

3.4: Interpreting All Three Measures of Central Tendency

In a symmetrical, unimodal distribution, the mode, median, and mean are all the same number.

Note

What does symmetrical mean?

What does unimodal mean?

This means that the more symmetrical a distribution is, the closer the median, mode, and mean will be.

By knowing how similar the median, mode, and mean are, you can guesstimate at the symmetricalness of the distribution.

✓ Example 3.4.1

What's skew? Positive skew? Negative skew?

Solution

Find these terms in the glossary, or the parts of this chapter when skew was discussed.

Without having all of the data or seeing the distribution, we can make predictions about what the distribution might look like because:

- The mean is pulled in the direction of the extreme scores (or tail of the skew),
- The mode is the highest point in the skew,
- The median is between the mean and mode.

In particular, we can predict that:

- If the mean is a lot bigger than the median, that the distribution will have a positive skew.
 - $\text{Mean} > \text{Median}$ = positive skew
- If the mean is a lot smaller than the median, that the distribution will have a negative skew.
 - $\text{Mean} < \text{Median}$ = negative skew

Summary

Although you've learned about the measures of central tendency before, this section shows you how we can use these three numbers together to understand what a whole distribution of data might tell us.

Next, we'll look at measures of variability that, combined with the measures of central tendency, will tell us a LOT about a distribution of data.

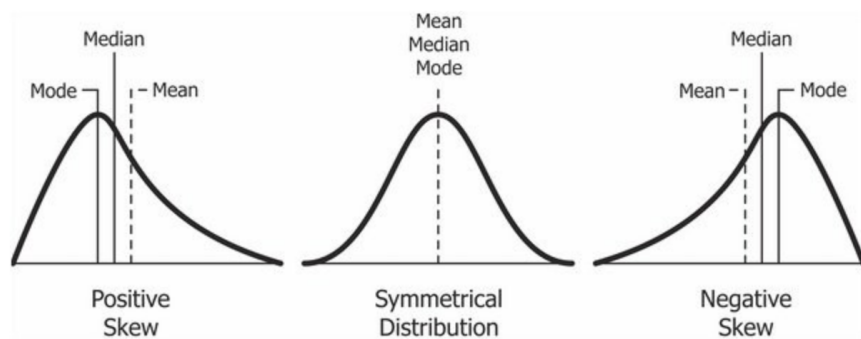


Figure 3.4.1: Mean, Median, Mode, and Skew (Copyright CC-BY-SA Diva Jain/Diva Dugar, [Source](#))

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