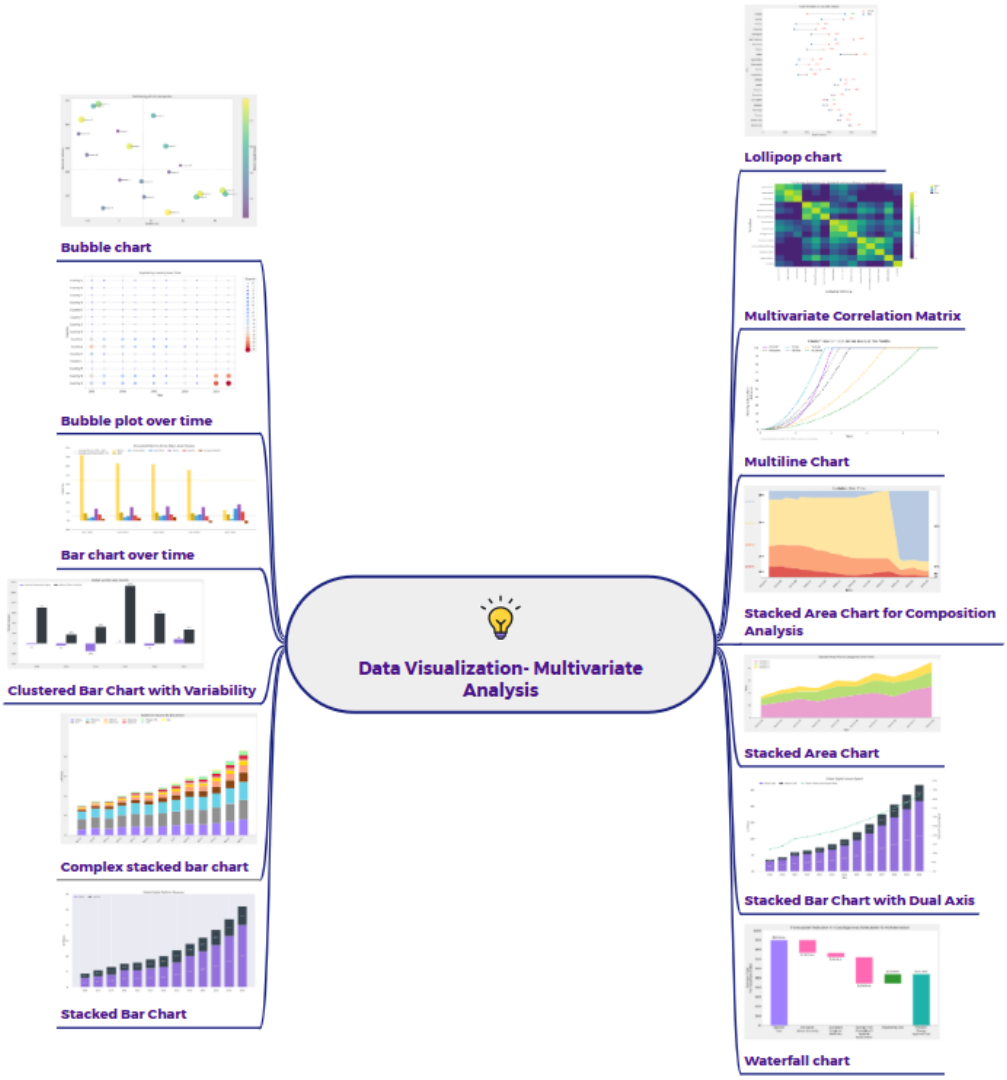
Different data visualization options for multivariate analysis



Description for each of the multivariate data visualization charts shown above:

- **Bubble chart:** Displays three numerical variables, where two are plotted on the axes and the third is represented by the size of the bubbles.
- **Bubble plot over time:** Shows the change in three numerical variables over a period, with bubbles moving and changing size.
- **Bar chart over time:** Illustrates the change in the values of different categories of a numerical variable over time using bars.

- **Clustered Bar Chart with Variability:** Compares the values of multiple sub-categories within main categories, often showing error bars to represent variability.
- **Complex stacked bar chart:** Displays the composition of multiple sub-categories within main categories, allowing for more intricate breakdowns.
- **Stacked Bar Chart:** Shows the contribution of different sub-categories to the total value of each main category.
- **Lollipop chart:** Represents the values of multiple categories with lines extending from a baseline to a point, often used for comparison.
- **Multivariate Correlation Matrix:** Visualizes the correlation coefficients between multiple numerical variables using a color-coded matrix.
- **Multiline Chart:** Displays the trends of multiple numerical variables over the same independent variable (often time).
- **Stacked Area Chart for Composition Analysis:** Shows the trend of multiple numerical variables over time, with each variable's area stacked to represent the total and highlight individual contributions.
- **Stacked Area Chart:** Similar to the above but might not explicitly focus on composition.
- **Stacked Bar Chart with Dual Axis:** Combines a stacked bar chart with a line chart, using two different vertical axes to represent variables with different scales.
- **Waterfall chart:** Illustrates the cumulative effect of sequential positive and negative values on an initial value.