Obtaining classes using the REBUS method with XLSTAT-PLSPM

PLSPM_ECSI_REBUS.ppm

REBUS method for PLS path modeling

XLSTAT is the first software to offer the REBUS segmentation approach (REsponse-Based procedure for detecting Unit Segments in PLS path modeling) in the framework of PLS Path Modeling introduced by Esposit Vinzi et al. (2008).

In this tutorial, we present an application of the REBUS approach when a path model is defined. If you are not familiar with PLS Path Modeling, please refer to the tutorial: "Creating and running a basic XLSTAT-PLSPM project"

More detailed explanations are available in the help of XLSTAT.

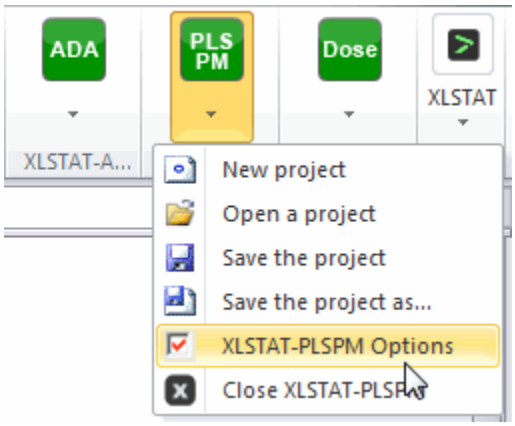
Applying the REBUS method with XLSTAT-PLSPM

Dataset to apply the REBUS method for PLS path modeling

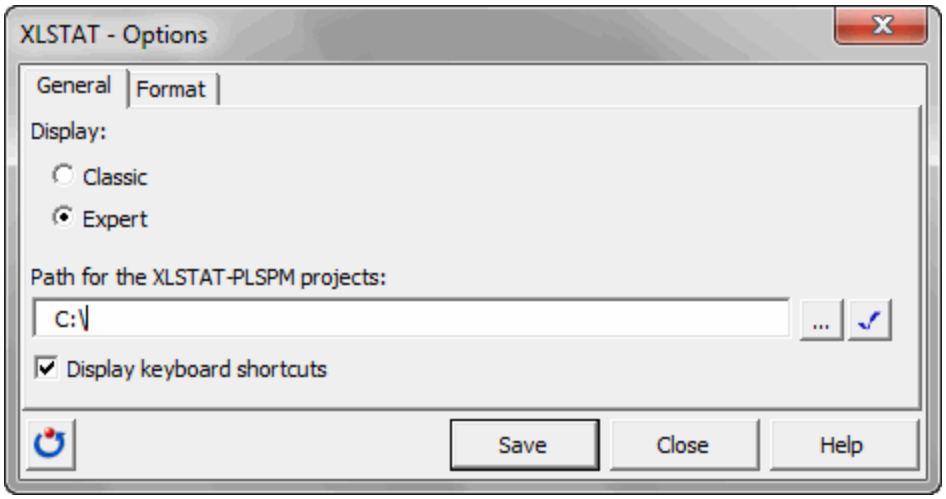
We will use the same data as in the general tutorial on how to use XLSTAT-PLSPM. It is based on the ECSI model with a sample of 250 observations. The new file can be downloaded here.

Setting up the REBUS method for PLS path modeling

First of all, you have to switch to the expert display. In the **XLSTAT-PLSPM** menu, click on **XLSTAT-PLSPM** options.

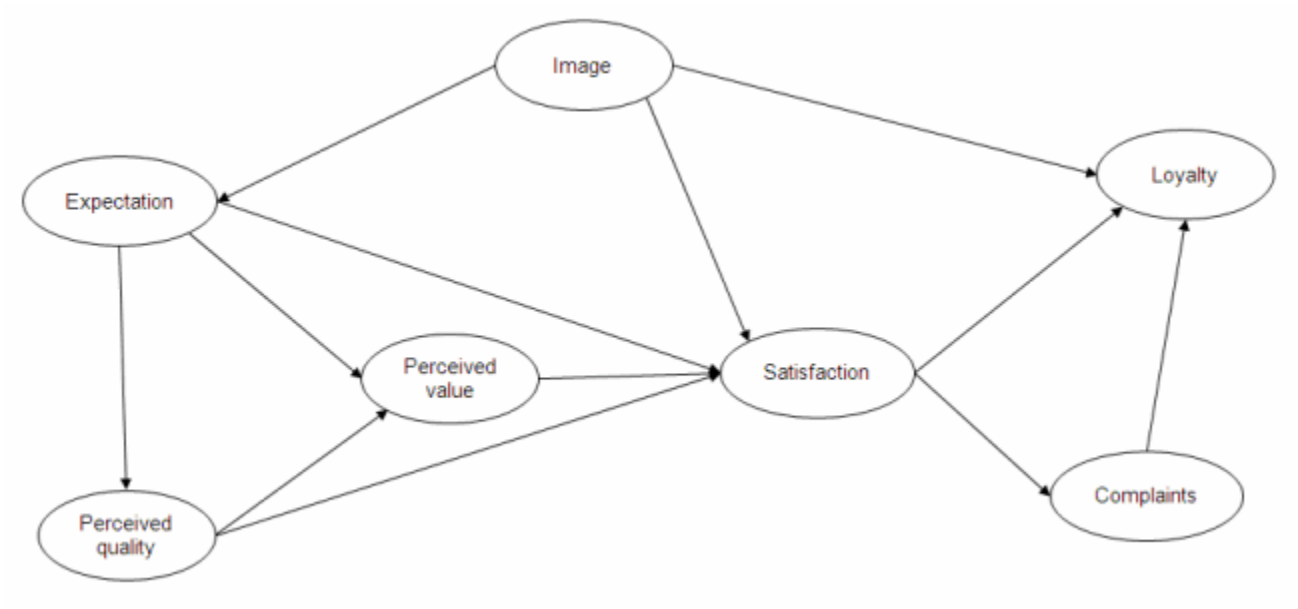


This dialog box appears:

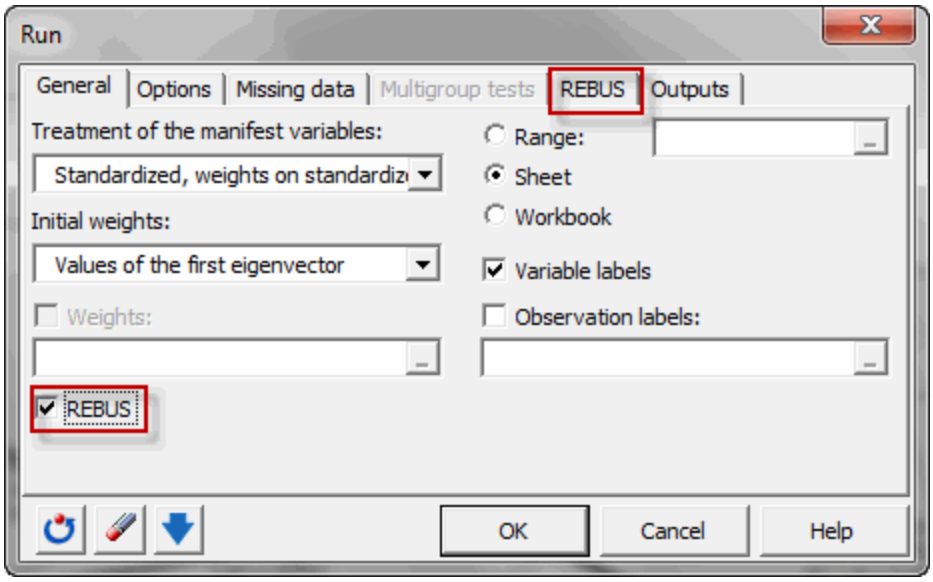


Select the expert display and save your settings.

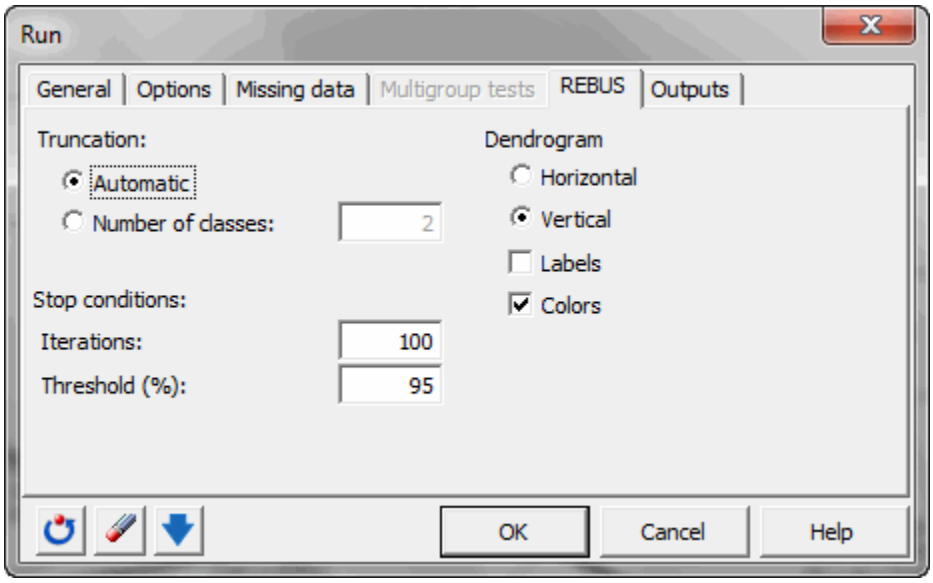
As in the general tutorial build the ECSI model using the PLSPMGraph sheet and the "Path Modeling" toolbar.



Click on **run** in the **path modeling** toolbar. Activate the REBUS option in the general tab. A new tab called **REBUS** has appeared:



Select the automatic truncation. The number of classes is defined automatically during the cluster analysis. The chosen threshold is 95 %, this means the algorithm has converged when more than 95 % of the units stay in the same class from one iteration to another.

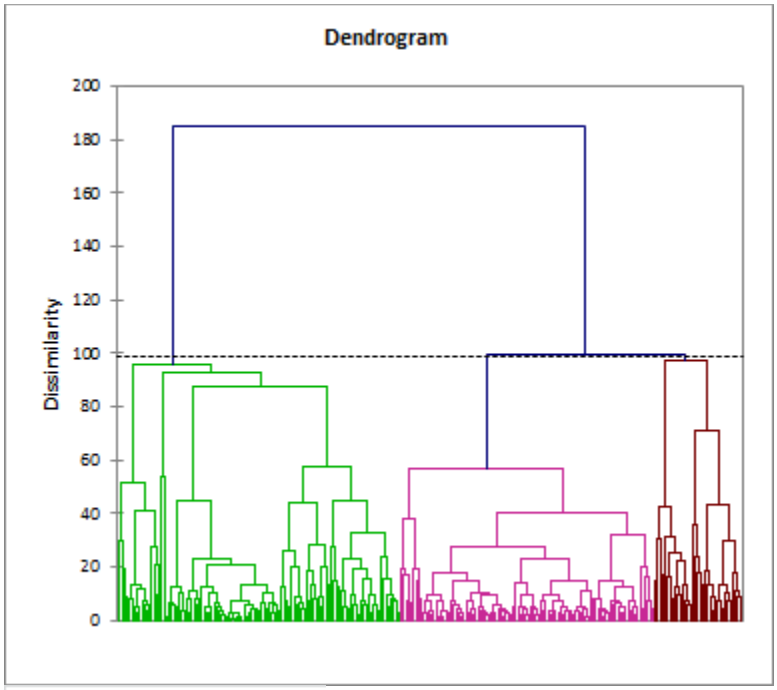


Results and outputs of the REBUS method with XLSTAT-PLSPM

If the REBUS option is selected:

- Worksheet REBUS: Details of the REBUS algorithm are displayed.
- Worksheet PLSPM(Class): For each Class, complete results are displayed in separated worksheets.

The first sheet contains the details of the REBUS algorithm, the dendogram, the class associated to each observation and the CM index for each unit and each class.



Class for each observation:

Observation	Class
Obs1	2
Obs2	2
Obs3	2
Obs4	2
Obs5	2
Obs6	1
Obs7	2
Obs8	1
Obs9	2
Obs10	2
Obs11	1
Obs12	2
Obs13	1
Obs14	1
Obs15	1

The three other sheets can be analyzed independently using the general method described in the XLSTAT-PLSPM tutorial.

Three classes were obtained. Each class of units has a different behaviour with respect to the ECSI model.
In class 1, satisfaction is mainly explained by perceived quality and satisfaction and image have a similar effect on loyalty. In class 2, satisfaction is also explained by perceived quality but

image has a non-significant effect on loyalty. In class 3, all explaining latent variable of satisfaction and loyalty are similar.

We could also apply multi-group comparisons on the obtained classes.