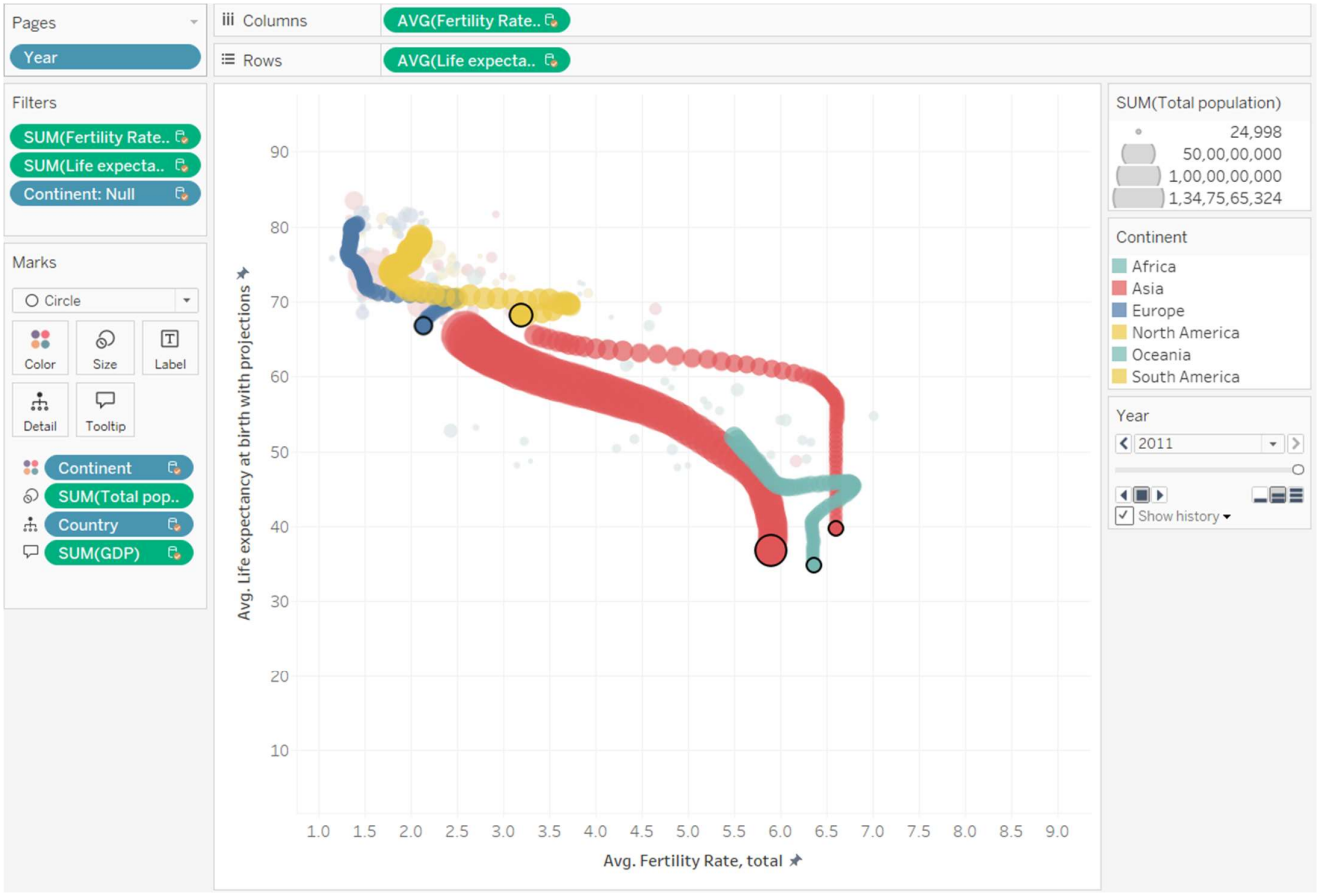
Public Health Dashboard - Extending Hans Rosling's Gapminder Visualization

I imported and joined four datasets: Countries by Continent, Life Expectancy, Fertility, and Population. The data was linked on relevant fields such as Country and Year to ensure accuracy. To improve the clarity of overlapping data points, I applied partial transparency to the country circles.

Additionally, I integrated GDP data from an Excel file and included it as a dynamic tooltip to enrich the analysis. This dashboard enables users to visually explore global trends in public health, population growth, and economic development, offering insights into the complex relationships between these variables.

This project highlights advanced data blending, interaction design, and efficient data processing to ensure a responsive user experience in Tableau.



1. Prepare the Data:

- Ensure you have the required datasets, which typically include:
    - **Life expectancy** by country and year.
    - **GDP per capita** by country and year.
    - **Population** by country and year.
- Data should be in a tidy format with columns for country, year, life expectancy, GDP per capita, and population.

2. Load the Data into Tableau:

- Open Tableau and connect to the data file (e.g., CSV, Excel, or database).
- Ensure that your data is properly recognized with fields such as **Country**, **Year**, **Life Expectancy**, **GDP per Capita**, and **Population**.

3. Convert Year to a Continuous Dimension:

- Drag **Year** to Columns.
- Right-click on **Year** and convert it to a **Continuous** dimension. This will allow Tableau to treat it as a time series.

4. Create an Animated Bubble Chart:

- Drag **Country** to the Detail shelf.
- Drag **Life Expectancy** to the Rows shelf.
- Drag **GDP per Capita** to the Columns shelf.
- Drag **Population** to the Size shelf (this will control the size of the bubbles representing countries).

5. Adjust the Axes and Scale:

- Right-click on the **GDP per Capita** axis, and change it to a **Logarithmic Scale** since GDP per capita can have a wide range of values.
- Ensure the axes ranges for **Life Expectancy** and **GDP per Capita** are appropriate and readable.

6. Add Color for Regions (Optional):

- If your dataset includes a **Region** field, drag **Region** to the Color shelf to categorize countries by geographic region (e.g., Asia, Africa, Europe).
- This adds another layer of context to the visualization, allowing viewers to compare countries by region.

7. Make the Bubbles Transparent:

- To make bubbles partially transparent (as per your project):
    - Click on the **Color** shelf and adjust the transparency slider to the desired level, which helps better visualization when bubbles overlap.

8. Add a Moving Time Slider:

- Drag **Year** from the data pane to the Pages shelf.
- A time slider will appear that allows you to animate the changes over the years.
- Configure the speed and animation settings for the page control to create a smooth visualization.

9. Add Country Labels (Optional):

- Drag **Country** to the Label shelf to display country names next to the bubbles.
- This will help viewers identify specific countries.

10. Enhance with Tooltips:

- Customize the **Tooltip** to display key information (e.g., Country, Year, Life Expectancy, GDP per Capita, Population) when hovering over a bubble.
- Optionally, include GDP data within the tooltip for a more detailed analysis.

11. Format the Visualization:

- Clean up the chart by adjusting fonts, axis labels, and title.
- Add an informative title such as "Gapminder-style Visualization: Life Expectancy vs. GDP Per Capita."

12. Play and View Animation:

- Use the page controls to run the animation, showing the changes in life expectancy, GDP per capita, and population over time.

13. Final Adjustments:

- Fine-tune any additional elements like color legends, axis ranges, or filters.
- If the visualization is slow due to large data sets, make sure data blending is optimized.