

Matrix Spectral Decomposition (matSpD) - RESULTS

Your Uploaded Correlation Matrix (absolute values to 4 decimal places):

	1	2
1	1.0000	0.9900
2	0.9900	1.0000

Original (total) number of variables (V) after removing redundant (collinear) variables:

2

For factor 1 to V, original eigenvalues associated with the correlation matrix:

1	1.99
2	0.01

Variance of the observed eigenvalues:

1.9602

Effective number of independent variables [Veff]:

1.0199

Significance threshold required to keep Type I error rate at 5% (0.05/Veff):

0.0490244141582508

USING THE REPORTEDLY MORE ACCURATE ESTIMATE OF THE Veff [VeffLi] PROPOSED BY LI AND JI (2005):

Effective Number of Independent Variables [VeffLi] (using Equation 5 of Li and Ji 2005):

2

Experiment-wide Significance Threshold Required to Keep Type I Error Rate at 5%:

0.0253205655191037

NB: I recommend using the Li and Ji (2005) approach only if VeffLi < Veff.

SELECT A SUBSET OF VARs WHILE OPTIMISING INFORMATION:

For factor 1 to V, Eigenvalues and Proportion of Variance, after Varimax Rotation:

1	0.01	0.005
2	1.99	0.995

Principal component coefficients for varimax-rotated matrix:

- Columns represent factors (principal components) 1 to V
- Rows represent Variable 1 to V

	VAR 1	2
1 V1	0.0707	-0.9975

```
2 V2 -0.0707 -0.9975
```

Factor "loadings" after varimax rotation:

- Columns represent factors 1 to V
- Rows represent Variable 1 to V
- Variables contributing the MOST to each rotated factor are designated by a "1"

```
VAR 1 2
1 V1 1 1
2 V2 1 1
```

=> Select one VAR to represent either:

- i. each factor,
- ii. the factors with the largest Veff eigenvalues, or
- iii. the factors explaining a selected proportion of variance.

If there are no results between the above two lines there must be a problem with your input file => please re-check. However, if you are 100% confident that your input file is correct but cannot get any results, please email me, detailing your problem.

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