

Re: a principal component analysis question

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- *From:* Richard Wright <richwrigREMOVE@xxxxxxxxxx>
 - *Date:* Mon, 30 May 2005 16:32:15 +1000
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On 29 May 2005 22:52:18 -0700, "Yiyu" <shenyiyu@xxxxxxxxxx> wrote:

>The question is following: the simplest case: suppose I have k
>variables, $x(1) - x(k)$, I do a principle component analysis and find
>the first 3 principle components: $z(1) - z(3)$ explain most of the total
>variation. But I suspect $x(1) - x(k)$ are actually of two different
>groups, and for the 1st group, $z(1)$ and $z(2)$ alone are enough to
>explain most of its total variation, for the 2nd group, $z(1)$ and $z(3)$
>are enough to explain most of its total variation. So instead of
>express the whole group in a 3-dimension space, it will do better to
>express the data with two 2-dimension planes, and these two planes are
>orthogonal to each other. H
>
>Hope the question is clear enough. Do you know any previous research
>efforts related to similar problems? and any references?
>
>Thank you very much.
>
>Yiyu

Are the 1st and 2nd groups defined before the PCA was run? For example, are they groups such as male and female?

If so then it sounds as if you should be doing a canonical variates analysis on the two groups and interpreting that. I have seen this procedure characterised as the 'PCA' you do when your primary interest is groups, not individuals.

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- *Follow-Ups:*
 - ◆ ***Re: a principal component analysis question***
◇ *From:* Yiyu
- *References:*
 - ◆ ***a principal component analysis question***
◇ *From:* Yiyu

Re: a principal component analysis question

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