Re: Adjust for Skewness and Kurtosis in Excel

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On Tue, 15 Apr 2008 13:38:17 EDT, Eric <eric8005@xxxxxxxxx> wrote:

> Bear with me, as I'm a novice here.
>
> If I have a distribution which is approximately normal, with just a slight skew and kurtosis, can I somehow adjust for that?
>
> Say, I have the following aggregate numbers from the population data, but I don't have the actual detailed data they were generated from:
> Mean: 12,210
> Standard deviation: 2,080
> Skewness: −0.036
> Excess Kurtosis: 0.787
>
> If I want to find where 95% of values surrounding the mean lie (is this called the confidence interval for the population mean?), without adjusting for skew and kurtosis, I would use something like:

No, this would be the 95% CI for the population values.

You would divide the SD by the square root of N in order
to get the Standard Error, and the SE would be used for
a CI on the mean.

> =NORMINV(0.025, 12210, 2080)
> =NORMINV(0.975, 12210, 2080)
> ..right?
>
> Now, how would I adjust those values for skew and kurtosis?

On values −−
If you want a CI on the values, use the observed sample values.
You might separately put Upper and Lower limits on the
percentiles observed, using other ranked values....

These estimators will be rather poor unless the sample is large,
but they will be better than computations from using the SD.

On means −−
Since there is no notable skew, the CI on the population
mean will be well−estimated by using the SE.

The only "asymmetrical" limits (that I remember) were achieved
by transforming raw data, setting limits, and back−transforming
those limits.

Again, I'm a novice at this, so please correct me if I've done anything fundamentally wrong.

Almost always, CIs are placed on "means", not on population
values. Lacking access to raw data, you could estimate the
range as you suggest. If that was a common problem, maybe
someone would have suggested "adjustments" for skewness
and kurtosis. But if you don't have the raw data, you should
probably just state the estimate, apologize for lacking the raw
data, and move on.

−−
Rich Ulrich

http://www.pitt.edu/~wpilib/index.html
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