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Bubble Plots and Heat Maps

You've learned that run charts can be used to visualize time-ordered data.

Another tool for seeing changes over time is a bubble plot.

Bubble plots are effective for visualizing multivariate data when motion or animation can help communicate the message in your data. A bubble plot is like a scatterplot, but with extra dimensions.

In this bubble plot, you see the change in mobile phone subscriptions over time, grouped by region.

Each region is sized by the population within the region.

East Asia & Pacific, which has the largest population, is the largest bubble.

When you press the play button and add trail lines for the bubbles, you can see the changes over time.

When you add a data filter, you can split the regions into countries to see how individual countries are changing over time.

For example, here you can see that Macao and Hong Kong are increasing at a much faster rate than other countries within the region.

You learn more about using bubble plots for communicating the message in your data in the next lesson.

An alternative to run charts, trellis plots, and bubble plots for visualizing multivariate data that is time ordered is a heat map.

In a heat map, the values are represented as colors.

Here is a heat map for the mobile subscriptions for countries in Europe and Central Asia over time.

The darker the color, the more cell phones. The range is zero (no cell phones) to 200 (that is, 200 cell phones per 100 people).

For some years, the data are missing for some of the countries. These cells are white.

You can see how the mobile phone subscriptions increase over time.

For most countries, cell phone subscriptions started to take off around 2000, and most countries had a lot of cell phones by the year 2010.

Compare this to the heat map for Sub-Saharan Africa, where cell phone subscriptions are very low in most countries until around 2010, and many countries continued to have few cell phones per 100 in 2017.

Earlier, you learned about run charts, overlay variables, and trellis plots.

In this video, you learned how to visualize multivariate or multidimensional data using bubble plots and heat maps.

You see how to create bubble plots and heat maps in JMP demonstration videos.

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