

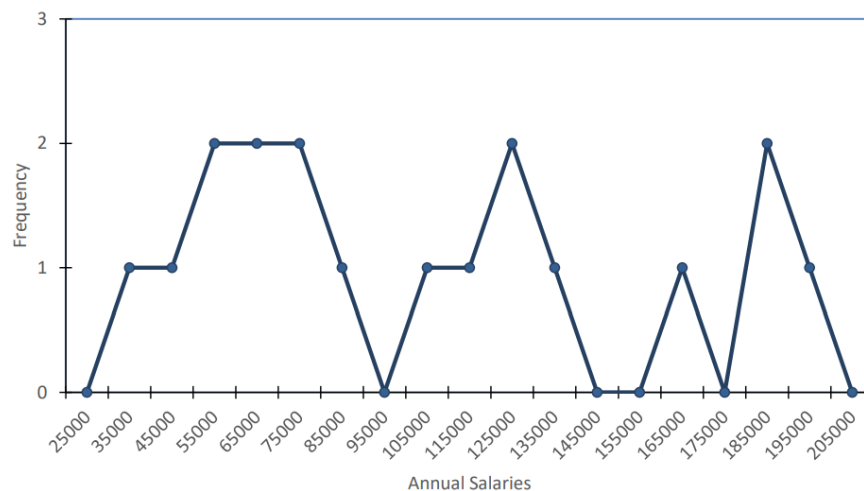
2.6: Frequency Polygons

Another option for graphing a frequency distribution of quantitative scores is a frequency polygon. Polygon means a many-sided figure. **Frequency polygons** are frequency distribution graphs for quantitative data which present scores or intervals using lines which connect to score or interval midpoints along the x-axis at varying heights which represent frequencies along the y-axis. That's a mouthful, so let's simplify: essentially, a frequency polygon replaces the bars of a histogram with a shape made by connecting the midpoints of the tops of each bar.

To construct a histogram, data are first organized to identify the range that needs to be shown on the x-axis. Then the frequencies of the scores (or intervals) are counted to identify the height needed for the y-axis. These are the same initial steps used to create a histogram. Once these axes are created and labeled, dots are placed over the center of each score or interval on the x-axis at a height corresponding to the frequency with which the corresponding score or interval was observed in the data. If the frequency of a score or interval is 0, the dot is placed on the location of the x-axis corresponding to that score or interval midpoint. Finally, dots are connected using straight lines from left to right. When creating a frequency polygon, space is provided on the left and right of the range within which scores occurred. Those two locations have frequencies of 0 and are included so that the graph can start and end by anchoring down to the x-axis.

Figure 4 shows a frequency polygon using the annual salary data from Data Set 2.1. This was constructed using intervals. If you compare it to the histogram for these data (Figure 3), you can see the similarity in heights and patterns but the difference in how the shift from interval to interval is represented visually as bars giving a somewhat more discrete appearance to the data (in the histogram) or sloping shifts which give a somewhat more continuous appearance to the data (in the polygon).

Figure 4. Frequency Polygon of Annual Salary Intervals



This page titled [2.6: Frequency Polygons](#) is shared under a [CC BY-NC-SA 4.0](#) license and was authored, remixed, and/or curated by .