

Re: Standard Deviation & the 68–95–99.7 rule

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On Dec 21, 1:02 pm, "FredJeffr...@xxxxxxxxxx" <FredJeffr...@xxxxxxxxxx> wrote:

On Dec 21, 11:39 am, Maya <maya_s...@xxxxxxxxxxxxx> wrote:

At the bottom of the intro to the Wikipedia entry on the 68–95–99.7 rule, it states:

"This rule is often used to quickly get a rough estimate of something's probability, given its standard deviation."

What an awful sentence.

What " thing's " probability could I estimate, given the thing's standard deviation? Let's say I have this data set: {6, 6, 8, 8} . It's standard deviation is 1. So, given its "1", I can estiate the probability of what?

http://en.wikipedia.org/wiki/68-95-99.7_rule

You also need the mean, in the case of your data set 7. So the 68–95–99.7 rule says that about 68% of observations will be within 1 of 7 (between 6 and 8), 95% within 2 of 7 (between 5 and 9) and 99.7% within 3 of 7 (between 4 and 10) IF your data set were distributed normally.

Say you have a normally distributed data set with mean 7 and standard deviation 1. Pick an element at random from your set. The probability of that element's being between 6 and 8 is 68%, the probability of its

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being between 5 and 9 is 95%, etc.

There is a better example at the bottom of this

page:<http://www-stat.stanford.edu/~naras/jsm/NormalDensity/NormalDensity.html>

Thanks Fred.

This stuff seems to be going in a circle. The Empirical Rule applies only to Normal Distributions. So I can ascertain some things about the data points in a normal distribution by applying the empirical rule, but I should only apply the empirical rule if I'm first sure that the data set is a normal distribution!

I'm trying to find a real-world use for Standard Deviation and the Empirical Rule, but so far it seems the only uses are to tell me things about a data set if and only if I already know those very things about the data set are already true.

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