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**Original Articles** 

# Exploratory Factor Analysis With Small Sample Sizes

J. C. F. de Winter\*, D. Dodou\* & P. A. Wieringa Pages 147-181 | Published online: 14 Apr 2009

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### Abstract

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## Notes

\* These authors contributed equally to this work

<sup>1</sup> This article defines simple structure as a special case of Thurstonian simple structure, also called independent cluster structure or ideal simple structure.

<sup>2</sup> Lorenzo-Seva and Ten Berge (2006) suggest the .95 threshold for good agreement on the basis of judgments of factor similarity by factor analytic experts. Note that others have used a .92 threshold for good and .98 for excellent agreement (MacCallum et al., 2001).



<sup>4</sup> A loading of .6 was considered low for the sample size (N = 17) under investigation. This was based on the findings of the first part of the simulations (Table 2): for  $\lambda = .6$ , f = 3, p = 24, the required minimum N for good agreement (K = .95) was 55.

<sup>5</sup> Cronbach's  $\alpha$  was calculated for two conditions of the first simulation series (low loadings:  $\lambda = .2$ , f = 2, p = 24, N = 1,438 and high loadings:  $\lambda = .9$ , f = 2, p = 24, N = 6), Although factor recovery was identical in those two conditions (see Table 2), average Cronbach's a among variables loading on the factor was .332 for the low loadings and .968 for the high loadings. This demonstrates that high internal consistency is not necessary for good factor recovery. A more detailed discussion of this issue can be found in <u>Boyle (1991)</u>.

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