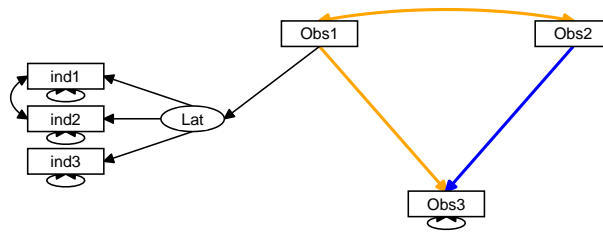


Steps to Fitting a Model in lavaan

1. Draw your model on a piece of paper!

Color any paths you may be interested in.



2. Write out your model specification

Remember to use modifiers and to set fixed values where you need to!

Don't forget lavaan's defaults:

1. Loading to first indicator is fixed at 1.
2. All covariances between latent variables are estimated.
3. All error terms are estimated.

2.1. Identify each latent variable by its indicators (=~)

```
Lat =~ ind1 + ind2 + ind3
```

2.2. Predict each endogenous variable with a regression formula (~)

... according to its *incoming* arrows.

```
Lat ~ Obs1
Obs3 ~ b * Obs1 + c * Obs2
```

2.3. Estimate co/variances (~~) for each two headed arrow

These include *auto-correlations*, and possibly any *error / disturbances / uniqueness variances*.

```
Obs1 ~~ a * Obs2
ind1 ~~ ind2
```

```
Lat ~~ 0 * Lat
```

2.4. Define any computed parameters (:=)

(paths, differences, simple slopes, etc.)

```
indirect_path := a * b
direct_path := c
total := indirect_path + direct_path
```

2.5. Don't forget to add self-regressors

... if you have any covariances between **latent** and **observed** variables.

(You can also use single-indicator latent variables instead.)

3. Fit the model (sem() / cfa() / growth() / lavaan())

4. Plot your model and look at the parameter table

Make sure there are no missing (or too many) arrows / parameters!

5. Carry on...

Asses fit, test hypotheses, compare models...