



The next step in statistics, once you have sampled a population and compiled results, is to analyze your results.

There are 4 main measures we use to analyze results:

Let's say we are looking at prices of haircuts across different salons:

Supercuts \$15    Cost Cutters \$18    Joe's Hair Studio \$20    Hair House \$20    Vidal Sasson \$30

*Mean or AVERAGE—*

*Add all the numbers together, then divide by the amount of numbers there are.*

*Since we have 5 different prices, we have 5 different numbers.*

*So, first add all the numbers together:*

$$15 + 18 + 20 + 20 + 30 = 93$$

*Now, divide the total by the amount of numbers we have (5)*

$$93 \text{ divided by } 5 = \$18.60$$

COPY WHAT IS HIGHLIGHTED!!!!!!!!!!!!!!!!!!!!!! OR PRINT IT! Then SUMMARIZE what I said in YOUR OWN WORDS, in ONE SENTENCE. In other words, define average in your own words.

What this means, the average or the price is the price that represents the most common or middle price. Think of average like this:

Picture each number to be a student. Each student shares their ideas about a topic I propose, such as music. The ideas that are most commonly repeated or represented in this discussion, represent the average, in other words, if I were to sum up your discussion in one sentence, what would be most representative.

When I asked most of the students in class what average is, ALL of you said: "when you add up all the numbers and divide by the amount of numbers you have. BUT, think about this. This is MERELY an algorithm (a procedure or set of steps) on how to calculate the average, NOT WHAT IT ACTUALLY MEANS!!!!!!!!!!!!!!!!!!!!!!

So, in the hair salon example above, \$18.60 would represent the typical price salons are charging for a haircut, it is a single price that represents the set.

**RANGE:** What is the variation (or change in your data)

**BIGGEST NUMBER - SMALLEST NUMBER**

Hair Salon \$30-\$15=\$15. So, we could say there is a \$15 range in price, from my cheapest to most expensive haircut.

**RANGE** is a good way to measure the difference between values in a set and to get a quick comparison.

**MODE:** The number that repeats the **MOST** often.

In my haircut example, the price of \$20 is repeated twice. Both, Joe's Studio and Hair House charge \$20. So, you could say that is the most popular price.

**MEDIAN:** The middle number in the set.

List numbers in numerical order (**LEAST** to **GREATEST** or **GREATEST** to **LEAST**).

Cross off 1 from top, 1 from bottom and keep going until you reach the middle number.

15

18

20

20

30

Cross off 15

18

20

20

Cross off 30

Cross off 15

Cross off 18

20

Cross off 20

Cross off 30

\*\*Your middle number would be 20.

Note, this SET(or group of numbers) had an odd amount of points. Therefore, it was easy to find the middle number.

HOWEVER, if you have a set with an EVEN number of points, you will have to do one more step to find the median.

Let's chop off the 30 in the prior set, so we would be left with:

15

18

20

30

If I crossed off in order, I would be left with 18 and 20. Therefore, to find what is in the middle, take the average. Add both numbers together and divide by the amount of numbers (2)

$$18+20=38$$

$$38/2=19$$

Or if you recognize that 19 is in between 18 and 20, that is great too!