Title

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sem estimation options — Options affecting estimation

Syntax Description Options Remarks and examples Also see

Syntax

```
sem paths ..., ... estimation_options
```

estimation_options	Description
`method(`*method*`)`	*method* may be `ml`, `mlmv`, or `adf`
`vce(`*vcetype*`)`	*vcetype* may be `oim`, `eim`, `opg`, `robust`, `cluster` *clustvar*, `bootstrap`, or `jackknife`
`nm1`	compute sample variance rather than ML variance
`noxconditional`	compute covariances, etc., of observed exogenous variables
`allmissing`	for use with `method(mlmv)`
`noivstart`	skip calculation of starting values
`noestimate`	do not fit the model; instead show starting values
maximize_options	control maximization process for specified model; seldom used
`satopts(`*maximize_options*`)`	control maximization process for saturated model; seldom used
`baseopts(`*maximize_options*`)`	control maximization process for baseline model; seldom used

Description

These options control how results are obtained.

Options

`method()` and `vce()` specify the method used to obtain parameter estimates and the technique used to obtain the variance–covariance matrix of the estimates. See [SEM] **sem option method( )**.

`nm1` specifies that the variances and covariances used in the SEM equations be the sample variances (divided by $N - 1$) and not the asymptotic variances (divided by N). This is a minor technical issue of little importance unless you are trying to match results from other software that assumes sample variances. `sem` assumes asymptotic variances.

`noxconditional` states that you wish to include the means, variances, and covariances of the observed exogenous variables among the parameters to be estimated by `sem`. See [SEM] **sem option noxconditional**.

`allmissing` specifies how missing values should be treated when `method(mlmv)` is also specified.

Usually, `sem` omits from the estimation sample observations that contain missing values of any of the observed variables used in the model. `method(mlmv)`, however, can deal with these missing values, and in that case, observations containing missing are not omitted.

Even so, `sem, method(mlmv)` does omit observations containing `.a`, `.b`, ..., `.z` from the estimation sample. `sem` assumes you do not want these observations used because the missing value is not missing at random. If you want `sem` to include these observations in the estimation sample, specify the `allmissing` option.

noivstart is an arcane option that is of most use to programmers. It specifies that sem is to skip efforts to produce good starting values with instrumental-variable techniques, techniques that require computer time. If you specify this option, you should specify all the starting values. Any starting values not specified will be assumed to be 0 (means, path coefficients, and covariances) or some simple function of the data (variances).

noestimate specifies that the model is not to be fit. Instead, starting values are to be shown and they are to be shown using the coeflegend style of output. An important use of this is to improve starting values when your model is having difficulty converging. You can do the following:

```
. sem ..., ... noestimate
. matrix b = e(b)
. ... (modify elements of b) ...
. sem ..., ... from(b)
```

maximize_options specify the standard and rarely specified options for controlling the maximization process for sem; see [R] **maximize**. The relevant options for sem are difficult, technique(*algorithm_spec*), iterate(#), [no]log, trace, gradient, showstep, hessian, tolerance(#), ltolerance(#), and nrtolerance(#).

satopts(*maximize_options*) is a rarely specified option and is only relevant if you specify the method(mlmv) option. sem reports a test for model versus saturated at the bottom of the output. Thus sem needs to obtain the saturated fit. In the case of method(ml) or method(adf), sem can make a direct calculation. In the other case of method(mlmv), sem must actually fit the saturated model. The maximization options specified inside satopts() control that maximization process. It is rare that you need to specify the satopts() option, even if you find it necessary to specify the overall *maximize_options*.

baseopts(*maximize_options*) is a rarely specified option and an irrelevant one unless you also specify method(mlmv) or method(adf). When fitting the model, sem records information about the baseline model for later use by estat gof, should you use that command. Thus sem needs to obtain the baseline fit. In the case of method(ml), sem can make a direct calculation. In the cases of method(mlmv) and method(adf), sem must actually fit the baseline model. The maximization options specified inside baseopts() control that maximization process. It is rare that you need to specify the baseopts() option even if you find it necessary to specify the overall *maximize_options*.

Remarks and examples

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The most commonly specified option among this group is vce(). See [SEM] **sem option method()**, [SEM] **intro 8**, and [SEM] **intro 9**.

Also see

[SEM] **sem** — Structural equation model estimation command

[SEM] **sem option method()** — Specifying method and calculation of VCE

[SEM] **sem option noxconditional** — Computing means, etc., of observed exogenous variables

[SEM] **intro 8** — Robust and clustered standard errors

[SEM] **intro 9** — Standard errors, the full story