



KUANT Guides

Additional Parameters:

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Geldhof, G.J., Selig, J.P. & McConnell, E.K. (2008)

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Additional Parameters

It is sometimes necessary to have LISREL create a customized parameter, such as when two mediators (M_1 and M_2) simultaneously mediate the separate paths between two other variables (X and Y). Simply using the EF option is inadequate in this scenario because EF will only calculate the total indirect effect of X on Y, without any information about the individual pathways.

To calculate the unique mediation paths of X on Y, create two additional parameters that are the product of the latent regression coefficients involved in each mediated path. Simply add "AP = *<number>*" to the MO line, where *<number>* is the number of custom parameters that you wish to include in your model. In this case we will create two additional parameters. The custom parameters must then be constrained to equal some mathematical result of other parameters.

In the below example, there are custom parameters (AP=2), with values equal to the product of two latent regression coefficients [$BE(2,1) * BE(4,2)$] and [$BE(3,1) * BE(4,3)$]:

```
MO NY=12 NE=4 LY=FU,FI PS=SY,FI TE=DI,FI BE=FU,FI AP=2
CO PA(1) = BE(2,1) * BE(4,2)
CO PA(2) = BE(3,1) * BE(4,3)
```

When the syntax is run, an additional section is added to the output, appearing just below the "Squared Multiple Correlations for Y-Variables." This section, entitled "Additional Parameters," provides the parameter estimate and standard error for the mediation paths specified above.

The creation of a custom parameter is especially useful when using bootstrapped data. LISREL's PV option does not intrinsically output indirect effects, but additional parameters are. Additional parameters can therefore be used to create confidence intervals around a mediated pathway.

Additional parameters are also useful when using constrained parameters, such as when the effects coding method of identification is used. This is because constrained estimates are not outputted by the PV option. To output constrained estimates, the user must create a series of additional parameters and constrain these in the same way that the model-relevant parameters were constrained.

Caveat

Additional parameters should be constrained within each group when multiple groups are present within a model. This allows APs to be selectively dropped alongside nonsignificant regression paths (BEs) within individual groups.