MGCFA Class Assignment

Program a multigroup model and calculate latent means.

DASS – Depression, Anxiety, and Stress Scale

* Depression: Questions 3, 5, 10, 13, 16, 17, 21
* Anxiety: Questions 2, 4, 7, 9, 15, 19, 20
* Stress: 1, 6, 8, 11, 12, 14, 18

Test gender as the grouping variable:

* 1 = female
* 2 = male

Add partial invariance to your table when necessary.

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| --- | --- | --- | --- | --- | --- | --- |
| Model | X2 (df) | RMSEA | SRMR | CFI | Change CFI  =< .01 = same  > .01 = different | Different? |
| All Groups | (186) = 547.099 | .069 | .051 | .896 | n/a | n/a |
| Female | (186) = 485.486 | .081 | .062 | .834 | n/a | n/a |
| Male | (186) = 474.099 | .097 | .066 | .849 | n/a | n/a |
| Configural  Invariance  Picture | (372) = 959.585 | .088 | .063 | .842 | n/a | n/a |
| Metric Invariance  Loadings | (390) = 995.807 | .087 | .073 | .837 | .005 | No |
| Scalar Invariance | (408) = 1043.341 | .087 | .076 | .829 | .008 | No |
| *Strict Invariance* | *(429) = 1112.158* | *.088* | *0.080* | *.816* | *.013* | *Yes* |
| Partial Strict Invariance  Q21 variance | (428) = 1099.067 | .087 | .079 | .819 | .010 | No |

What pieces would you freely estimate to get to partial invariance?

Q21 variance is different for men and women

Men = .222

Women = .127

Average = 1.146

Interpret your findings – are the groups invariant? Did you see a break down between groups anywhere? What does that break down imply?

Mostly, one problem with question 21 variance.

Include the latent means and standard deviations for your groups.

Use a t-test to determine if they are significantly different. Include Cohen’s d for your test.

Depression: t = -2.5864, df = 272.86, p-value = 0.01022

*t*(272.86) = -2.59, *p* = .01, *d* = 0.28

Women *M*  = 1.42, *SD* = 0.44

Men *M*  = 1.56, *SD* = 0.62

Anxiety

t = -0.37494, df = 351.64, p-value = 0.7079

*t*(351.64) = -0.37, *p* = .71, *d* = .04

Women *M* = 1.79, *SD* = 0.61

Men *M*  = 1.81, *SD* = 0.61

Stress

t = 0.68862, df = 337.66, p-value = 0.4915

*t*(337.66) = 0.69, *p* = .49, *d* = .07

Women *M* = 1.97, *SD* = 0.61

Men *M*  = 1.93, *SD* = 0.65