Subject: Re: significance of a linear regression
Posted by Craig Markwardt on Sat, 07 Apr 2007 03:34:26 GMT
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"jochem.verelst@gmail.com" <jochem.verelst@gmail.com> writes:
> Hi IDL gurus,
>
> I am much in favor of the IDL way, but being a newbie, it still causes
> me big headache.
>
> So this is the question:
>
> Just as in SPSS, I wanted calculate the significance of linear
> regression. The function REGRESS is very handy, as it also provides
> the F-value by means of the keyword FTEST. Luckily this is the same F-
> value as calculated in SPSS ( I just tested). However, SPSS also
> provides the congruent p-value. And this is what matters to have an
> idea of the significance. REGRESS does not provide such a keyword. So,
> has anyone an idea how to calculate the significance of a linear
> regression?

I'm not sure what a "congruent p-value" is, but if you mean the
Pearson's correlation coefficent, then you can use the standard
CORRELATE() function. But surely that must be the same as the R value
returned by REGRESS()?

Craig

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Craig B. Markwardt, Ph.D. EMAIL: craigmnet@REMOVEcow.physics.wisc.edu
Astrophysics, IDL, Finance, Derivatives | Remove "net" for better response
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Subject: Re: significance of a linear regression
Posted by jochem.verelst@gmail. on Sat, 07 Apr 2007 09:07:51 GMT
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On Apr 7, 5:34 am, Craig Markwardt
<craigm...@REMOVEcow.physics.wisc.edu> wrote:
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> Craig
>
> --
> ---------- ----------
> Craig B. Markwardt, Ph.D. EMAIL: craigm...@REMOVEcow.physics.wisc.edu
> Astrophysics, IDL, Finance, Derivatives | Remove "net" for better response
> ---------- ---------- Hide quoted text -
>
> - Show quoted text -

Thanks for the info Craig,
Though, I already figured out the CORRELATE function and keyword.
However, this is not exactly what i meant. Although it is recognized
that the R-square statistic is a better measure of the strength of
relationship, from the F-test, at least in SPSS, the significance
value (p) can be calculated. When it is smaller than 0.05, then the
variation explained by the model is not due to chance. I wish to
calculate this significance because then I have an automated threshold
to decide whether a relationship is valid.

Hopefully there is an easy way to calculate the significance.

Jochem

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Subject: Re: significance of a linear regression
Posted by Kenneth Bowman on Sat, 07 Apr 2007 15:39:59 GMT
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In article <1175936871.328589.124530@b75g2000hsg.googlegroups.com>,
"jochem.verelst@gmail.com" <jochem.verelst@gmail.com> wrote:

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> calculate this significance because then I have an automated threshold
> to decide whether a relationship is valid.
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> Hopefully there is an easy way to calculate the significance.

It is, perhaps, unfortunate that REGRESS or CORRELATE do not compute the statistical significances via keywords, but you can test the hypothesis that rho = 0 by using the fact that r*SQRT(n-2)/SQRT(1.0 - r^2) follows the t-distribution with n-2 degrees of freedom.

Here's a web page that you can use to check your calculation

http://www.met.rdg.ac.uk/cag/stats/corr.html

Ken Bowman

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Subject: Re: significance of a linear regression
Posted by Kenneth P. Bowman on Sat, 07 Apr 2007 19:06:01 GMT
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To follow-up my own posting, I think this is what you want. This has been minimally tested (i.e., I wrote it today), so use at your own risk.

http://idl.tamu.edu/downloads/correlation_significance_kpb.p ro

Cheers, Ken

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