

Assignment A2.2: Life Expectancy at Birth

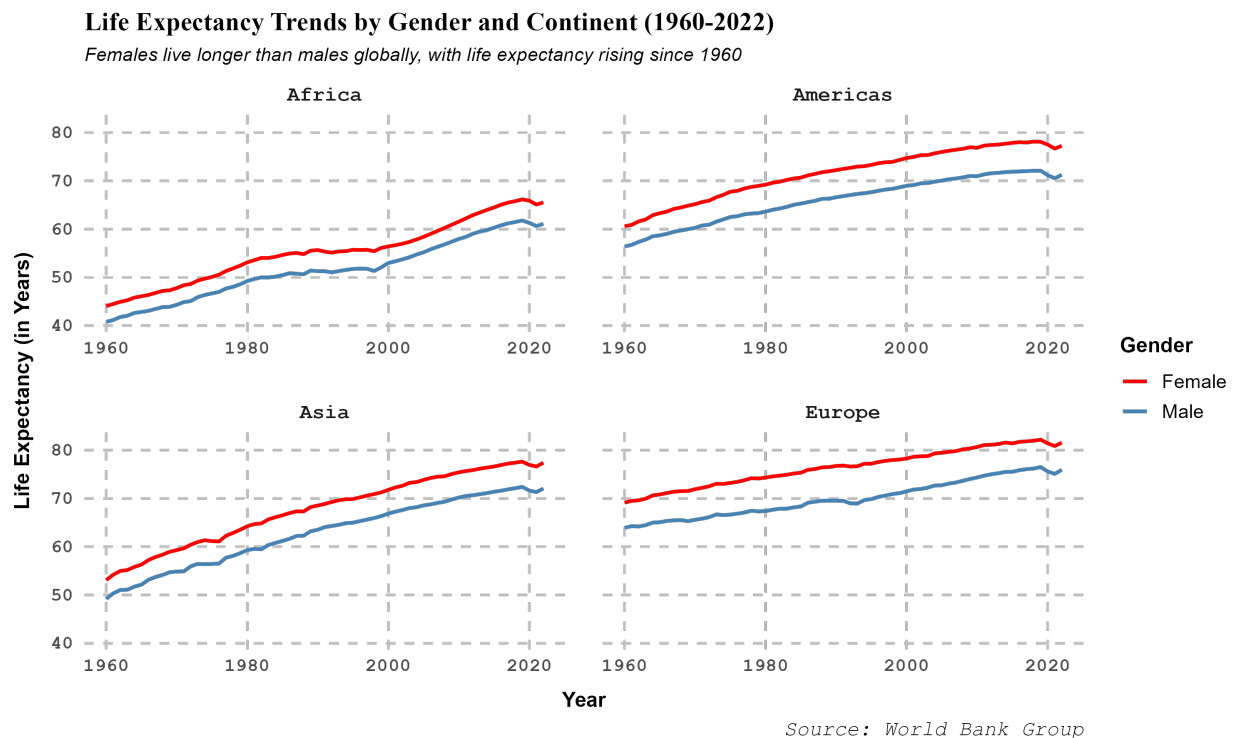
MBAN2 Team7

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Ethical Visualization (Blue Team)



Write Up for the Ethical Visualization (Blue Team):

This is an ethical and clear representation of the life expectancy change for males and females at birth in Africa, Americas, Asia, and Europe from 1960 to 2022. It shows clarity and transparency and presents unbiased information by using faceted line charts, which illustrate yearly averages to enable accurate comparisons between continents. All available data points from the World Bank Group were included, with methods like imputing missing values with medians, dropping irrelevant columns, renaming variables, and merging both gender datasets with the 'countrycode' package to group countries into respective continents. The source (World Bank Group) ensures credibility and transparency, making the visualization reliable. The line chart format is useful in projecting long-term trends, with males as steel blue lines and females as red lines, chosen for being traditionally distinguishable, without bias. The uniform y-axis scale (40–80

years) across all facets makes fair comparisons and prevents exaggeration should scales differ. X-axis breaks at every two decades (1960, 1980, etc.) to maintain clarity without clutter, and the dashed gray grid lines provide a subtle structure. A minimal theme with serif fonts for titles and 11-point mono fonts for axes gives visual balance and focus on the data.

This visualization follows the CRAP principles:

- **Contrast:** Steel blue and red lines contrast with the white background, and a black title and labels for readability.
- **Repetition:** Consistent dashed gray grid lines, consistent font sizes, and axis labels give visual appeal.
- **Alignment:** The right-aligned legend, center-aligned title and subtitle, and reasonably spaced axis and caption labels promote clarity and avoid confusion.
- **Proximity:** Faceting by continent groups related data enables comparisons without overlapping.

This chart, with its objective title, clarifying labels, and logical legend, provides a robust, informative representation of global life expectancy trends.

Unethical Visualization (Red Team)

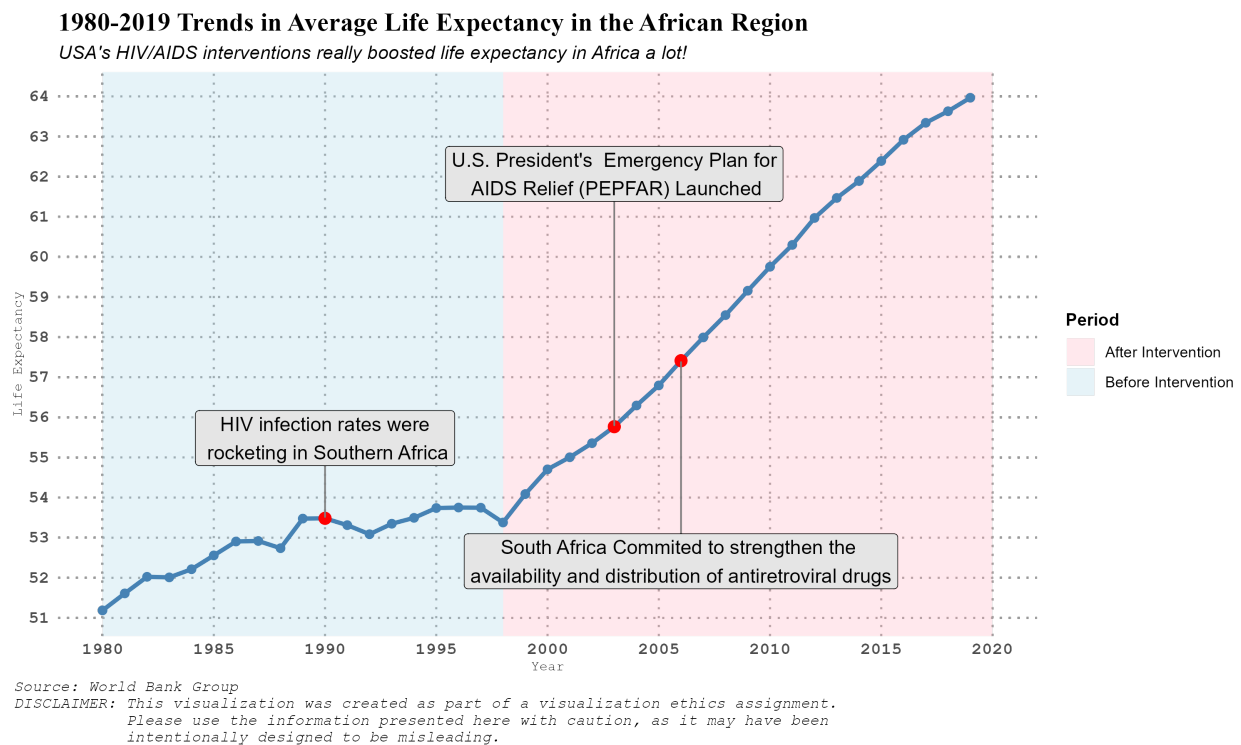


Figure 1: ~

Write Up for the Unethical Visualization (Red Team):

From the visualization, we can find out the situation has changed since 1998, but the intervention from the U.S. was launched in 2003, which presenting there is another reason 1998 affected the trend of life expectancy, but the topic and story was distorts truth to depict the trend Africa's in life expectancy was boosted by intervention from the U.S. for with HIV. Although line graphs graphically represent trends well, 2 this one purposely emphasizes the contribution of the U.S.

Another misleading is “The main reason to affect the life expectancy is HIV”, but the factor is, that there is still some other reason to affect this value, including War, Starving and also Thirsty. It fails to present a balanced or truthful presentation of the data, but instead encourages the user to infer from biased misleading information. The light-blue background represents “Before the intervention” and the light-red background represents “After the Intervention” which does not make common sense.

This visualization follows the CRAP principles:

- **Contrast:** The use of light blue to represent “Before intervention” and light red to represent “After intervention”. This is meant to mislead the audience, which violated common sense, because red is supposed to represent “Emergency” but blue is for “Peace and Love”.
- **Repetition:** Fonts and grid lines are not repeated, which is good, but uneven Y-axis scales generate visual discord and confusion.
- **Alignment:** Title, labels, caption, and legend are all aligned but their contents are altered intentionally to deceive the viewer. Another suggestion is to try to keep the information label in their region, both labels on the right side are over the boundary of the Before-After border
- **Proximity:** Information is separated into Before and After intervention, and Y-axis step width scales also render reasonable. However, the y-axis is being misused, beginning at 50 rather than 0. This creates differences in life expectancy to appear greater than they are.

Data source:

- <https://data.worldbank.org/indicator/SP.DYN.LE00.FE.IN?view=chart>
- <https://data.worldbank.org/indicator/SP.DYN.LE00.MA.IN?view=chart>

Reference:

Black History Month. (2016, October 18). The history of AIDS in Africa. Black History Month 2025.
<https://www.blackhistorymonth.org.uk/article/section/real-stories/the-history-of-aids-in-africa/>