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Assignment #3

**Summary of Effectively Communicating Numbers**

Differentiating between good and poor displays has to do with understanding quantitative information and the process of selecting and constructing a graph, which is primarily what the author will discuss in this article. The two required steps are; first to determine one’s message and identify the data necessary to communicate it and second is to determine if a table, graph, or combination of both is needed to communicate one’s message.

When deciding whether to utilize a graph or a table, the importance lies in the message one wants the data to mean. If one needs the data to show trends, patterns, and exceptions in the data then a graph is more fitting, rather if one needs the data to highlight precise values then a table works best. When using a graph, categorical data is necessary to describe what the numbers measure. There are three types; the first type is nominal which does not represent quantitative data and has no order, second is ordinal which has an intrinsic order but still does not represent quantitative data and last is interval which has intrinsic order and represents quantitative data. To fully understand the data, it is important to compare it to other relative data or information, the author has explained seven common relationships for quantitative data. The list is composed of time series relationships, ranking relationships, part-to-whole relationships, deviation relationships, distribution relationships, correlation relationships and nominal comparison relationships.

The first step in graph selecting and design process is to determine one’s message and identify the data that portrays the objective to get across to the targeted audience. Next, determine if a table, graph or both is best suited. Determining the means to encode one’s data relies on the seven common relationship in quantitative data, choosing one or more. The next aspect of the design process deals with the number of categorical variables that need to be represented in the display. The basic rule says that the categorical scale should be on the X axis and the quantitative scale on the Y axis. The next step in the sequence is more design aspects such as deciding the range for the scale, directly labeling data, placing the scale on either the left or right side, adding a descriptive title and axis titles, and ultimately deciding if graph lines are necessary. If the graph has a particular data point of high importance that is essential for the audience to notice, then there are ways to highlight that data point. For instance, using bright or dark colors to contrast the data point is effective. Similarly, a border could be places around a bar graph and lines can be thicker on line graphs. These are all steps to keep in mind when designing a graph, to make it effectively communicate the objective to one’s audience.