Effectively Communicating Numbers: Selecting the Best Means of Display Summary

Nick Blackbourn

September 27, 2016

In business, crafting and designing how quantitative numbers are presented through graphs is essential to being a strong and successful communicator with your fellow employees. When one is asked to make a display of a given data set, he or she needs to understand which graph will present the data in the most effective and directed way. It is crucial to avoid the inclusion of any exterior data that distracts from the main data points and know when to use a table or graph to show the data set.

For a table, these are most useful when looking at individual values or making exact calculations about data. On the other side, a graph is designed to show trends, patterns, or the slope of a line without worrying about the numbers themeselves. One scenario when a graph would be used is to show the relationship between quantitative values (60-100) and categorical values (north, south, east, west). When drawing graphs, there are three common categorical values which include: nominal, ordinal, and interval. Nominal values are distinguished as having discrete, non-quantative values that do not need to be ordered in any particular way. For ordinal values, they are also not quantitative but are ordered according to rankings such as financial status or class standing. Intervals are known as quantative values that do have intrinsic order and are organized into different ranges.

In addition, there are seven types of quantitative business data relationships that are important to distinguish between when looking at the data. These are known as time-series, ranking, part-to-whole, deviation, distribution, correlation, and nominal comparison. A time-series relationship can be defined as one of the most common business graph techniques that matches quantitative values with time intervals such as days, months, or years. The ranking shows quantitative values that are matched with different values for size. A part-to-whole depicts the share that a quantitative value has in comparison to its neighboring parts. A deviation is made to show how much quantitative values were off from a predetermined level or point. A distribution shows where quantative values fall in relation to the other values and gives conclusions about symmetry, skewness, and shape. A correlation shows if two pairs of quantative values have a positive or negative relationship to the other. A nominal comparison is the least interesting because it merely compares region's values and has no connections between the respective values.

This article states that the top two aspects in making inferences about quantitative data are: line length and 2-D position. Even though 2-D can be a prominent feature in data, it can be extremely misleading and cause the reader to draw false conclusions about graphs. Similar to previous readings, one needs to avoid using grid lines unless they are absolutely neccessary to the graph. Another feature that disrupts the data is the use of multiple colors or using overexcessive color that gets in the way of the intended message.

In contrast, there are four kinds of objects on graphs that do a great job of depicting data and helping us to make inferences and draw conclusions. These are known as: points, lines, bars, and boxes. Points can take many different shapes on graphs such as scatter plots and are strictly used for finding individual values. Lines are a great tool for depicting a correlation between data points that have some kind of relationship between one another and should only be used on an interval scale. Bars are a special technique because of their ability to grasp individual data points as well as show a connection between values. When one uses a bar graph, the scale must always begin at zero. In analyzing box plots, these are known for showing the showing the range of quantitative values along with the median or middle point between data.

One other key element in graphing values is how each variable is displayed and/or designed. For example, variables on bar graphs can be arranged with the categorical on the horizontal or vertical axis depending on how long the text labels are with each of the bars. When there are up to four variables, we need to pay attention to the concept of "small multiples" and look for ways to display the data in a simple and concise manner. In regards to legends, it's important to make sure that these are distinguishable and aren't

distracting for the reader. The quantative scale can be placed on either the left or right side of the graph but it needs to begin at zero when there are negative values included in the data. When designing a graph, it is essential to label all graphs and axes and use colors that stand out when trying to make a statement about a certain data point.