general guidelines on presenting data and research

There is no 'one size fits all' approach to presenting data or research. How you present your information will depend on who your intended audience is and the type of information that you are trying to communicate. A range of practical tools and techniques are available to help you present data using a combination of text, tables and graphics.

Resources that we find useful are:

- [IBM Many Eyes](http://www-958.ibm.com/software/analytics/manyeyes/) which is a handy and easy-to-use tool for creating different data visuals (<http://www-958.ibm.com/software/analytics/manyeyes/>);
- The [Institute for Research Innovation in Social Services \(IRISS\)](http://www.iriss.org.uk/) which hosts a number of resources and workshops that you can access to help you present information (<http://www.iriss.org.uk/>);
- The [Making Data Meaningful](http://www.unece.org/stats/documents/writing/) series of guides that have been produced by the United Nations Economic Commission for Europe (<http://www.unece.org/stats/documents/writing/>).

Based on what we have learnt working in this field, here are some of our top tips for presenting data and research:

1. The audience is in the driving seat

Who are you targeting your information at? You need to know who your audience is to work out what story and visual devices are most likely to capture their attention. You should consider whether you are producing information in a formal or informal setting and whether you intend to publish the information.

You need to know your audience (their interests, priorities, etc.) and their abilities. Remember not to assume that they know what you know, either about the data or the subject matter.

You might find it helpful to keep a log of preferred writing styles for your different audiences for future reference.

2. Tell a story

For data to be meaningful to your audience, it is important to find meaning in the numbers. To engage with your readers, you need to show the significance, importance and relevance of the information that you are presenting. You should provide accurate and informative coverage that is written as clearly, concisely and simply as possible. You should aim to inform people, not confusing them.

3. Write like a journalist

Readers lose interest quickly, so the most critical information must be at the beginning of the text.

Use the writing style adopted by journalists. Present the most important facts first, followed by additional points in decreasing order of importance.

4. Introduce structure

Structure your text so that each section makes sense on its own and also contributes to the overall story you are telling. Subheadings are an effective tool for strengthening the organisation of a document. They break it into manageable and meaningful sections.

5. Keep it short and simple (KISS)

Simple language is at the centre of any successful communication. This does not apply just to your text. It is also relevant for tables, visuals and graphics. Plain language is a more inclusive language and will convey a clear and concise message that is faster for your reader to digest. Avoid the passive voice and use the active voice wherever possible.

Some general tips for clear writing:

- Use short sentences;
- Aim for one idea per sentence;
- Break up long sentences;
- Start each paragraph with the most important message;
- Keep paragraphs short;
- Keep your writing crisp.

6. Technical speak

Be careful when using acronyms and be sure to spell them out fully the first time that you use them. Avoid technical terminology wherever possible. This is not user friendly and can put people off reading the material. Use the simplest words that fit your message and that your reader will understand.

7. A picture is worth a thousand words

One of the best techniques for understanding data is to visualise the numbers as a picture. Readers often find visual graphics easier to understand and charts and maps have an impact on nearly everyone – providing the visual is simple and effective. See [Annex A](#) and [Annex B](#) for some examples.

Consider using some freely available data visualisation tools (for example: <http://www-958.ibm.com/software/analytics/manyeyes/> or <http://www.iriss.org.uk/>) which can make a big difference to how people engage with the story you are trying to tell through the data.

8. Technology is merely a servant

There are many fun and creative ways to display data in charts and graphics – but do not get carried away. There must be a balance between function and design. Readers should be able to quickly and accurately interpret the information – they should not have to “dig out” the message.

Try testing out some charts or graphics with your colleagues to see what works well.

9. The reliable table

Good tables are an integral part of presenting information. Using tables effectively helps you minimise the number of data values in your text.

It also means you do not have to discuss less significant findings that are not essential to the story line- the table does it for you.

10. Clear as mud

Be clear about the limitations and gaps in your data and research. This does not undermine or decrease the value of your information (providing you have used robust methods) but helps the reader to understand the relevance and context of your information and promotes greater transparency.

Annex A: Tables

A well presented table can provide a great deal of information that readers can quickly absorb.

Checklist for designing a good table:

- 1) Decide the most effective way to present your information, i.e. should dates be in chronological or reverse chronological order, should you display the table in portrait or landscape, etc.
- 2) Columns should be evenly spaced and not too far apart. The table should only be as wide as the data content requires.
- 3) Ensure the table title, column headings and row stubs provide a clear, concise and accurate description of the data. Answer the “what”, “where” and “when” questions. Any relevant metadata (e.g. time period or geographic area) should be included.
- 4) It should be clear what unit of measurement has been used (e.g. count, percentage, etc.) and how any calculations have been produced, i.e. the percentage of what?
- 5) Any footnotes that provide additional information to help readers understand and use the data correctly (e.g. definitions) should be placed at the bottom of the table, along with a reference to the source of the data.
- 6) Use a minimum of decimal places and consider rounding numbers where appropriate. Use thousand separators.
- 7) Align the numbers on the decimal point or right-align in the absence of decimal places. Do not centre the numbers in a column, unless they are all of the same magnitude.
- 8) Do not leave any data cells empty. Missing values should be identified as “not available” or “not applicable”. The abbreviation “N/A” can apply to either, so it needs to be defined.
- 9) When producing a series of tables for a publication or a website, you should use the same layout in all tables.

Example of a bad table (not based on real data)

Volunteering by type of organisation

	2006	2007	2008	2009	2010	2011	2012
Youth/Children	27.81	27.92	28.24	31.12	36.82	39.48	39.13
Health/Disability	31.11	33.91	30.41	27.61	24.33	23.71	23.97
Religion	31.47	27.21	23.86	22.11	21.41	19.53	18.78
Sports	n/a	n/a	3.51	3.7	3.11	2.91	2.82
Elderly	9.61	10.96	13.98	15.46	14.33	14.37	15.3
Total	100	100	100	100	100	100	100

What is wrong with the table above?

- we do not know which geographic area the data refers to;

- the data source is not identified;
- the values are centred rather than right-aligned;
- the values should not be displayed with two decimal places (unnecessary information);
- the total values should have the same number of decimal places as the other values;
- the abbreviation “n/a” is not explained;
- the grey shading and the lines of the same size between each row and each column do not help to understand the different data presented in the table;
- the table is unnecessarily spread across the width of the page.

Example of a good table (not based on real data)

Volunteering by type of organisation (in percent)

Scotland, 2006-2012

	2006	2007	2008	2009	2010	2011	2012
Youth/Children	27.8	27.9	28.2	31.1	36.8	39.5	39.1
Health/Disability	31.1	33.9	30.4	27.6	24.3	23.7	24.0
Sports	31.5	27.2	23.9	22.1	21.4	19.5	18.8
Religion	n/a ¹	n/a ¹	3.5	3.7	3.1	2.9	2.8
Elderly	9.6	11.0	14.0	15.5	14.3	14.4	15.3
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0

¹ Data on volunteering for religious groups was not collected until 2008.

Source: ?????, Scotland

How has the table been improved?

- all the information needed to understand the data is provided in the title and subtitle;
- the data source is identified;
- all values are right-aligned and displayed with one decimal place;
- the abbreviation “n/a” is explained in the footnote;
- only the lines that separate the different components of the table (header, data, footnote and source) are displayed and the unhelpful shading has been removed;
- the table is not wider than needed to display all the headings and data.

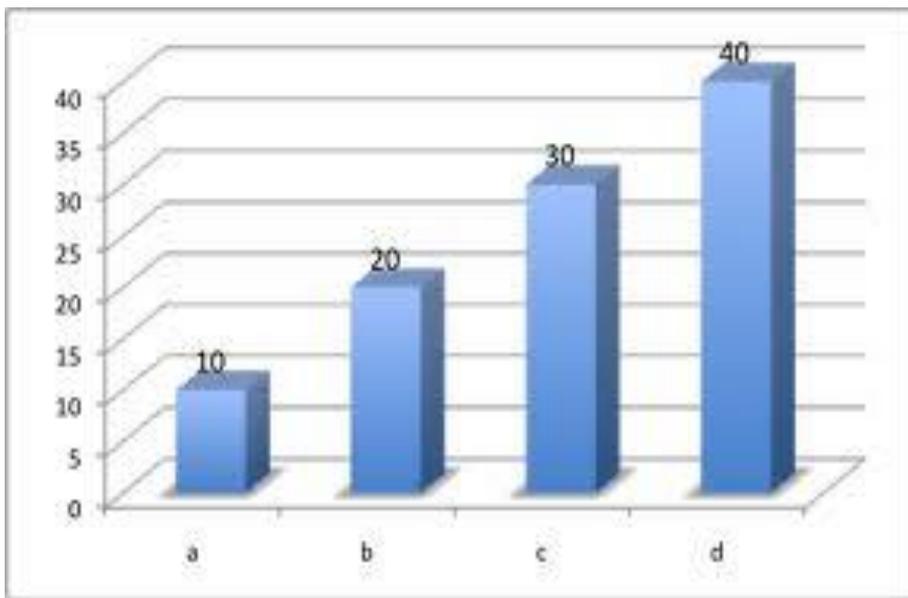
Annex B: Charts

Information can often be better understood when it is presented in a chart. A chart is a very effective visual tool, as it displays data quickly and easily, facilitates comparisons and can reveal trends and relationships within the data.

Checklist for designing a good chart:

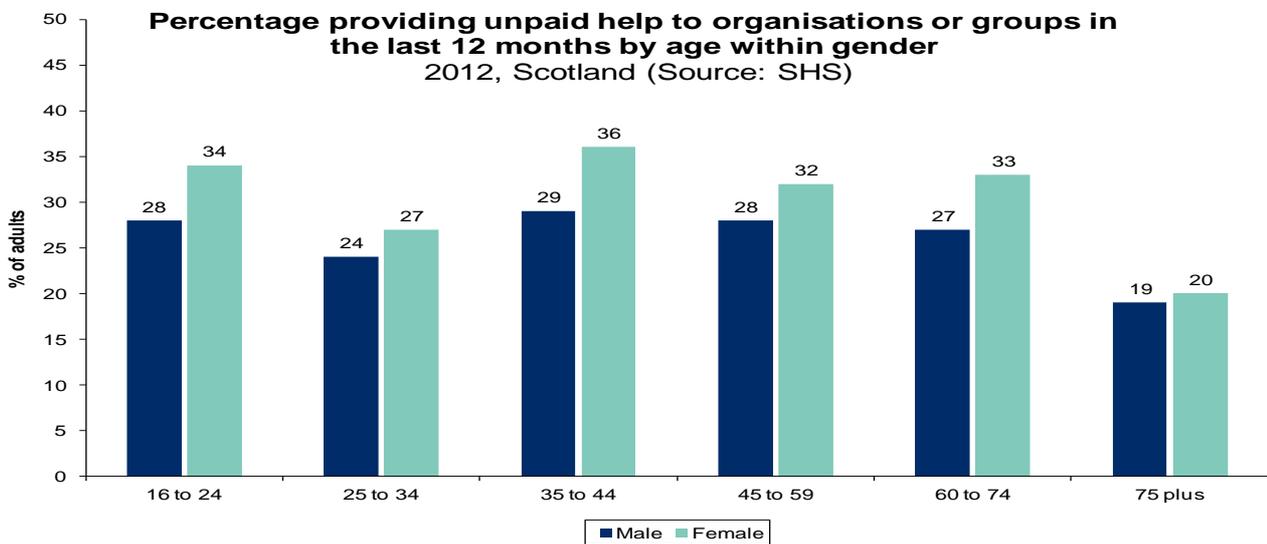
- 1) Decide the most effective way to present your information, i.e. what style of chart is the most appropriate tool to communicate your message.
- 2) Ensure the chart title provides a clear, concise and accurate description of the data. Answer the “what”, “where” and “when” questions. Any relevant metadata (e.g. unit of measurement, time period or geographic area) should be included.
- 3) Any footnotes that provide additional information to help readers understand and use the data correctly (e.g. definitions) should be placed at the bottom of the chart, along with a reference to the source of the data.
- 4) The axis titles should identify the unit of measure of the data (e.g. “in thousands”, “%”, or “age (in years)”). You do not need to include an axis title when the unit of measure is obvious (e.g. “years” for time series).
- 5) Gridlines can be added in bar and line charts to help users read and compare the values of the data.
- 6) The legend and data labels should identify the symbols, patterns or colours used to represent the data in the chart. The legend should not be displayed when only one series of values is represented in the chart. Whenever possible, you should use data labels rather than a legend. Data labels are displayed on or next to the data components (bars, areas, lines) to facilitate their identification and understanding.
- 7) Use lighter lines for axes and gridlines than for data components. Decorative features should not distract the reader’s attention.
- 8) Data components can conflict with each other. The more variables and values you want to display, the more difficult it is to present the data clearly. An effective chart has a clear, visual message. If a chart tries to do too much, it becomes a puzzle that requires too much work to understand.
- 9) You should adjust the scale of the chart to best convey your message and it may not always be suitable to start the scale of your chart at zero, i.e. if all data values are in the 100s, then it may be more appropriate to start your scale at 100.
- 10) Be accurate and use the correct dimensions to reflect the differences between values in a chart, i.e. if one value is double another, then it should appear twice the size on a chart.

Example of a bad chart



What is wrong with the chart above?

Example of a good chart



What is good about the chart above?