

CHEAT SHEET ON CHART CONVENTIONS

Pie charts

- Use a reasonable number of slices
- Aggregate minor categories into one 'Other' slice
- Order slices by size from largest to smallest
- Place the 'Other' slice at the end of the sequence, regardless of the order
- Position the first and largest slice against the upper vertical radius
- Arrange slices in a clockwise fashion
- Vary colors only if the colors are encoding data
- Don't do 3d

Bar charts

- Start value axis at zero

Scatter plots

- Place explanatory variable on horizontal axis
- Place outcome variable on vertical axis
- If adding a regression line, assign an outcome variable

Time-series plots

- Plot time on the horizontal axis
- Time runs left to right
- If time intervals are uneven, tick marks should be uneven in the same way

Color encoding

- Limit the total number of colors
- Color difference should reflect data difference
- Use certain color pairs with care
- Make charts friendly to color-blind readers
- Conventions on guides

Axes

- Use canonical directions (i.e., larger values to the right of smaller values)
- Time goes on the horizontal axis
- Place an outcome variable on the vertical axis
- Choose limits to remove excessive white space
- Tick marks should fall on easily interpretable increments and values

Legends

- Use direct labels if feasible
- Colors in the legend should correspond one-to-one to the colors on the chart
- Colors in the legend should be presented in the same order as they appear on the chart
- Place legend on top below the title 5. Embed legend into chart titles or subtitles

Order

- Place values in the natural order when it is available
- Avoid the default alphabetical order unless it is justified by the context
- Retain the same order across all plots in a panel of charts

Annotation

- Use informative chart titles
- Explain all acronyms and jargon
- Include the source of data in a footer
- Label only key items, not all items

Additional resources

The following books and blogs are great resources on the conventions and rules of data visualization:

- [Good Charts: The HBR Guide to Making Smarter, More Persuasive Data Visualizations](#)
- [How Charts Lie: Getting smarter about visual information](#)
- [The Elements of Graphing Data. Revised Edition](#)
- [Information Dashboard Design: Displaying data for at-a-glance monitoring](#)
- [Junk Charts](#)
- [Statistical Modeling, causal inference, and social science](#)
- [EagerEyes](#)
- [Elements of Graph Design](#)
- [Visualization Analysis & Design](#)
- [Creating More Effective Graphs](#)
- [Visual Revelations: Graphical Tales of Fate and Deception from Napoleon Bonaparte to Ross Perot](#)
- [The Wall Street Journal Guide to Information Graphics: The Dos and Don'ts of Presenting Data, Facts and Figures](#)