



Trust for London

Tackling poverty and inequality

Charts & graphs in Excel



What we'll cover...

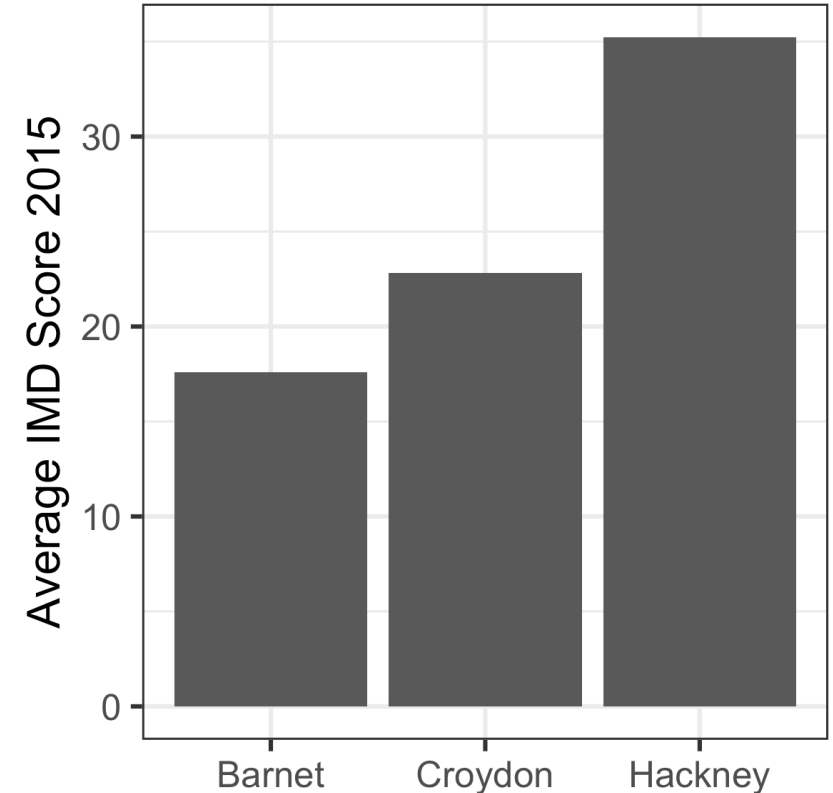
- Choosing the right chart or graph
- Hands on with Excel
 - Column & Bar charts
 - Pie charts
 - Line charts
 - Pivot charts
- Best practice in design
- Other chart & tool options ([see further training options](#)
[Datawrapper & Canva here](#))

Charts & graphs to compare values

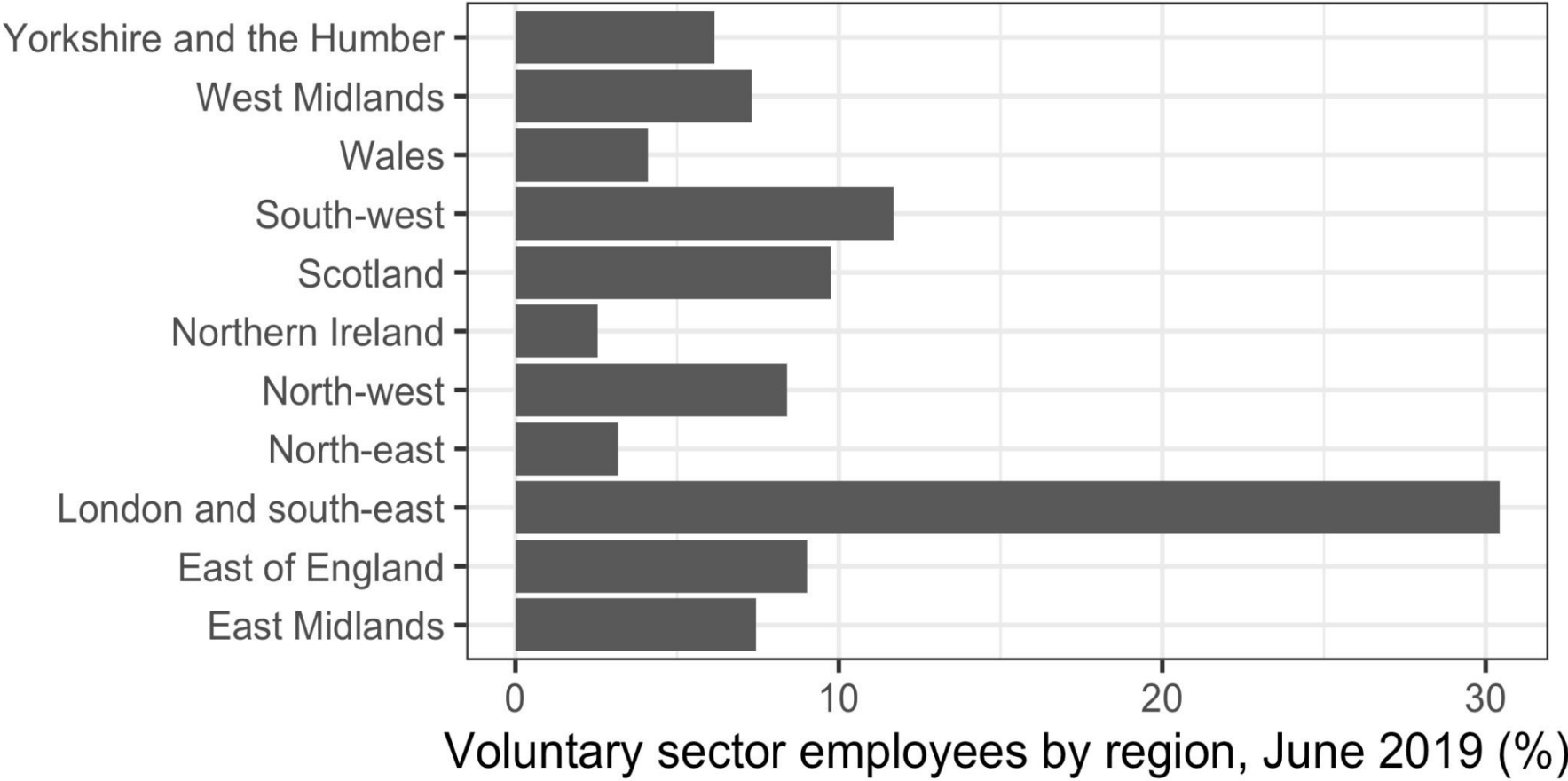


Bar charts

- **What is it?** The value for each entity in a category is shown as a bar, where the length corresponds to the value
- **Input data:** One numeric variable for 1 or more categories
- **Why use it?** To compare amounts

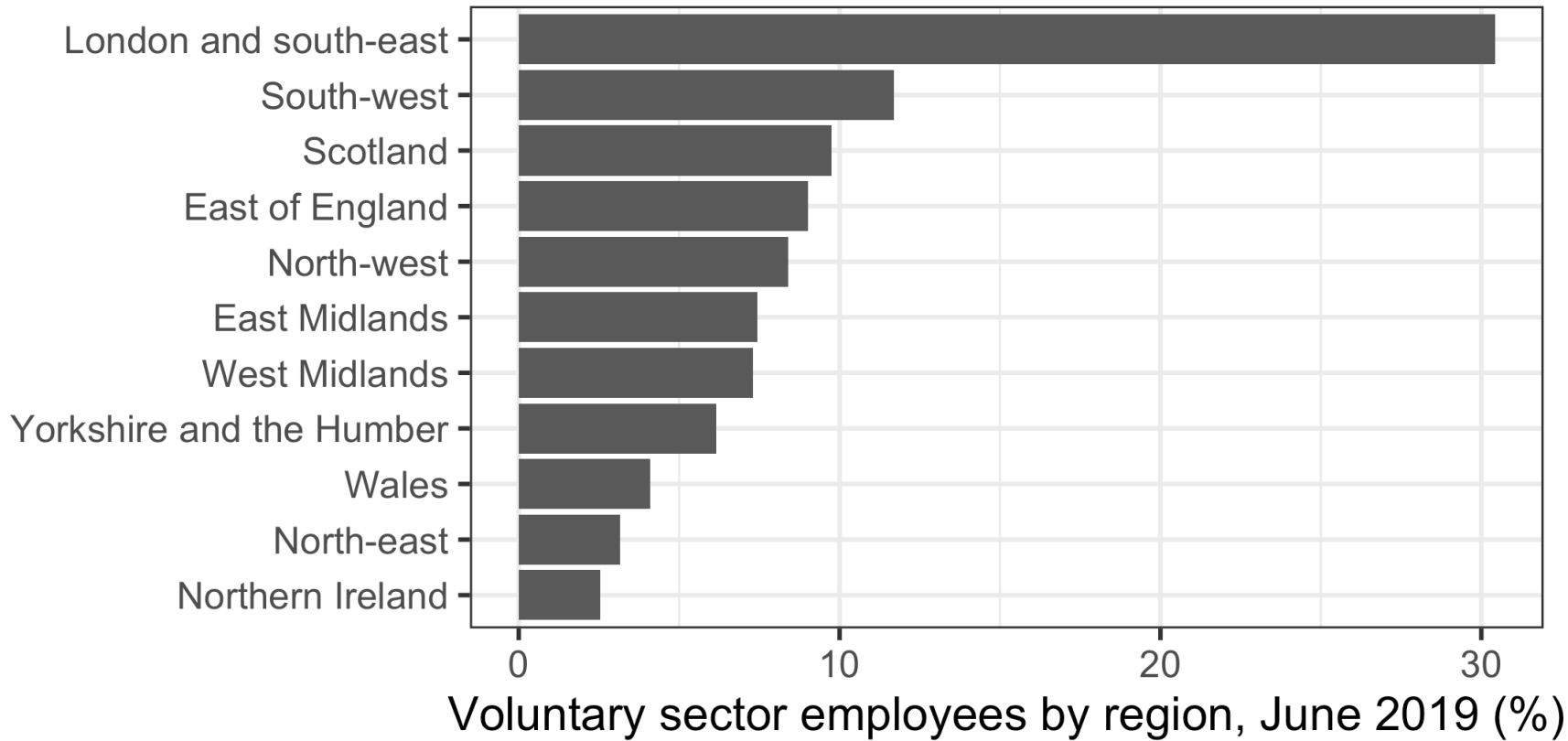


Bar chart tips



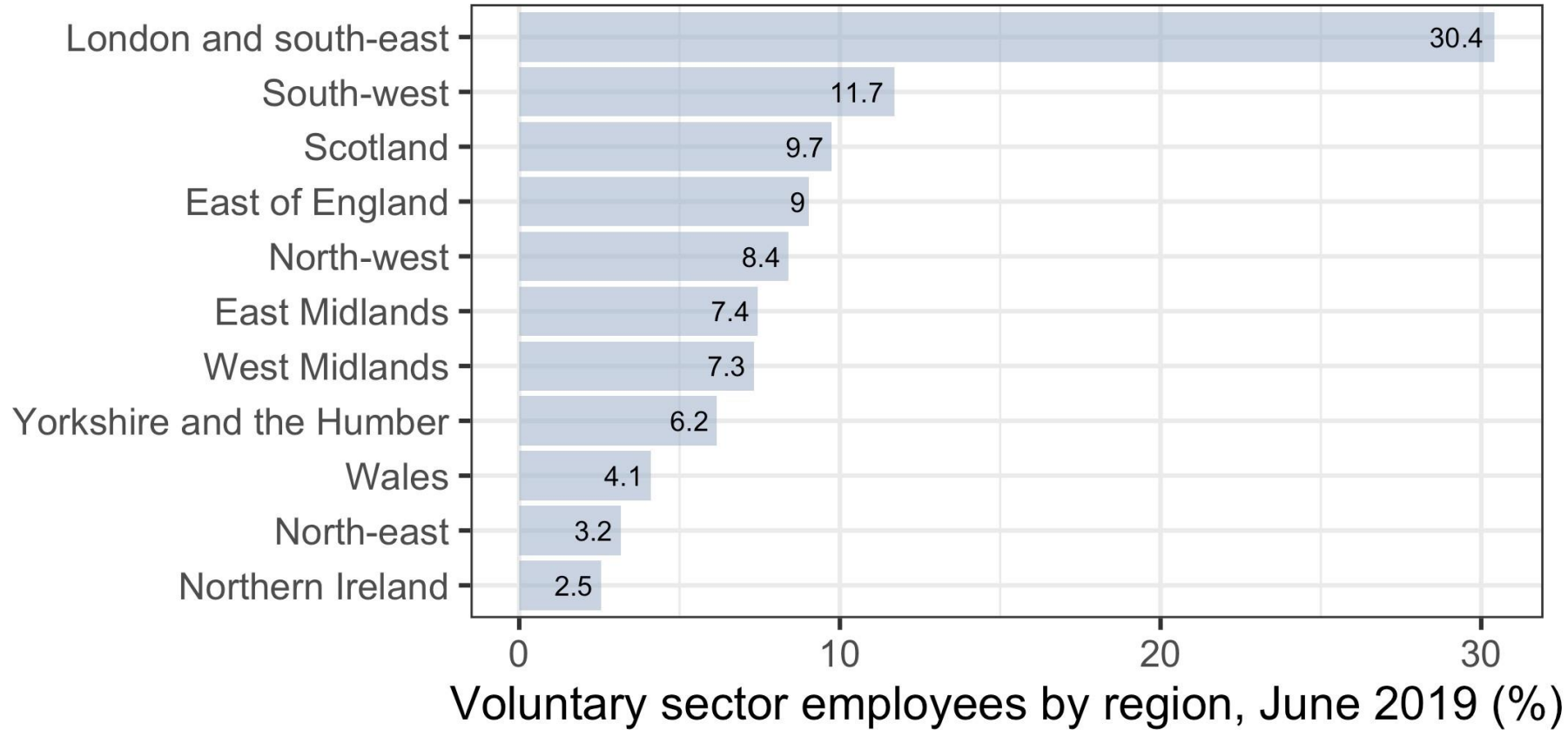
Flip charts with long labels sideways

Bar chart tips



Reorder to enable comparison (only if there is no natural order)

Bar chart tips



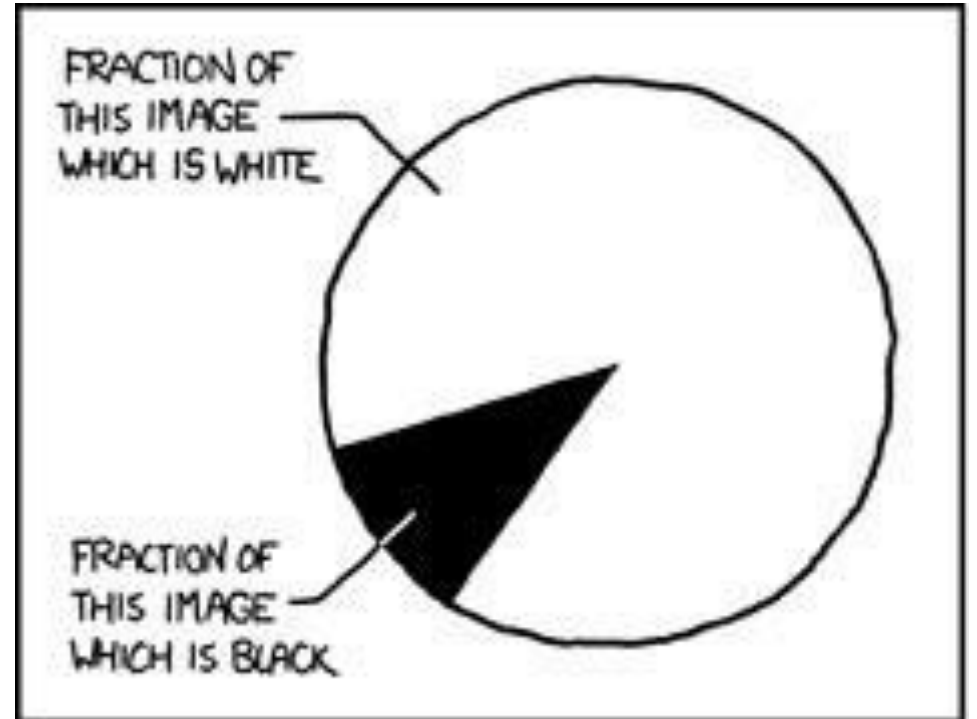
Add value to bar if precise value is important

Charts & graphs to visualise composition



Pie charts and donut charts

- **What is it?**
 - A circle divided into sections where each piece of the pie represents the proportion
 - Donut chart uses ring vs circle
- **Input data:** Proportion/Percentage for each value in a category
- **Why use it?** To compare proportions

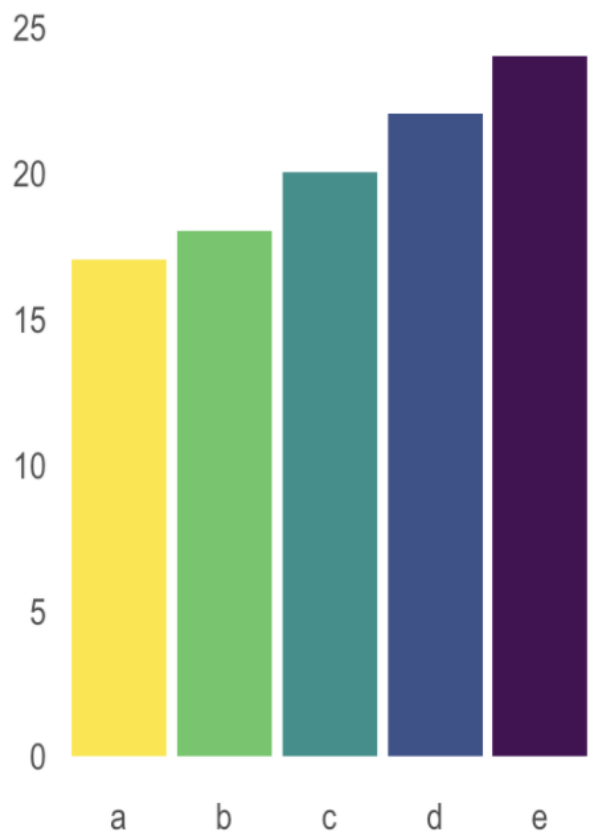


Pie charts – what does this tell you?



- Which slice is the biggest?
- Can you order these by value?

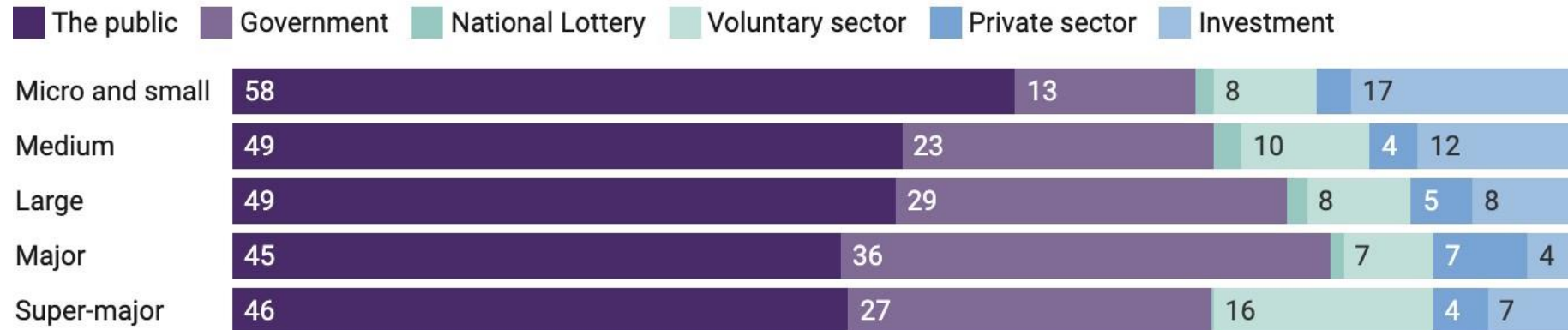
Pie chart alternatives: bar charts



Pie chart alternatives: stacked bar charts

Micro and small organisations receive a larger proportion of income from the public than other organisations

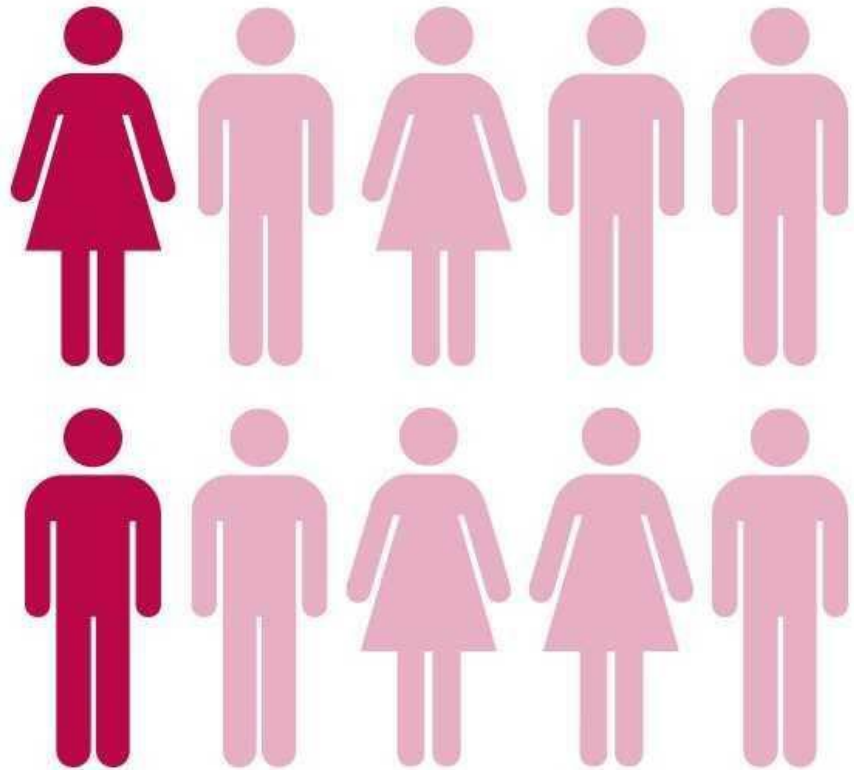
Breakdown of income by source and size of organisation, 2017/18 (%)



Source: NCVO, Charity Commission • [Get the data](#) • Created with [Datawrapper](#)



Pie chart alternatives: pictorial fraction chart



Only

19%



are aware that
people living with HIV
and on effective
HIV treatment
can't pass it on.

Reference: YouGov survey of 2,075 GN adults, June 2019



Charts & graphs to visualise timelines

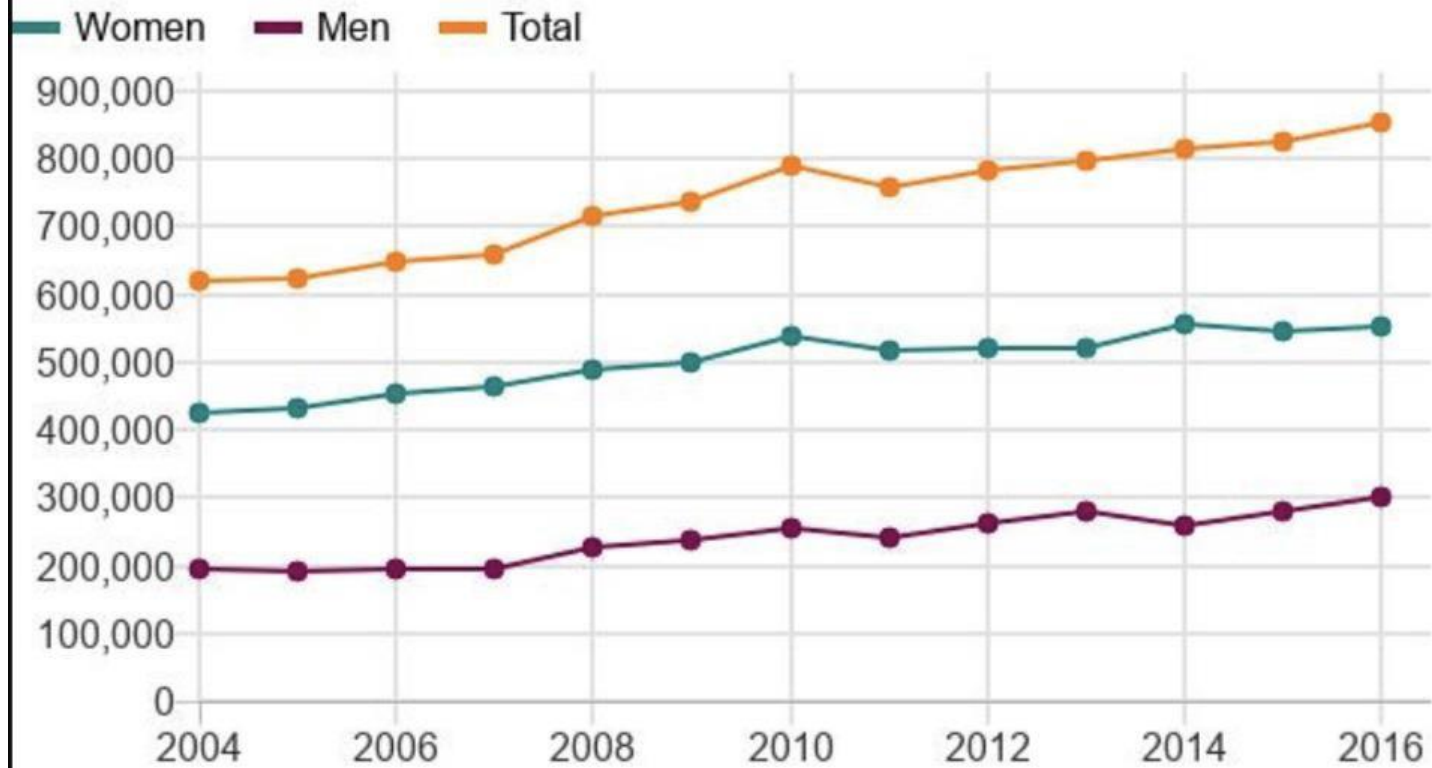


Line charts

- Shows how one factor (variable) changes e.g. over time
- Input data: Two numeric variables
- Why use it?
 - To understand relationships between two factors

Line charts

The number of people employed in the voluntary sector has risen steadily



Source: NCVO/Labour Force Survey

BBC

Other chart options



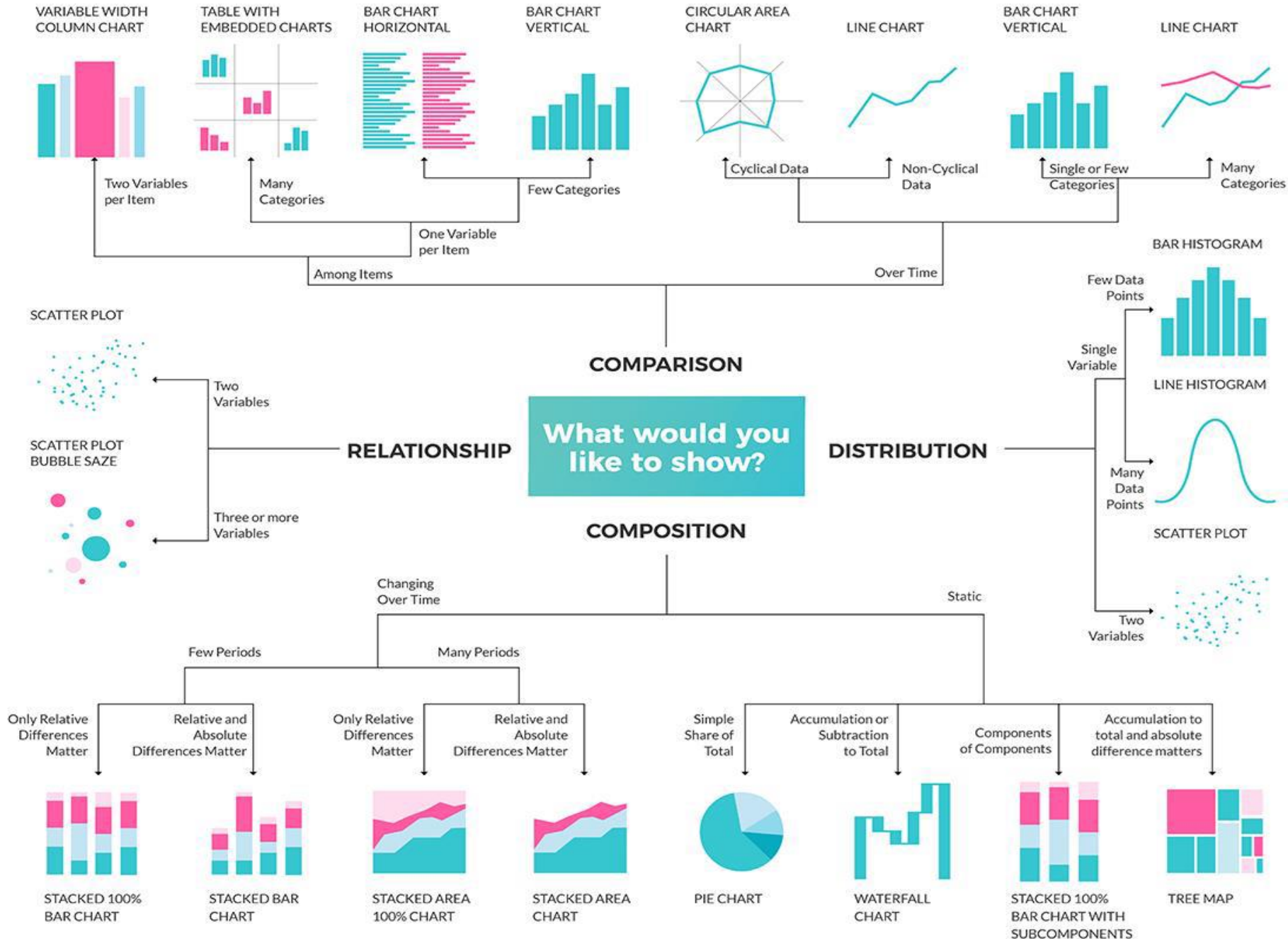
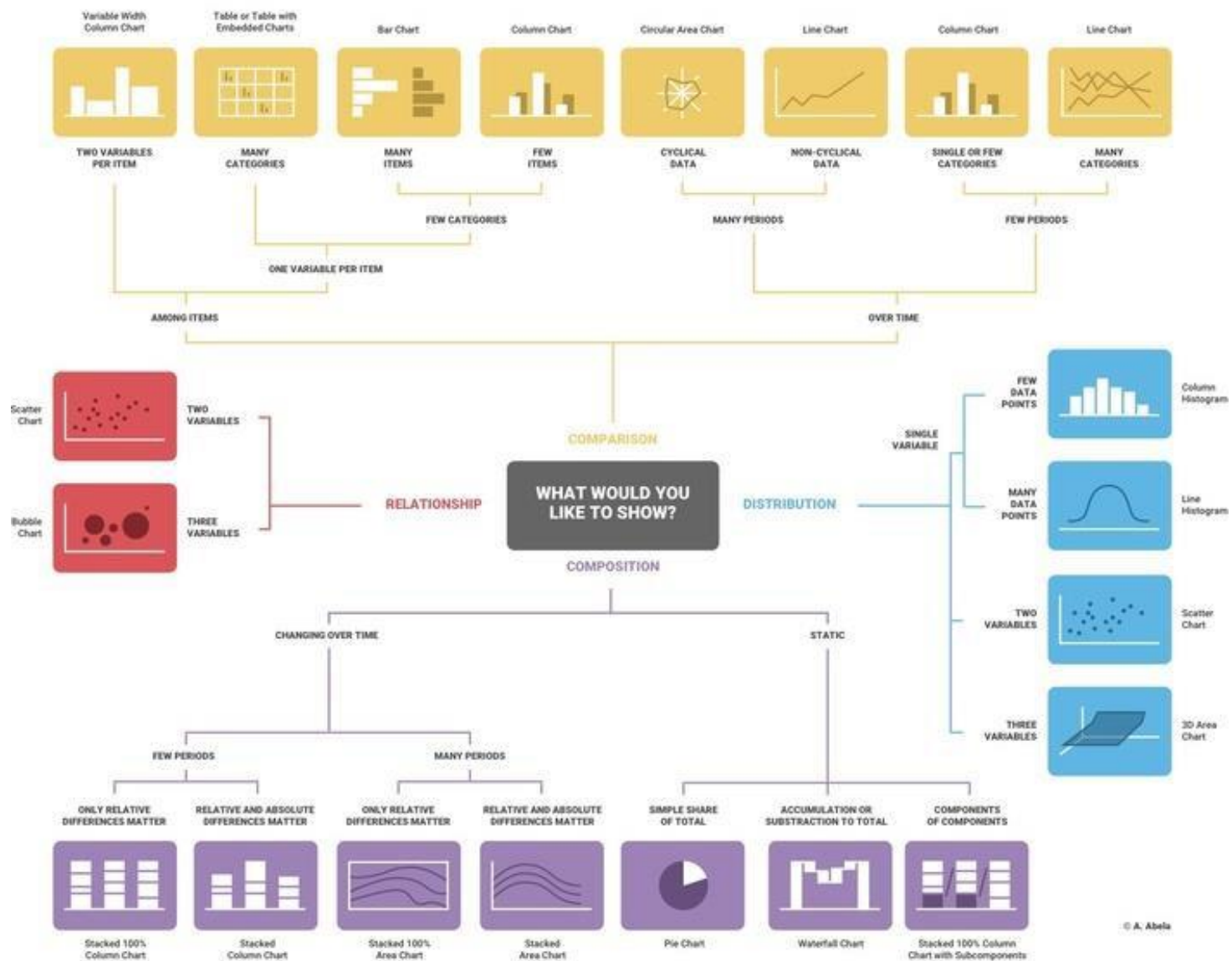


CHART SUGGESTIONS - A THOUGHT-STARTER

[Infogram resource](#)





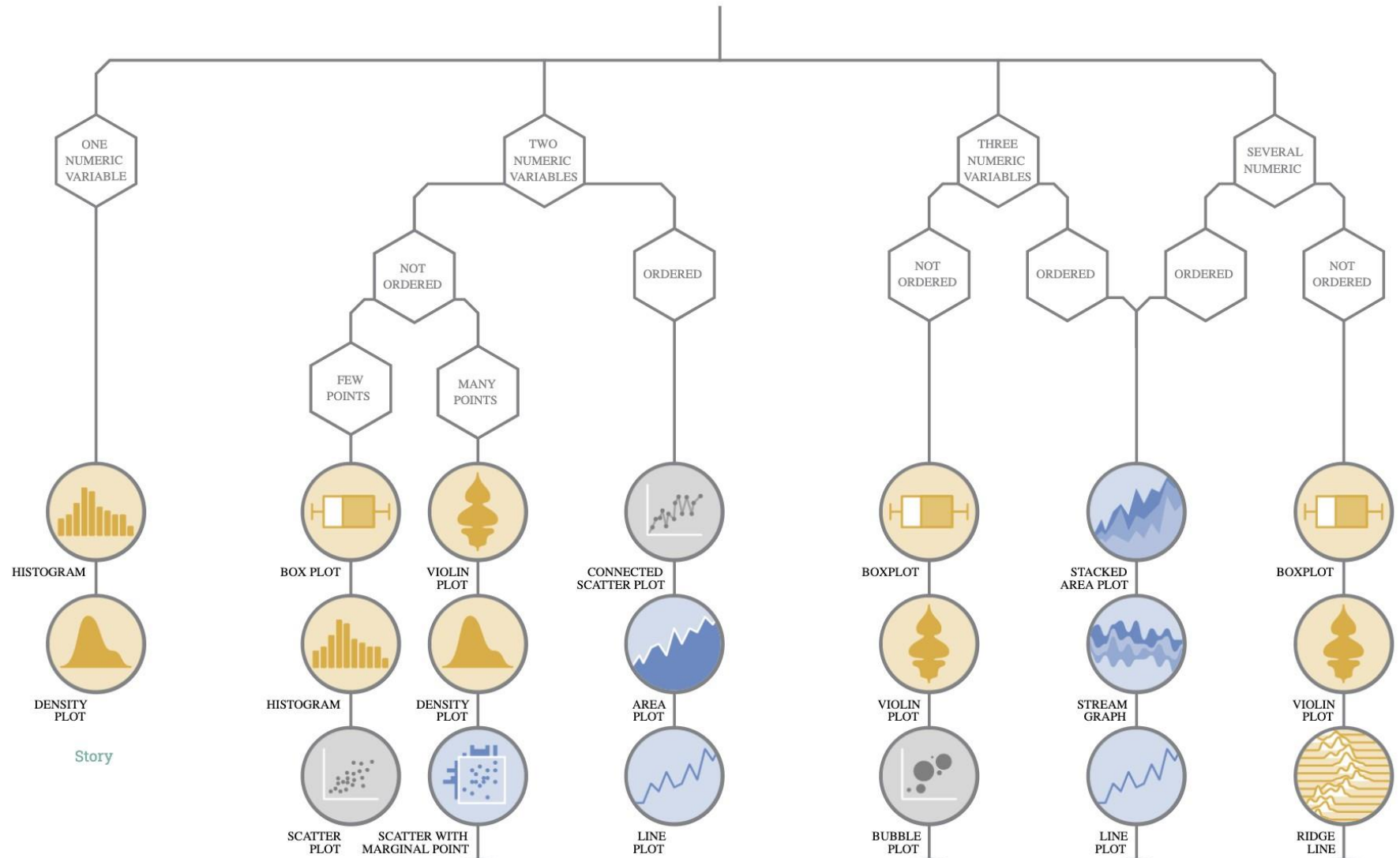
from Data to Viz

From Data
to Viz

What kind of data do you have? Pick the main type using the buttons below.

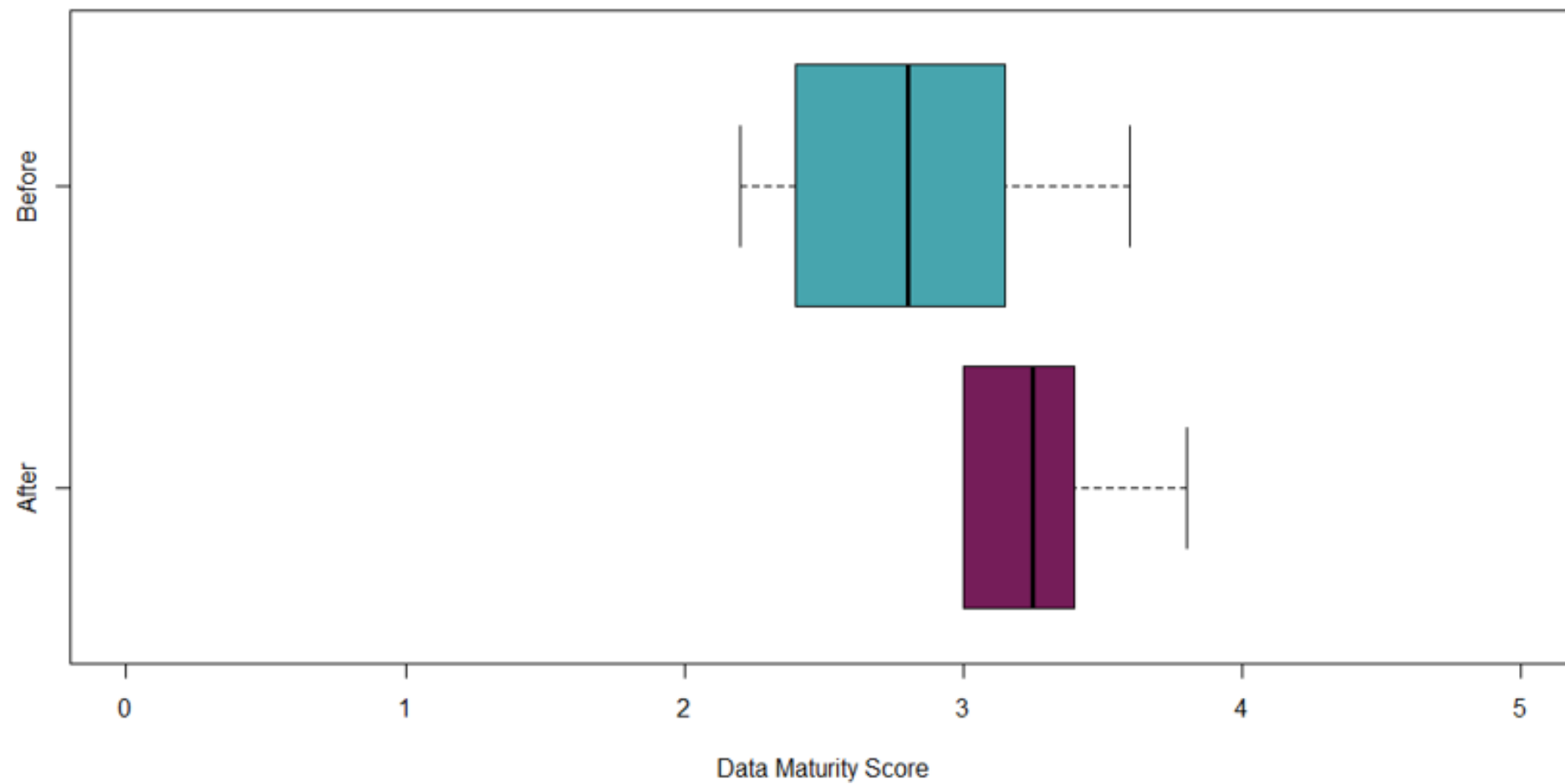
Then let the decision tree guide you toward your graphic possibilities.

- Numeric
- Categoric
- Num & Cat
- Maps
- Network
- Time series

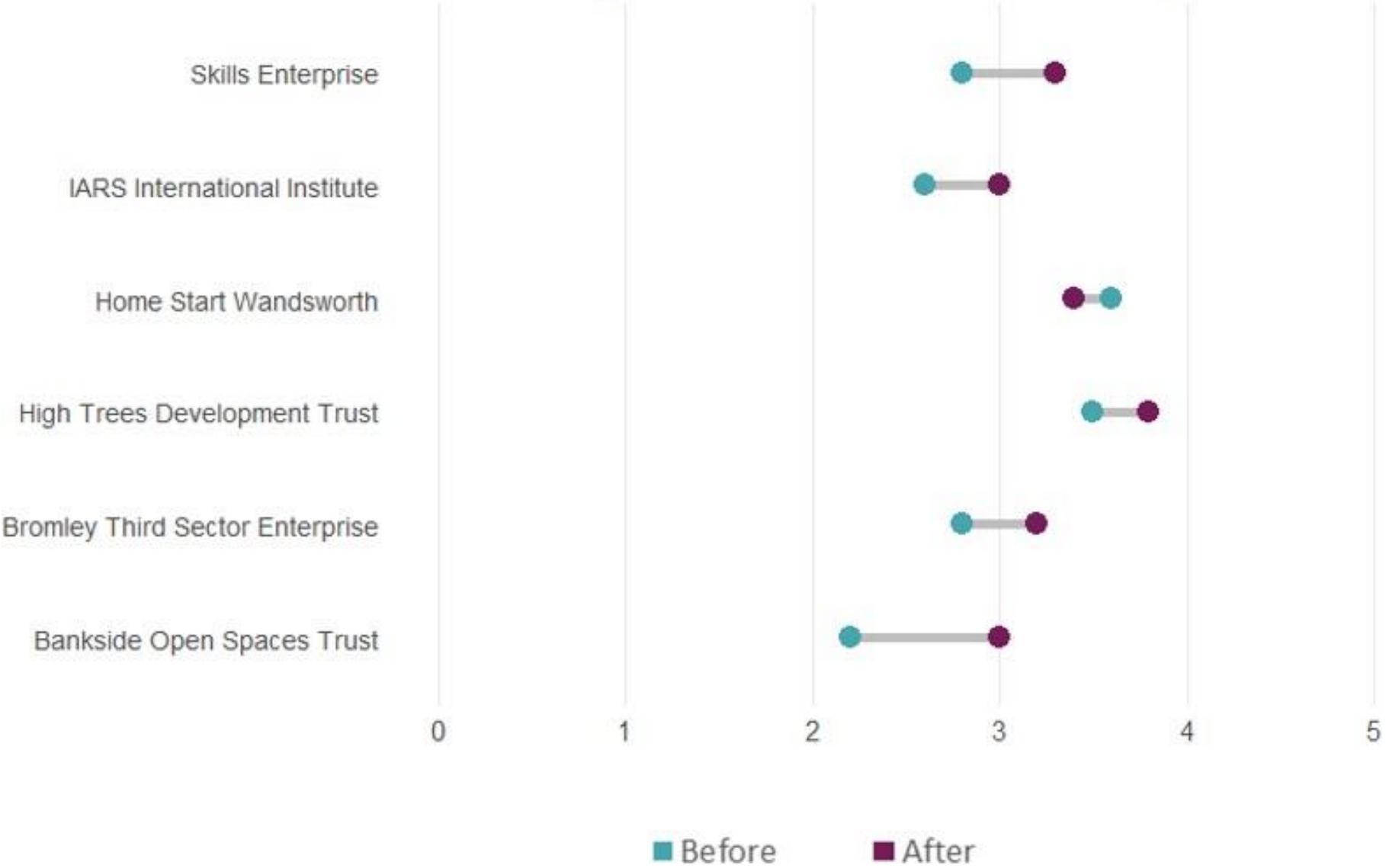


Story

Range of Data Maturity for cohort before and after Datawise



Change in Datawise Cohort Data Maturity Scores



Bankside Open Spaces Trust
Change in Data Maturity Theme Scores



Bromley Third Sector Enterprise
Change in Data Maturity Theme Scores



High Trees Community Development Trust
Change in Data Maturity Theme Scores



Home Start Wandsworth
Change in Data Maturity Theme Scores



IARS International Institute
Change in Data Maturity Theme Scores



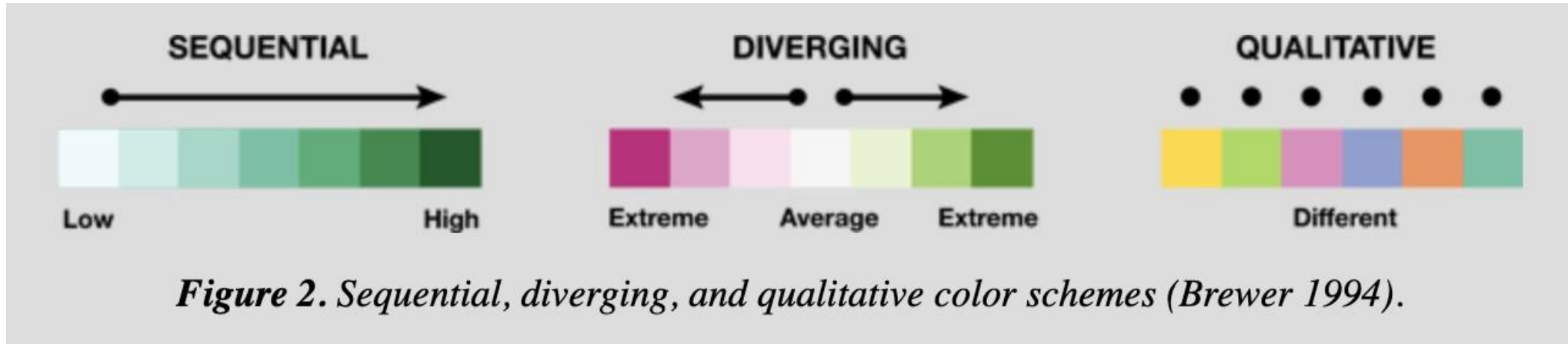
Skills Enterprise
Change in Data Maturity Theme Scores



Best practice checklist

- Does every part of the chart have a purpose?
- What can you remove?
- Do you need additional text for storytelling?
- Consider colours
 - Use consistently
 - Use to highlight important information
 - Consider accessibility

Use colour scales appropriately



<https://cartographicperspectives.org/index.php/journal/article/view/1538/1819>

Design for colour-vision deficiency

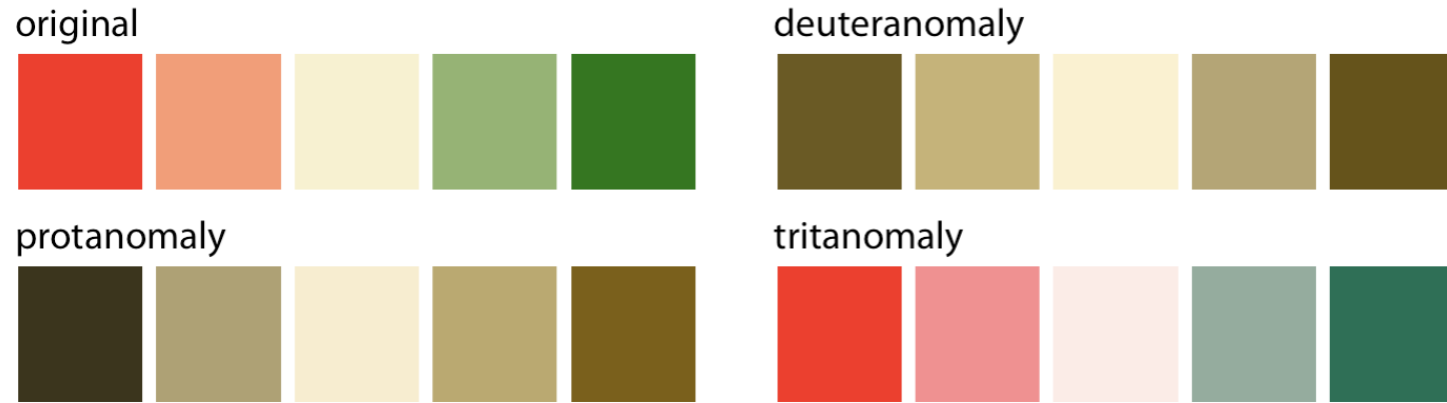


Figure 19.7: A red-green contrast becomes indistinguishable under red-green cvd (deuteranomaly or protanomaly).



Figure 19.8: A blue-green contrast becomes indistinguishable under blue-yellow cvd (tritanomaly).

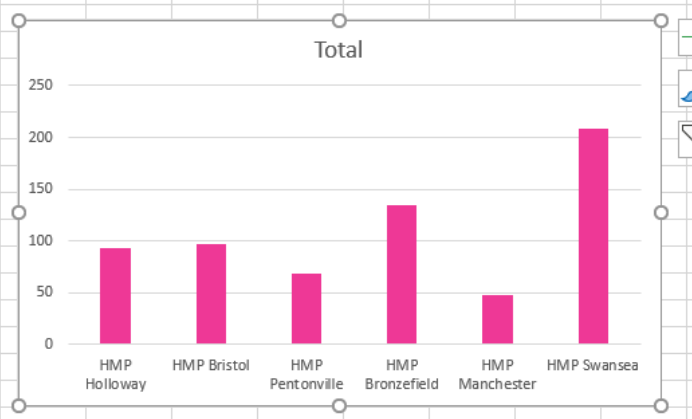
Add Alt Text to describe visualisations

Dataset for charts and graphs participants

File Home Insert Page Layout Formulas Data Review View Help Acrobat Chart Design **Format** Comments Share

Chart Area Format Selection Reset to Match Style Current Selection Insert Shapes Change Shape Shape Styles WordArt Styles Accessibility Arrange Size

Month	HMP Holloway	HMP Bristol	HMP Pentonville	HMP Bronzefield	HMP Manchester	HMP Swansea
Total	93	97	68	134	48	208



Alt Text

How would you describe this object and its context to someone who is blind or low vision?

- The subject(s) in detail
- The setting
- The actions or interactions
- Other relevant information

(1-2 detailed sentences recommended)

Mark as decorative

Beginners tools





Good for:

- Quick basic charts (bar charts, scattercharts)
- Can make dashboards
- Using data you already have in Excel

Limitations:

- Data has to be compiled/formatted, ready for visualisation
- Some limits to types of charts



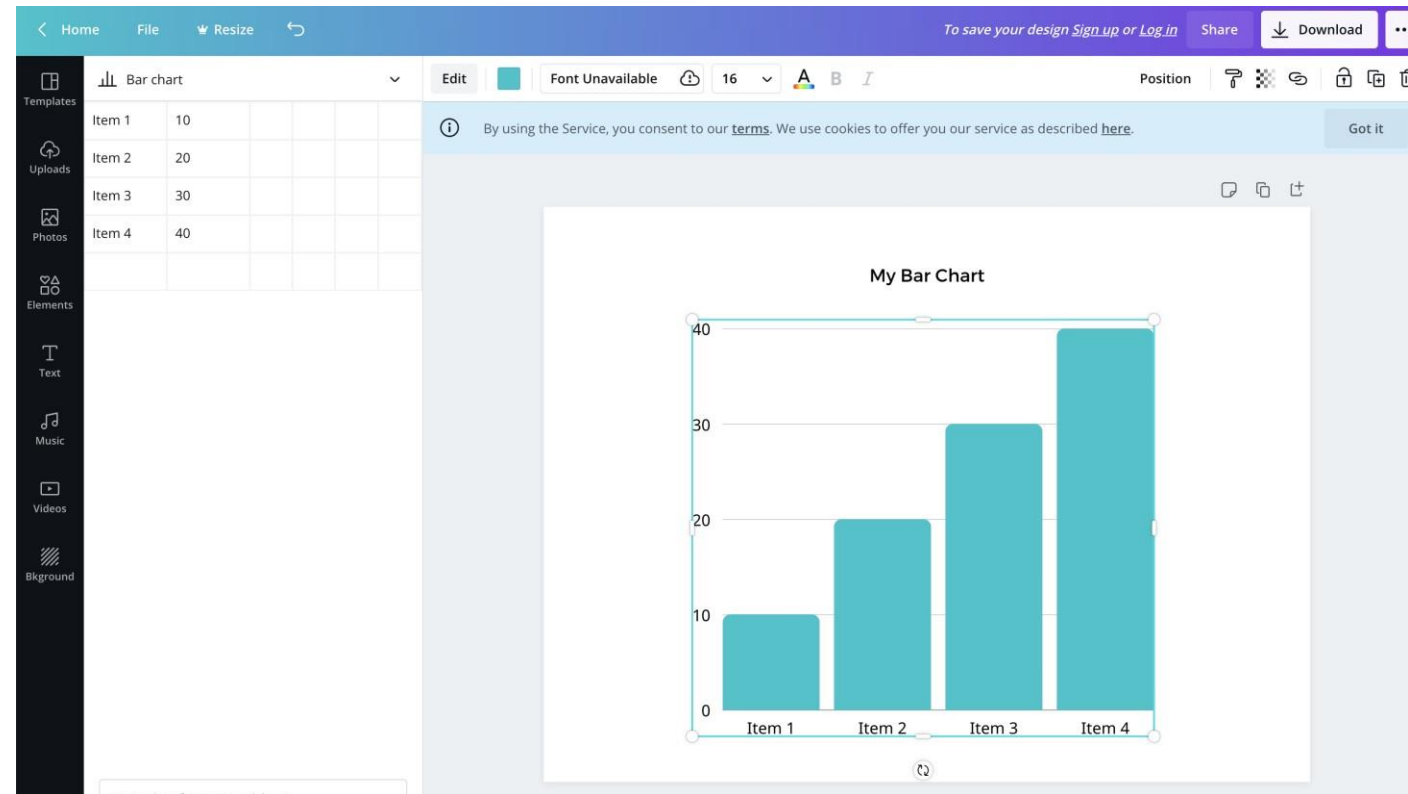
Good for:

- Helps you choose your graph
- Simple charts/infographics
- Drag-and-drop

Limitations:

- Data pasted from spreadsheet

Cost: Free for non-profits



<https://www.canva.com/graphs/>

WHAT ARE DIGITALLY EXCLUDED PEOPLE MOSTLY MISSING OUT ON?

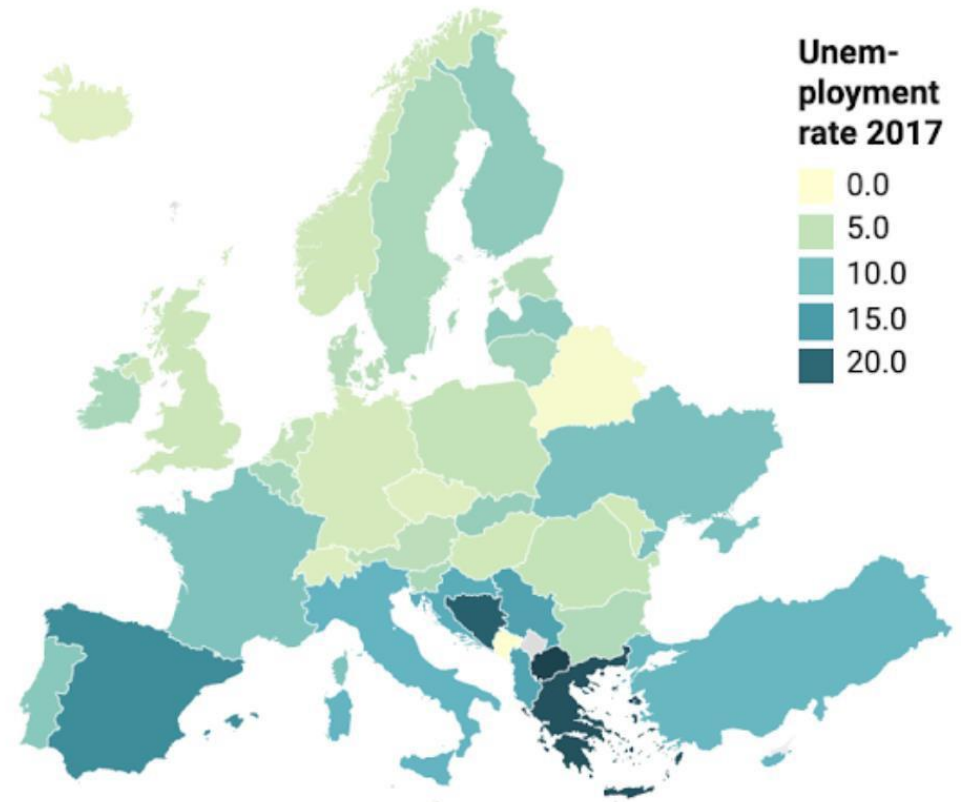
Digital Exclusion Survey Jan 2021



Datawrapper

- Good for:
 - Quick charts, maps, and tables
 - Interactive
 - Attractive default formats
- Limitations:
 - Limited formatting options with free version
- Cost: Free option

The unemployment rate is higher in South Europe than in North Europe



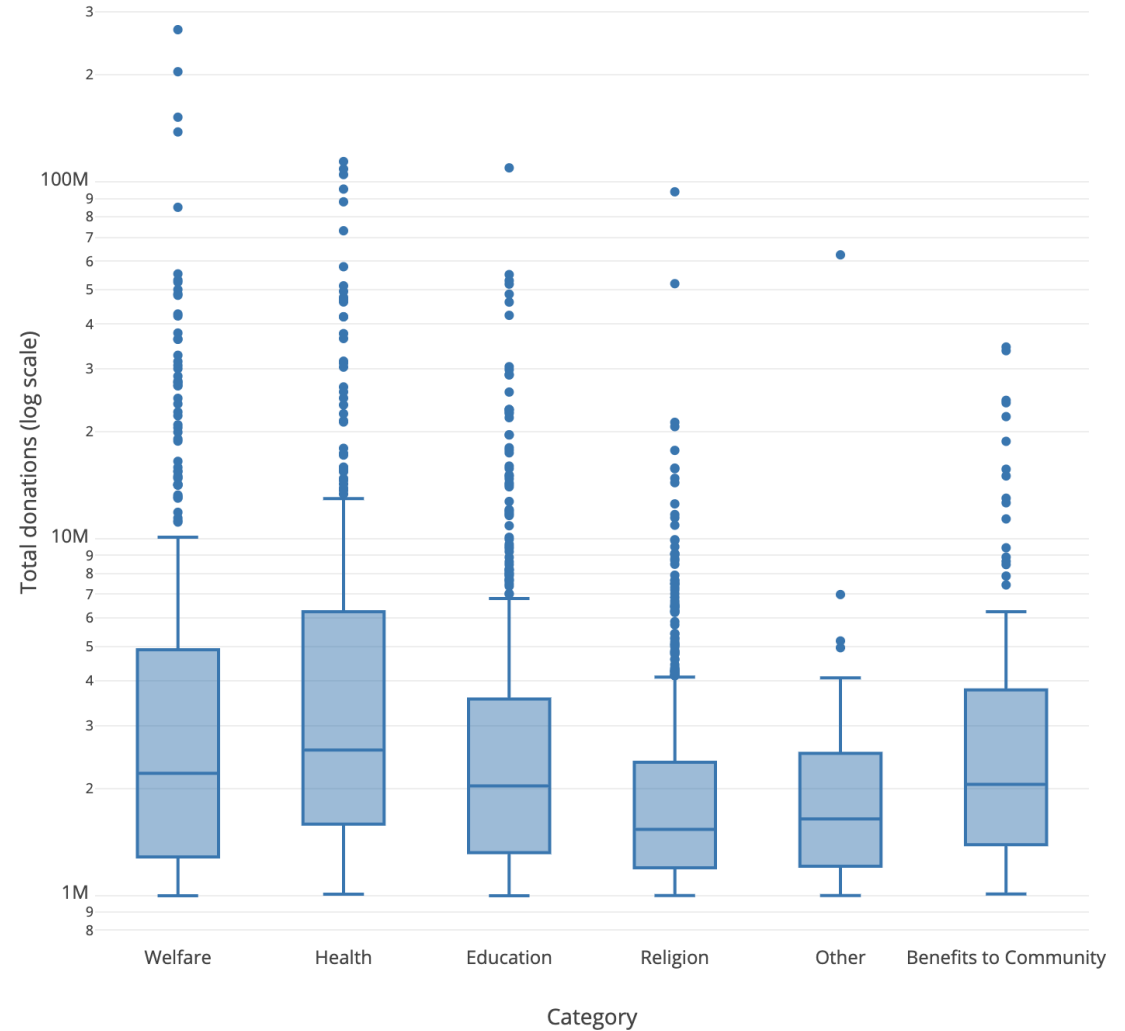
Map: Lisa • Source: IMF • Get the data • Created with Datawrapper

<https://www.datawrapper.de/>



- Good for:
 - Interactive charts
 - Embedding in websites
 - Attractive default formats
- Limitations:
 - Paid option is very expensive
- Cost: Free option, but limited to public charts

Canadian Charity Snapshot (donations of more than \$1M)

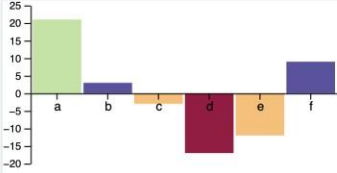


RAWGraphs

- Good for:
 - Lots of chart options
 - Can import data
 - Decent formatting options
- Limitations:
 - No maps or interactive figures
- Cost: Free

2. Choose a chart

Show All charts ▾



Bar chart
It displays a categorical dimension and related amounts. Each bar represents a category, width is proportional to the quantitative dimension.

[Code](#) [Tutorial](#)

Chart Type	Applications
Alluvial Diagram	Correlations, proportions
Arc Diagram	Networks
Bar chart	Correlations
Multi-set bar chart	Correlations, proportions
Stacked bar chart	Correlations, proportions
Beeswarm plot	Distributions, time series, proportions
Box plot	Distributions
Bubble chart	Correlations, proportions
Bumpchart	Correlations, proportions
Circle Packing	Hierarchies, proportions
Circular dendrogram	Hierarchies, proportions
Contour plot	Correlation, density
Convex hull	Correlations, proportions
Linear dendrogram	Hierarchies, proportions
Hexagonal binning	Correlation, density
Line chart	Time series, correlations
Matrix Plot	Correlations, time series, proportions
Radar Chart	Correlations
Sankey Diagram	Flows, networks
Streamgraph (area chart)	Correlations, proportions
Sunburst diagram	Hierarchies, proportions
Treemap	Hierarchies, proportions
Violin plot	Distributions



Thank you for listening

KATE WHITE

info@superhighways.org.uk

@SuperhighwaysUK

#DatawiseLondon

