# Statistical Visualizations: Scatterplots & Bubble Charts.

Paul Maden.
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Q1. Create a Scatterplot showing correlation of influenza deaths & Population aged +65 years in Tableau:

- This scatterplot shows as the population of individuals aged 65 and older grows, the number of influenza deaths increases:
    - The R-squared: 0.889012
    - $\sqrt{0.889012} = 0.94$ – this matches 1.8_Task_Conducting_Statistical_Analyses.xlsx
    - This strong positive correlation suggests that states with a larger population of individuals aged 65 and older are likely to experience a higher number of total influenza deaths.
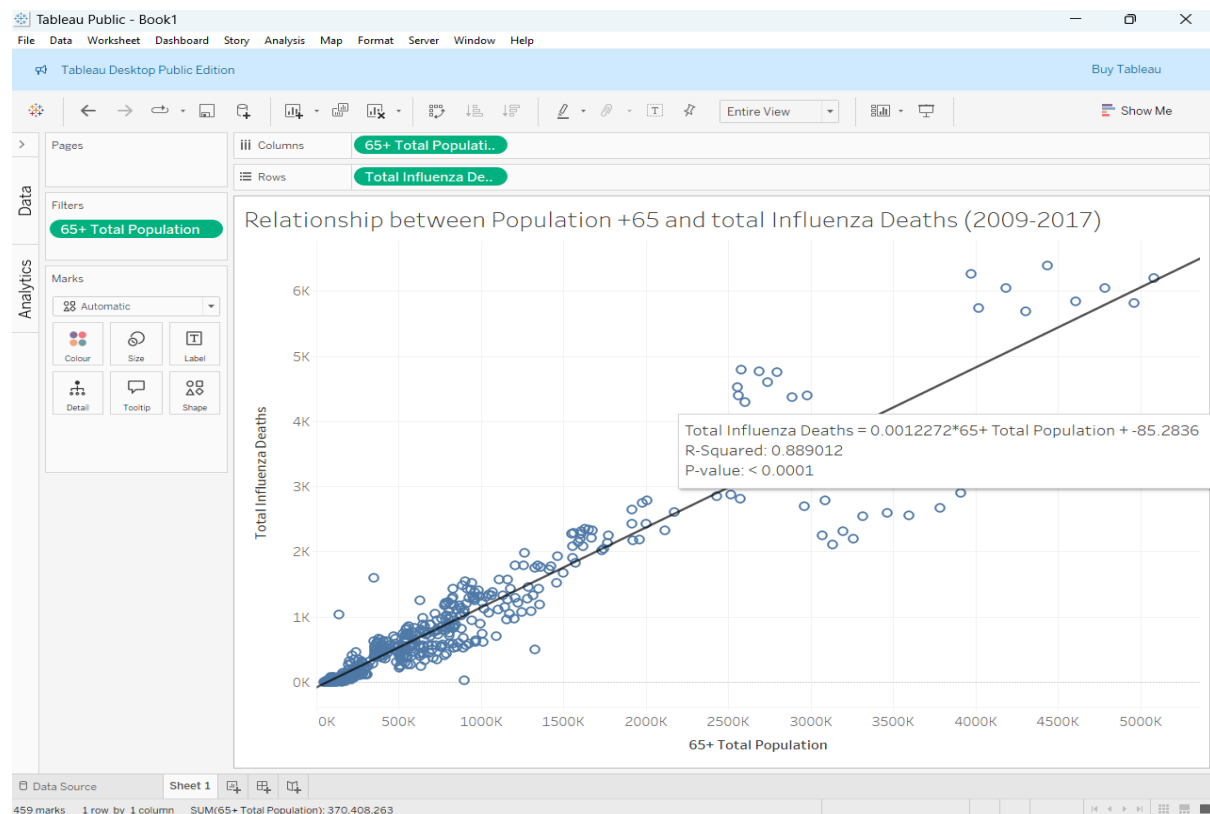

In the scatter plot, most of the data points are clustered relatively close to the trend line, showing a strong positive correlation between the population aged 65+ and the total influenza deaths.

However, there are a few extreme values or outliers, particularly on the right-hand side of the plot in the larger populated states, where a few points lie far above the trend line. These represent instances where the total influenza deaths are higher than what the model predicts based on the 65+ population, indicating possible outliers or anomalies in the data.

Overall, while most of the points are tightly clustered around the line, a few extreme values do deviate significantly from the trend.

Q2. Create a Bubble Chart (and add a 3rd & 4th variable) showing correlation of influenza deaths & Population aged +65 years in Tableau:

- This bubble chart is showing the relationship between influenza deaths and the population aged 65+, with the regional grouping (Midwest, Northeast, etc.) represented by different colours, and the bubble sizes indicating total population:
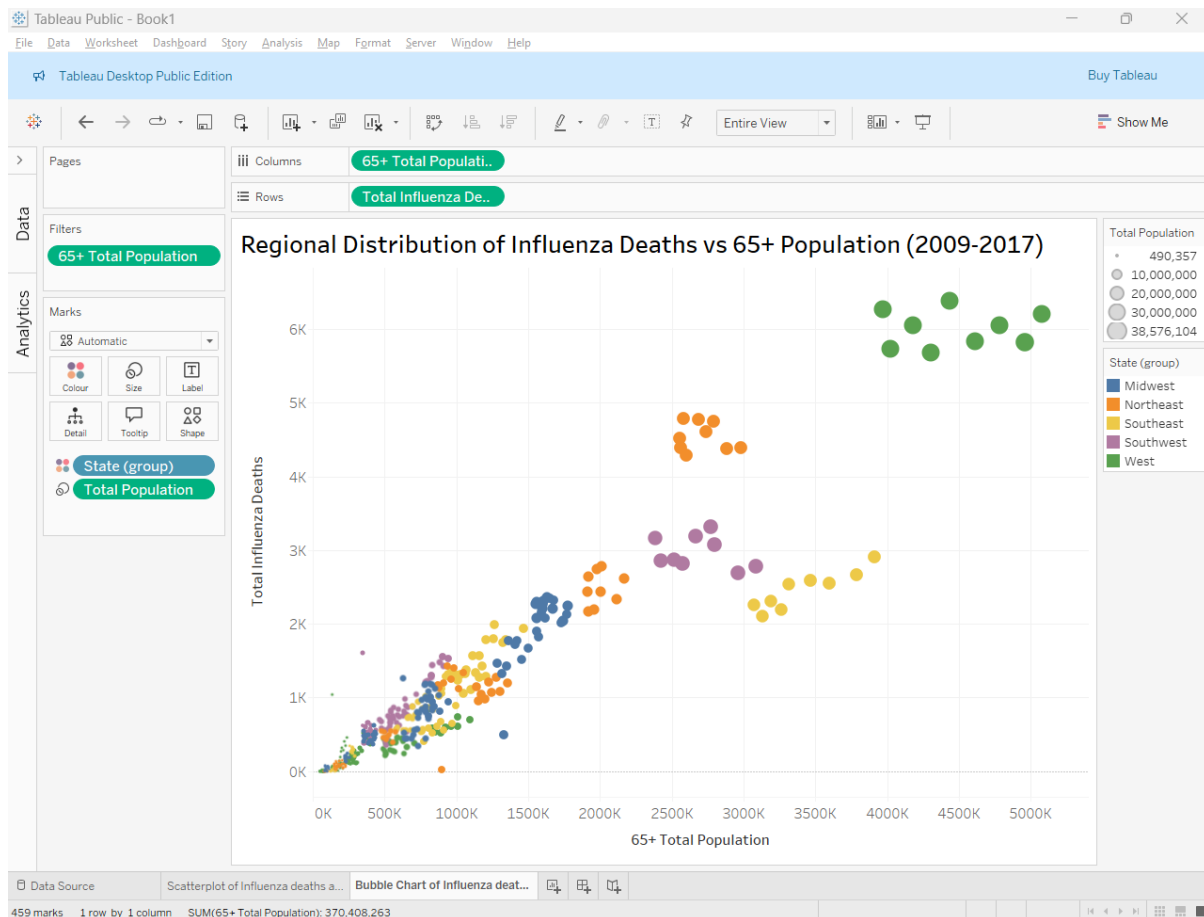
- When using the style guide you created in Exercise 2.2, there was one noticeable issue:
  - Consider *colour-blind accessibility* to improve the chart's usability for all audiences.
    - However, those with colour vision deficiencies might struggle to distinguish between the automated Tableau colours (especially since some colours (like teal and green together) are quite close in hue:
      - Changed colours used:
        - *Blue, Green, and Purple:* These shades provide enough contrast to be easily distinguishable from one another.
        - *Orange and Yellow:* These provide additional high-contrast colours that are distinct, even for those with red-green colour blindness.

Tableau Link:
https://public.tableau.com/views/RegionalDistributionofInfluenzaDeathsvs65Population2009-2017/BubbleChartofInfluenzadeathsandage2?:language=en-GB&publish=yes&:sid=&:redirect=auth&:display_count=n&:origin=viz_share_link