

Transcript: Live Measures of Spread - Range and IQR

Spread.

I think we have the idea of what we mean by spread - both distributions here have the same center. They have medians of about 70 but clearly the first one is way more spread out.

So we want a measure of spread and the first one we're going to look at is pretty easy - the range - the max minus the min. Not used very often as a formal measure spread but it's the easiest one to talk about in the beginning. What's all the way from the bottom to all the way to the top. It's very sensitive to outliers. It only uses the two extremes to calculate itself so if they're weird then it's weird

The interquartile range on the other hand uses the first and third quartiles - the subtraction of those two - and it should be reasonable that is very not sensitive to outliers because I throw away the bottom 25 percent of the data and I throw away the top 25 percent of the data. So I'm getting the range in the middle fifty percent.

When you have a histogram the minimum is not necessarily on the low end of this bar, you know it somewhere in that bar, if you want to approximate, take that middle of that bar because most likely it's probably not at the very end of that bar. Same thing on the Max.

So even from a histogram we can only approximate the range we can't really even approximate anything else from the picture very easily.

And software packages may give you different answers for Q1 and Q3 don't stress about it there's just four or five different common formulas.