

Which coefficients does Mplus automatically constrain across groups in a two-group regression or path model?

Authored by
stats writer

July 1, 2024

RECOMMENDED CITATION

stats writer (2024). *Which coefficients does Mplus automatically constrain across groups in a two-group regression or path model?*. PSYCHOLOGICAL SCALES. Retrieved from <https://scales.arabpsychology.com/?p=165066>

Mplus is a statistical software program used for analyzing data in regression and path models. In a two-group regression or path model, Mplus automatically constrains certain coefficients across the two groups. This means that the values of these coefficients will be held constant for both groups, rather than being allowed to vary independently. The specific coefficients that are constrained may vary depending on the specific model being used, but they are typically those that are not of interest or are not expected to differ between the two groups. This constraint helps to simplify the model and improve its interpretability, as well as reduce the risk of overfitting the data.

Which coefficients in a two-group regression or path model does Mplus constrain across groups by default?

| Mplus FAQ

The short answer

None of the variables in a regression or path model (i.e., when all variables are manifest/observed), none of the parameters are constrained to equality by default.

An example with explanation

Below is a simple two-group path model with an observed variable y regressed on three other observed variables, x_1 , x_2 , and x_3 .

Data:

File is D:datamydata.dat ;

Variable:

Names are female x3 x1 y x2;

Missing are all (-9999) ;
grouping is female (0 = male 1 = female);
Analysis:
Type = general ;
Model:
y on x1 x2 x3;

We have omitted most of the Mplus output file. To download the entire file click [here](#). Below is the MODEL RESULTS section for males and females (the output for males appears first, followed by the output for females). Comparing the regression coefficients (denoted ON), the intercept and the residual variances, we see that none of these coefficients are constrained to equality by default.

MODEL RESULTS

Two-Tailed

Estimate S.E. Est./S.E. P-Value

Group MALE

Y ON

X1 0.352 0.105 3.365 0.001

X2 0.050 0.089 0.560 0.575

X3 0.450 0.105 4.307 0.000

Intercepts

Y 8.205 4.798 1.710 0.087

Residual Variances

Y 55.518 8.231 6.745 0.000

Group FEMALE

Y ON

X1 0.453 0.102 4.455 0.000

X2 0.046 0.084 0.546 0.585

X3 0.211 0.098 2.161 0.031

Intercepts

Y 13.632 3.958 3.444 0.001

Residual Variances

Y 43.290 5.864 7.382 0.000