# Assignment 3: Data Visualization Ethics

## Data visualization: What Americans think about abortion?

Graphical user interface

Description automatically generated

Source: Komissarova, A. (2021). What Americans think about abortion? Tableau Public. https://public.tableau.com/app/profile/anastasia.komissarova/viz/WhatamericansthingaboutabortionMOM/Dashboard1

Komissarova’s (2021) data visualization “What Americans think about abortion?” is accessible in some ways and less accessible in others. The inclusion of a clearly labelled legend and data labels on the graphs, such as the percentage value for each view on the bar graph, help make the visualizations easier to understand (Zogheib, 2023b). However, the small font size and the use of a serif typeface make the visualization less accessible (Zogheib, 2023b).

The data visualization includes a reputable source for the data, a Gallup poll, which is important for transparency and reproducibility (Zogheib, 2023a), and the data can be verified on Gallup’s website (Brenan, 2021). If you hover the mouse over the x-axis of the bar graph, a list of options appears in a pop-up, including an option to view the data in a table; this enables readers to use the data and reproduce the graph if they wished. In addition, there is alt-text for each of the options, which helps with accessibility. However, the option icons and the graphs in general are small, which may make it more difficult for people with mobility issues to hover the mouse over the right areas to access those icons and other interactive features.

Gallup states on its website: “Gallup also weights its final samples to match the U.S. population according to gender, age, race, Hispanic ethnicity, education, region, population density, and phone status.” This suggests that effort was made to make the data equitable.

The data visualization can be improved by increasing the font size, changing the typeface to one that is sans serif and increasing the size of the icons on the bar graph’s x-axis. There should also be instructions explaining how to access the interactive features by hovering your mouse over areas of the graph, as it is not apparent.

## Data Visualization: Energy Consumption by Country 1969 – 2018

Chart

Description automatically generated with medium confidence

Source: Moore, B. #TheSDGVizProject - Goal 7: Primary Energy Consumption. Tableau Public. https://public.tableau.com/app/profile/brian.moore7221/viz/TheSDGVizProject-Goal7PrimaryEnergyConsumption/EnergyConsumption

Moore’s (2020) “Energy Consumption by Country 1969-2018” includes a legend at the top that shows data from the most recent 10-year period, and the legend text has a readable font size and sans serif typeface, all contributing to the visualization’s accessibility (Zogheib, 2023b). However, the font size of the introductory text is very small and the visualization does not include alt text.

The visualization also somewhat relies on the ability to see the colour of the text label for each energy source at the top as corresponding to a colour-filled area on the graphs. The colours used are not overly bright and have good contrast, making them accessible for those who can view the entire range of colours. However, when looked at in grey scale (pictured below), it is difficult to differentiate between text labels based on colour, making it more difficult for those with colour blindness to interpret the graphs (Zogheib, 2023b). Clicking on an energy source only shows the area on each graph corresponding to that source, which helps offset this issue to an extent.

Diagram

Description automatically generated with medium confidence

Generated from Coblis - Color Blindess Simulator (https://www.color-blindness.com/coblis-color-blindness-simulator/)

The source, Our World in Data, is also listed along with a link to the research study page, which further tells readers where to download the data. Hence, the visualization is reproducible. In terms of being equitable, the visualization includes 64 countries and appears to have a good representation of different geographic locations and cultures around the world.

One suggestion to improve accessibility is to use patterns along with colour to differentiate between areas on the graphs, with corresponding boxes added to the legend to make the visualization more accessible to those who are colour blind (Zogheib, 2023b). Another suggestion is to increase the font size of the introductory text and add alt text to the labels and graphs.

## References

Brenan, M. (2021, June 9). *Record-high 47% in U.S. think abortion is morally acceptable*. Gallup. <https://news.gallup.com/poll/350756/record-high-think-abortion-morally-acceptable.aspx>

Gallup. (n.d.). *How does the Gallup Poll Social Series work? Long-term U.S. trends on social, economic, and political topics*. <https://www.gallup.com/175307/gallup-poll-social-series-methodology.aspx>

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Zogheib, C. (2023a). *First steps: reproducible data visualization*. Data Visualization [PowerPoint presentation]. Toronto: Data Sciences Institute, University of Toronto.

Zogheib, C. (2023b). *Visualization with purpose: accessible data visualization*. Data Visualization [PowerPoint presentation]. Toronto: Data Sciences Institute, University of Toronto.