

STRUCTURAL MODEL

Two-step approach – step two

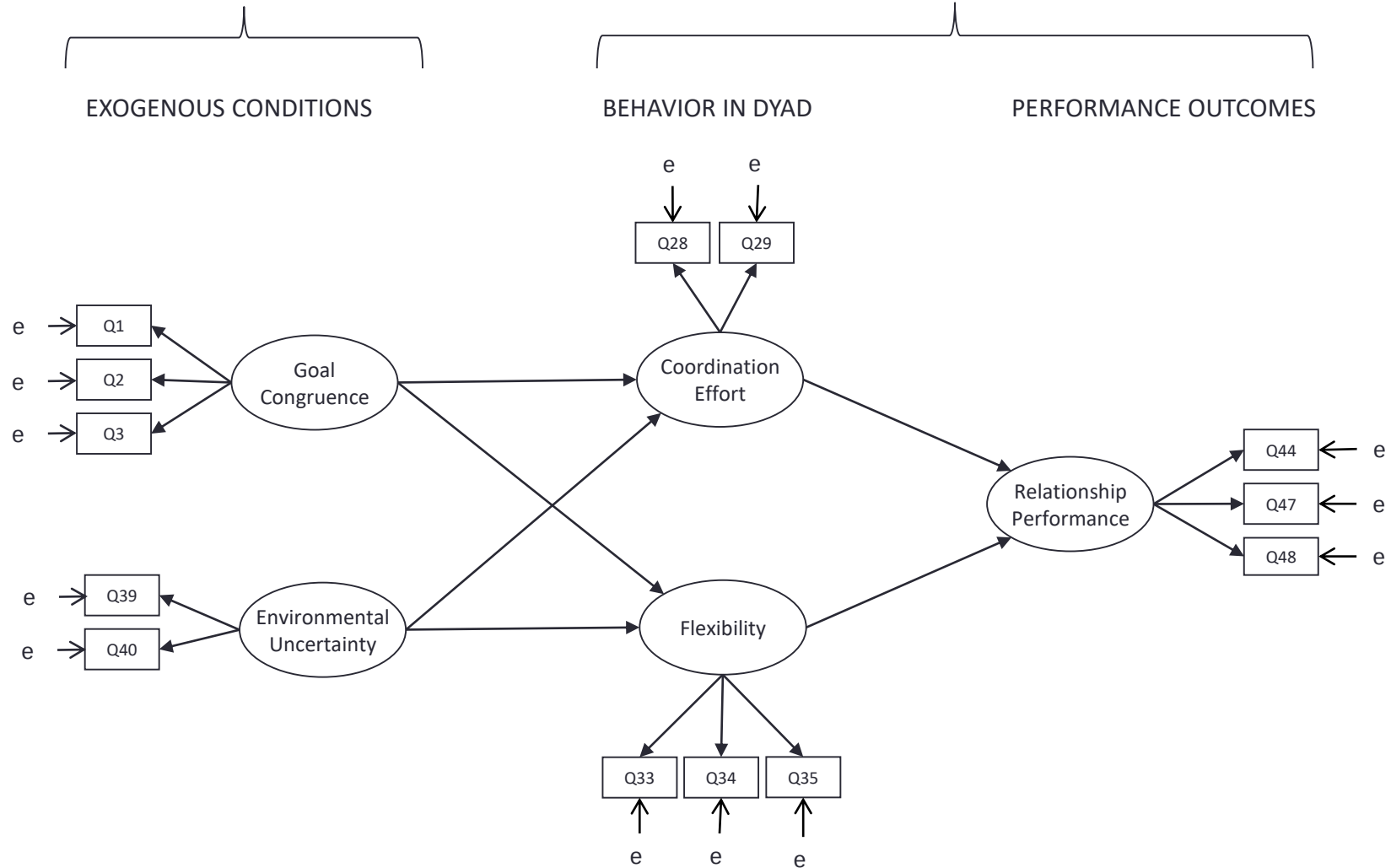
Structural Model

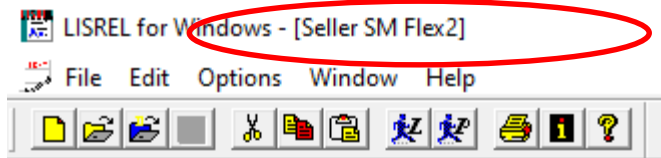
- This tests our theory through specifying the structural relationships.
- We take the supported measurement model and use it for the structural model.

Example of SEM Model

Exogenous Variables

Endogenous Variables

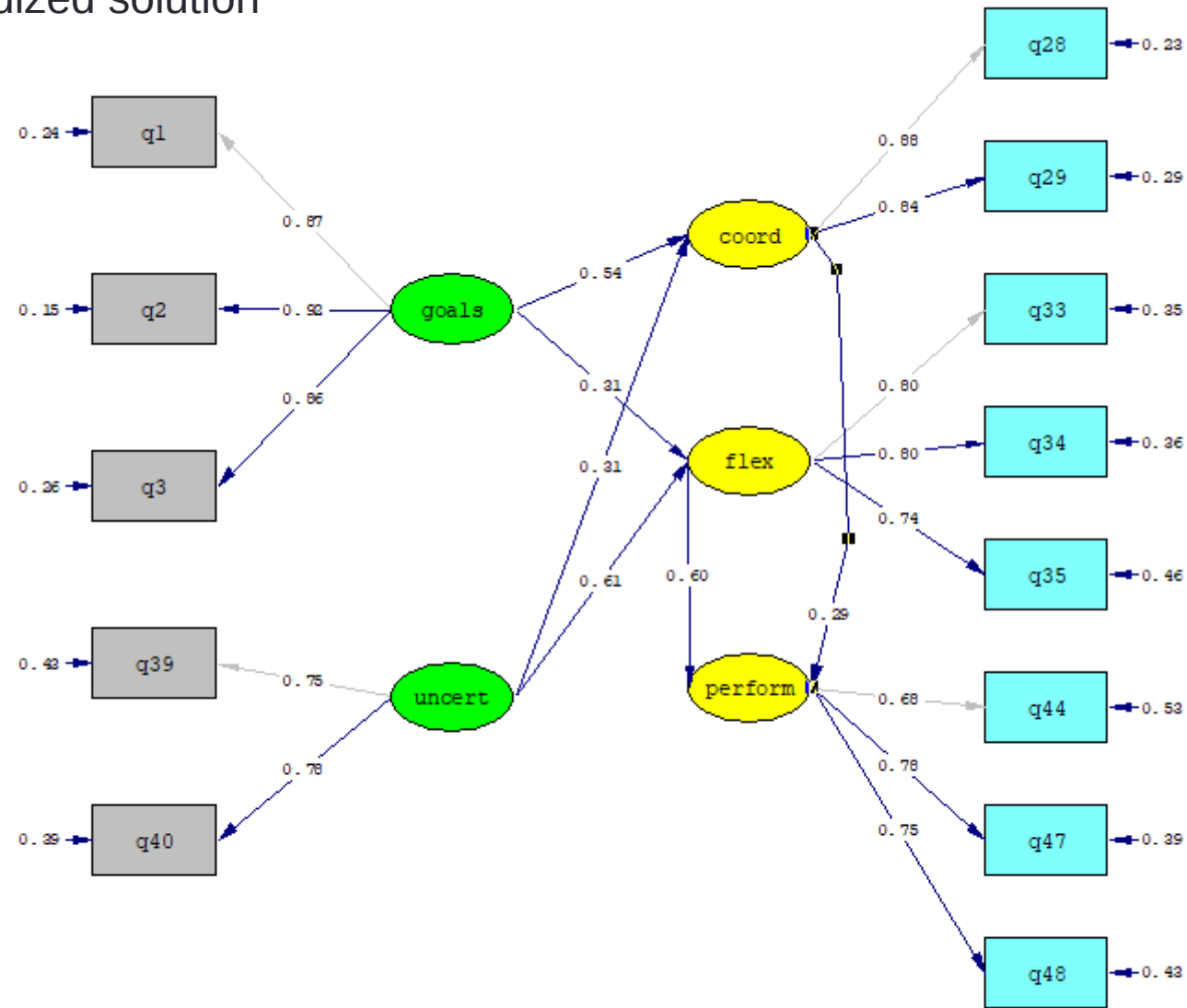




The input file.

Syntax for the structural relationships.

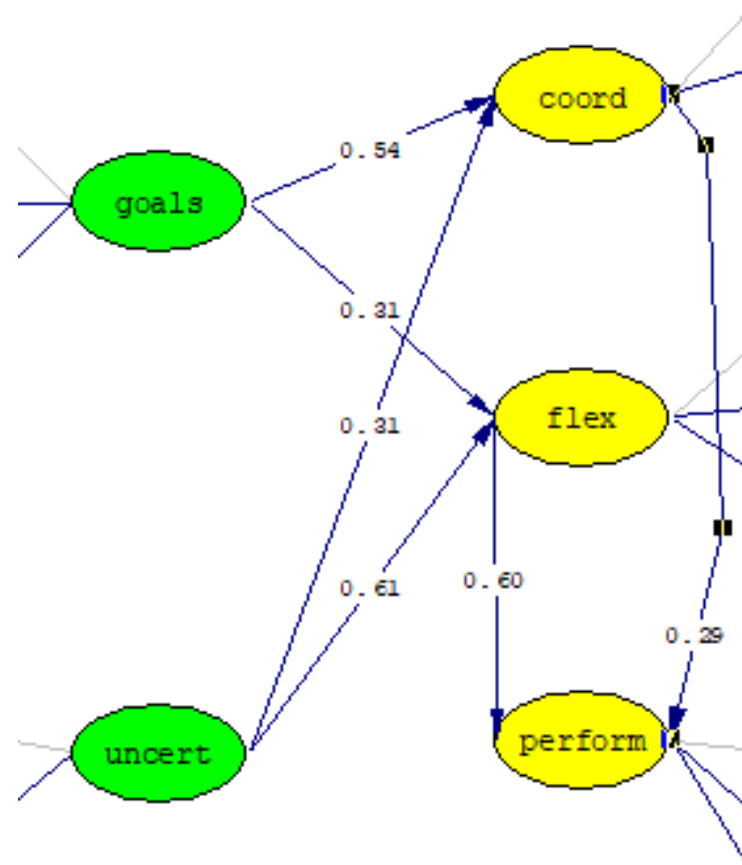
Standardized solution



Chi-Square=66.24, df=58, P-value=0.21402, RMSEA=0.022

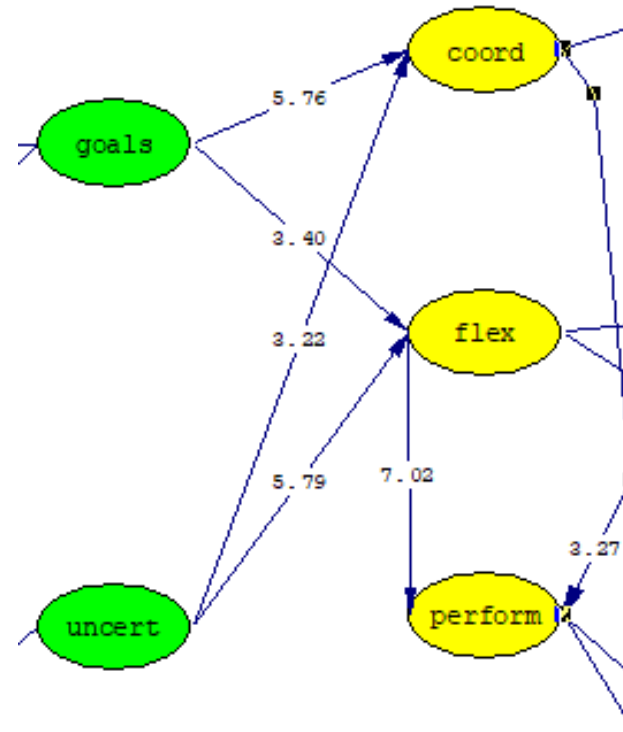
Standardized solution

The measures have been validated in the measurement model, so concentrate on the structural relationships and model fit.



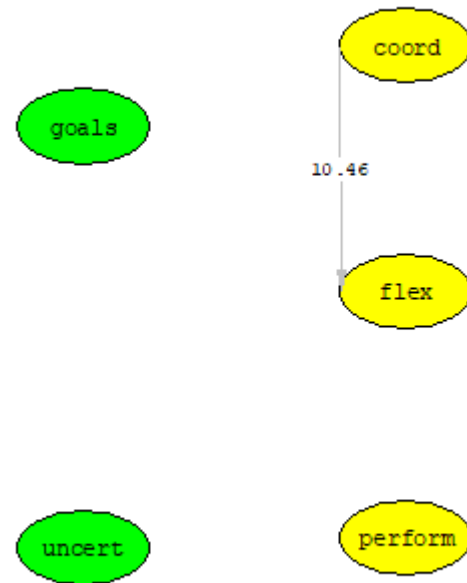
t-values

Model fit is excellent and all the factor loadings are significant, so we could stop here.



Chi-Square=66.24, df=58, P-value=0.21402, RMSEA=0.022

Modification indices

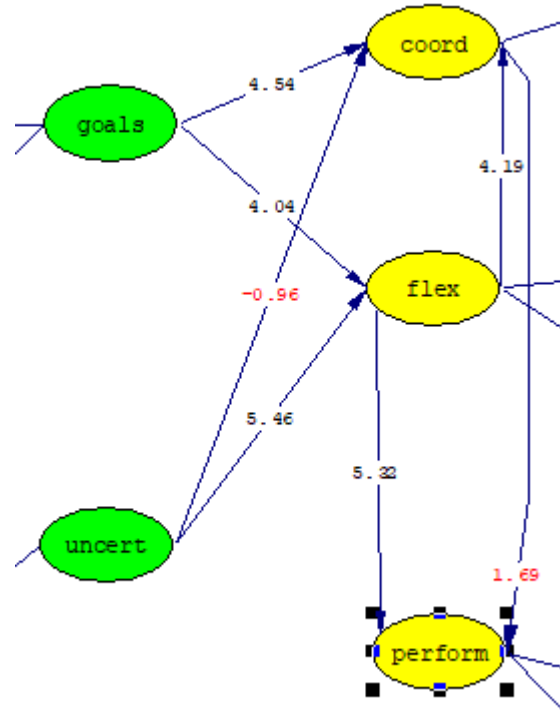


According to the modification indices, we could improve model fit by adding a path from coord to flex. Do we?

Are we chasing model fit or is there theoretical justification for adding the path?

Competing models approach

t-values



Chi-Square=50.12, df=57, P-value=0.72866, RMSEA=0.000

New model

I add the path and model fit improves. It is a statistically significant improvement using the chi2 difference test. However, two of my original paths become insignificant.

Is this a better model?

Is this a better theory?

Chi square difference test

$$66.24 - 50.12 = 16.12$$

$$58 - 57 = 1$$

Chi2 table 1 df cutoff value is 3.841 (significance level 5%)

$16.12 > 3.841$, so the model improvement is statistically significant.

Chi-Square=66.24, df=58, P-value=0.21402, RMSEA=0.022

Old model