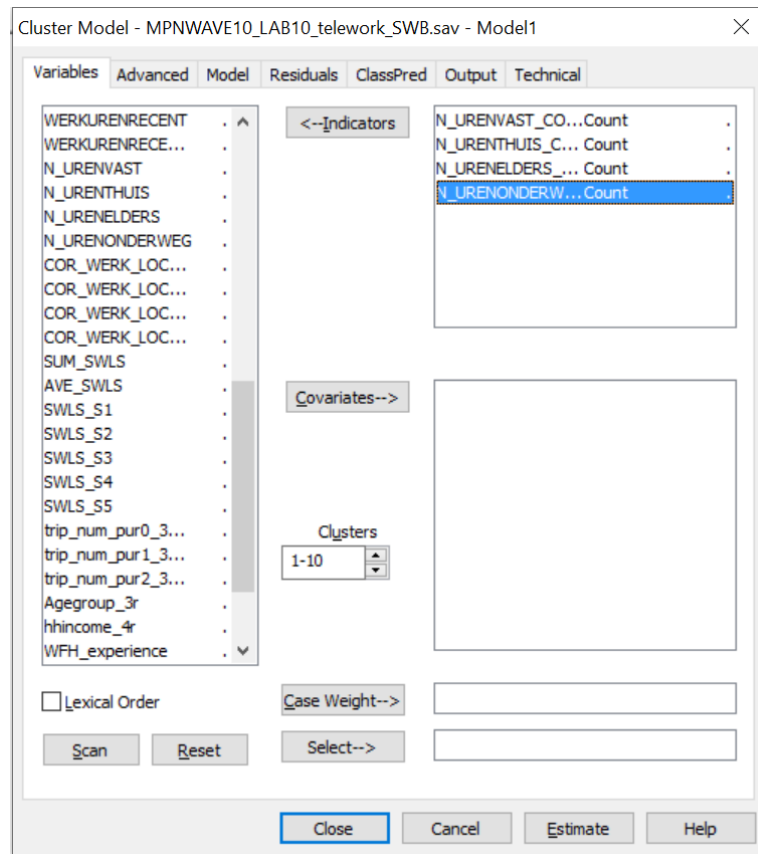


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## Instructions for LatentGold 3-step Model

### Step 1: Identifying the optimal number of clusters: Run the model with 1-10 clusters

- (1) The attributes to be selected are: "N\_URENVAST\_CONTINU";  
"N\_URENTHUIS\_CONTINU"; "N\_URENELDERS\_CONTINU";  
"N\_URENONDERWEG\_CONTINU";<sup>1</sup>



- (2) Compare the outcomes and select the best number of clusters

The models are compared by statistical criteria (e.g., their BIC value, number of parameters, class error) and theoretical interpretability (see Section 3.5 for more details). We select 7 clusters as the optimal number.

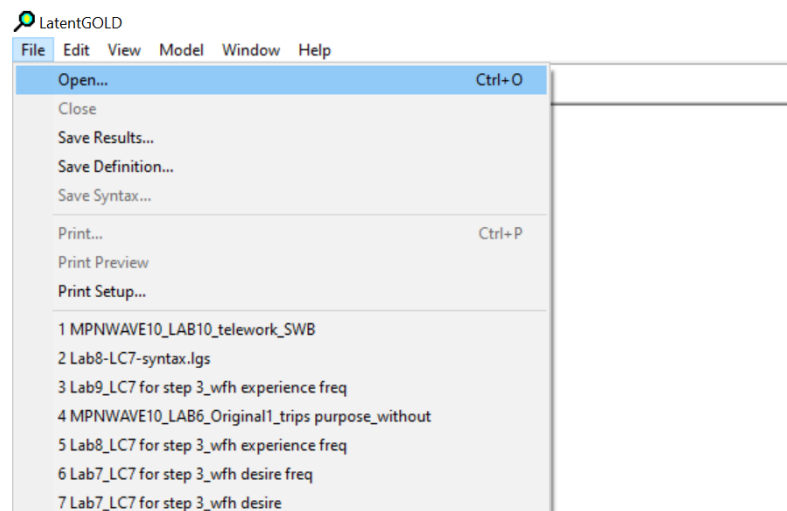
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<sup>1</sup> Note: All variable names are defined in the accompanying codebook.

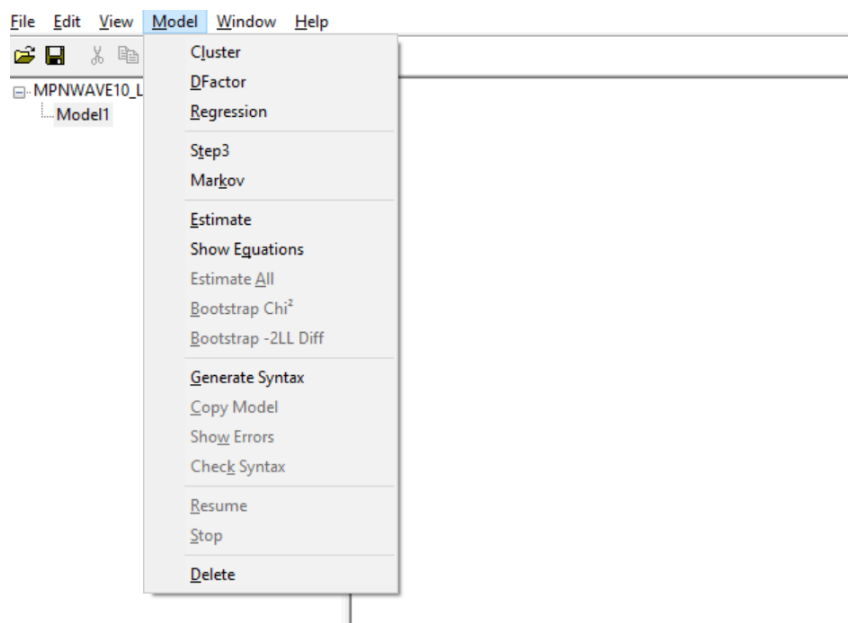
		LL	BIC(LL)	Npar	L <sup>2</sup>	df	p-value	Class.Err.
Model1	1-Cluster	-44812,1246	89654,8154	4	67893,2189	2079	9,8e-12722	0,0000
Model2	2-Cluster	-30188,7062	60446,1866	9	38646,3823	2074	3,6e-6628	0,0067
Model3	3-Cluster	-24654,8186	49416,6191	14	27578,6070	2069	1,9e-4379	0,0116
Model4	4-Cluster	-22096,2139	44337,6175	19	22461,3975	2064	5,8e-3363	0,0149
Model5	5-Cluster	-20512,9996	41209,3967	24	19294,9689	2059	7,7e-2746	0,0119
Model6	6-Cluster	-19204,0338	38629,6730	29	16677,0375	2054	9,2e-2245	0,0116
Model7	7-Cluster	-18432,6978	37125,2088	34	15134,3654	2049	3,5e-1955	0,0131
Model8	8-Cluster	-17769,6599	35837,3408	39	13808,2896	2044	4,6e-1710	0,0190
Model9	9-Cluster	-17435,6335	35207,4958	44	13140,2367	2039	5,3e-1589	0,0187
Model10	10-Cluster	-17134,6023	34643,6412	49	12538,1743	2034	5,5e-1481	0,0254
Model11	0-Cluster							

## Step 2: Producing the classification model

- (1) Open the filtered source dataset based on MPN dataset 2022 (refer to <https://www.mpndata.nl/> )

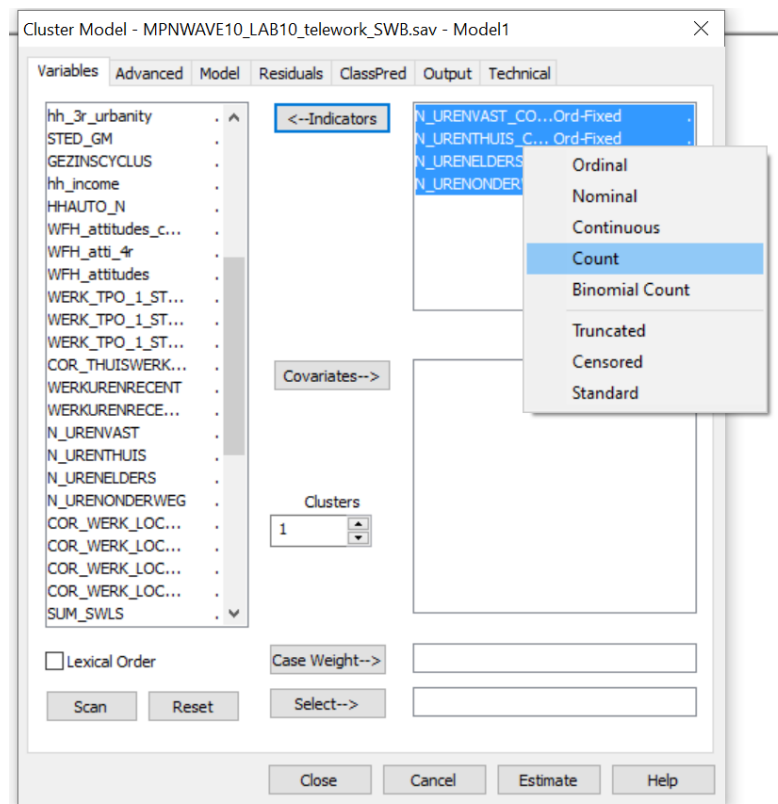


- (2) Go to Model -> Cluster



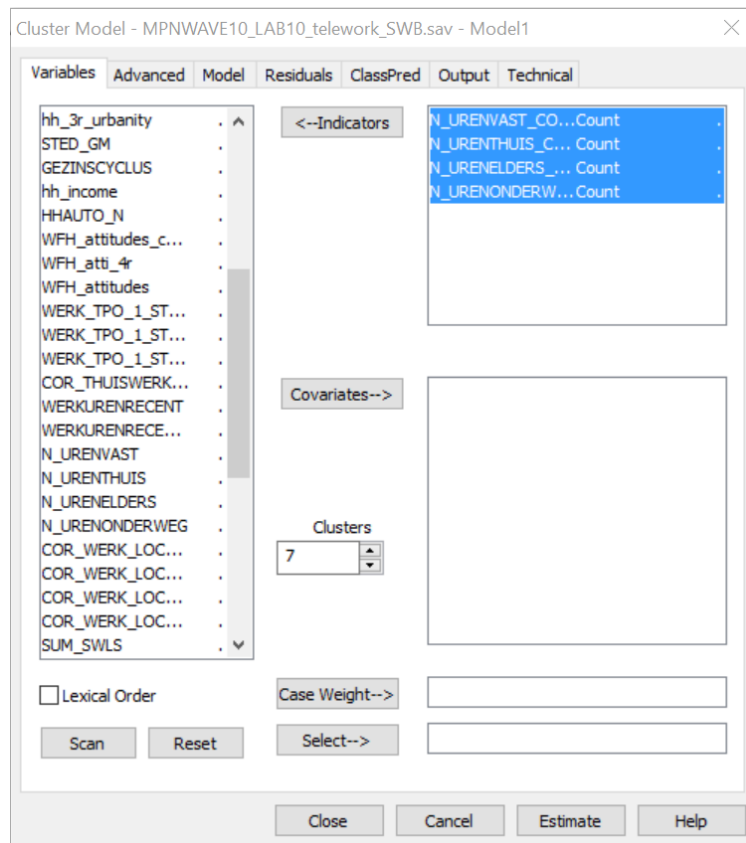
(3) Select Indicators (attributes) and set them all to “count”

The indicators to be selected are: "N\_URENVAST\_CONTINU";  
"N\_URENTHUIS\_CONTINU"; "N\_URENELDERS\_CONTINU";  
"N\_URENONDERWEG\_CONTINU".

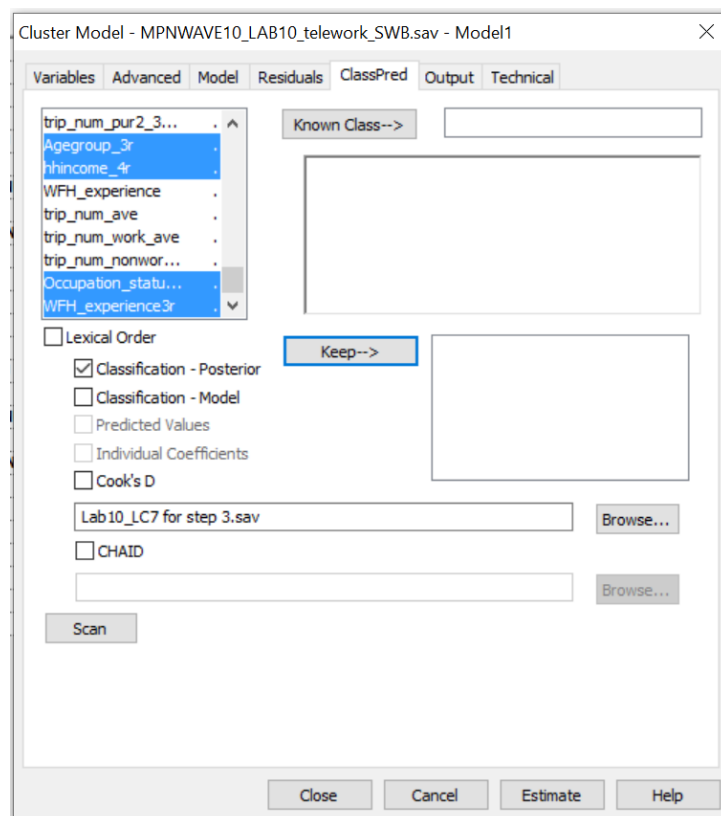


Note: Latent GOLD supports various variable types, including nominal, ordinal, continuous, and count variables. In this study, teleworking hours across different locations were entered as non-negative integers, so they were specified as a count variable. This choice ensures the model uses appropriate and efficient statistical methods for count data, leading to more accurate results.

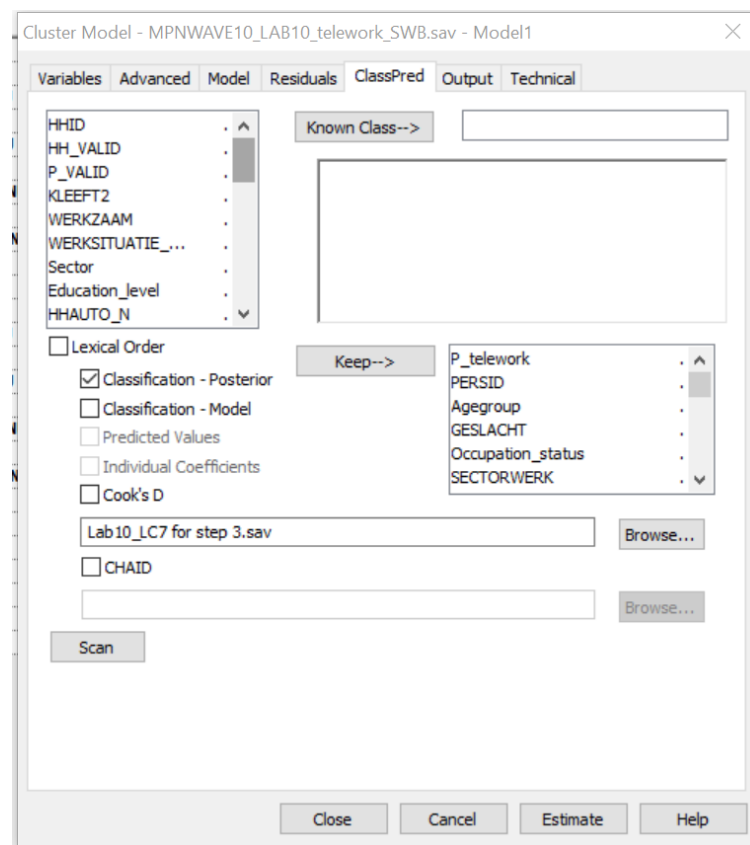
(4) Set the number of clusters to 7 (i.e., the optimum number of classes we identify in Step 1)



- (5) Go to ClassPred, select Classification- Posterior, and give a name to the output file (which will contain the posterior probabilities)



(6) Select the covariates and press Keep



(7) Go to Technical, keep the default values except the following:

Cluster Model - MPNWAVE10\_LAB10\_telework\_SWB.sav - Model1

Variables Advanced Model Residuals ClassPred Output Technical

Convergence Limits  
 EM Tolerance 0,01  
 Tolerance 1e-008

Iteration Limits  
 EM 250  
 Newton-Raphson 50

Start Values  
 Random Sets 16  
 Iterations 50  
 Seed 0  
 Tolerance 1e-005

Bayes Constants  
 Latent Variables 0  
 Categorical Variables 1  
 Poisson Counts 1  
 Error Variances 1

Missing Values  
 Exclude Cases ☒  
 Include Indicators/Dependent ☐  
 Include All ☐

Bootstrap  
 Replications 500  
 Seed 0

Threads  
 Maximum Threads all

Continuous Factors  
 Number of Nodes 10

Restore to Defaults Save as Default Cancel Changes

Close Cancel Estimate Help

## (8) Estimate Model

Cluster Model - MPNWAVE10\_LAB10\_telework\_SWB.sav - Model1

Variables Advanced Model Residuals ClassPred Output Technical

Known Class-->

Keep-->

P\_telework  
 PERSID  
 Agegroup  
 GESLACHT  
 Occupation\_status  
 SECTORWERK

Lab10\_LC7 for step 3.sav Browse...

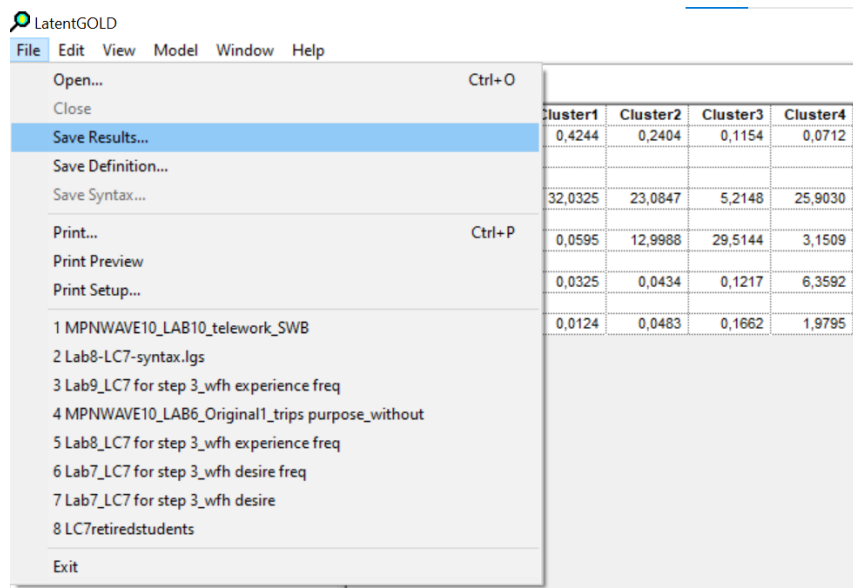
CHAID Browse...

Scan

Close Cancel Estimate Help

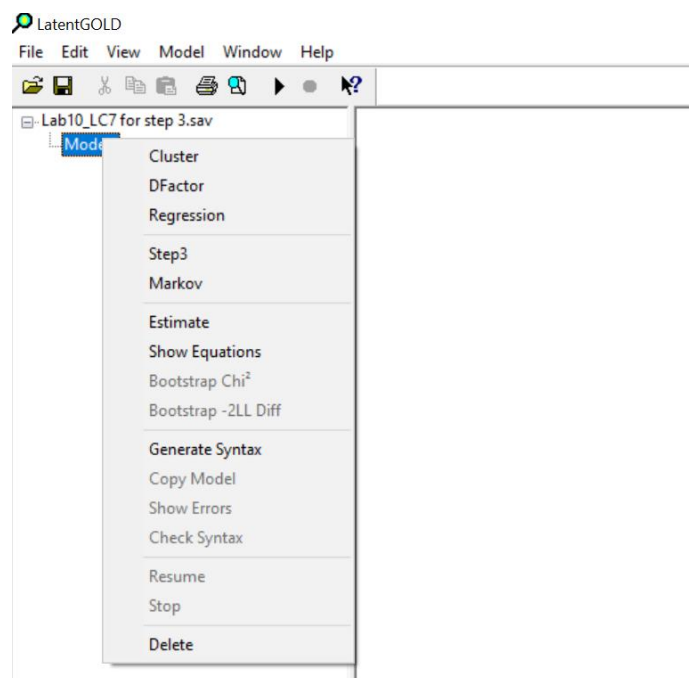
	Cluster1	Cluster2	Cluster3	Cluster4	Cluster5	Cluster6	Cluster7
Cluster Size	0,4244	0,2404	0,1154	0,0712	0,0532	0,0523	0,0431
Indicators							
N_URENVAST_CONTINU							
Mean	32,0325	23,0847	5,2148	25,9030	4,9325	9,4640	1,7151
N_URENTHUIS_CONTINU							
Mean	0,0595	12,9988	29,5144	3,1509	0,6041	17,9492	1,4548
N_URENELDERS_CONTIN							
Mean	0,0325	0,0434	0,1217	6,3592	0,2322	8,3311	28,5947
N_URENONDERWEG_CON							
Mean	0,0124	0,0483	0,1662	1,9795	0,0815	1,4454	0,1420

(9) You can save the results and definition by going to File -> Save results or Save definition



### Step 3: Exploring the independent effect of telework arrangements on subjective well-being by controlling covariates

- (1) Open the classification model output (Lab10\_LC7 for step 3.sav), and generate syntax



- (2) Write the syntax to examine the independent effect of telework arrangements on subjective well-being while controlling covariates

```

Options # Technical parameters set by default
maxthreads=8;
algorithm
  tolerance=1e-008 emtolerance=0,01 emiterations=250 nriterations=50;
startvalues
  seed=0 sets=16 tolerance=1e-005 iterations=50;
bayes
  categorical=1 variances=1 latent=0 poisson=1;
montecarlo
  seed=0 sets=0 replicates=500 tolerance=1e-008;
quadrature nodes=10;
missing excludeall;
step3 proportional ml;
output
  parameters=first betaopts=wl standarderrors=robust profile=posterior
  probmeans=posterior estimatedvalues=model;
variables # Define independent and dependent variables
# Independent variables
independent Agegroup_3r nominal, GESLACHT nominal, Education_level
nominal, hh_3r_urbanity nominal,
  GEZINSCYCLUS nominal, hhincome_4r nominal, Occupation_status
nominal, Sector nominal;
# Dependent variables
dependent SUM_SWLS continuous;
# Latent variable (clusters/classes from Step 2 posterior probabilities):
latent Cluster nominal posterior = ( clu#1 clu#2 clu#3 clu#4 clu#5
clu#6 clu#7) ;
equations
# Specify the direct effects of socio-demographic variables on latent class
membership
Cluster <- 1 + Agegroup_3r + GESLACHT + Education_level + hh_3r_urbanity
+ GEZINSCYCLUS + hhincome_4r + Occupation_status + Sector;
# Specify the direct effects of socio-demographic variables and latent classes on
subjective well-being
SUM_SWLS <- 1 + cluster + Agegroup_3r + GESLACHT + Education_level +
hh_3r_urbanity + GEZINSCYCLUS + hhincome_4r + Occupation_status + Sector;

```

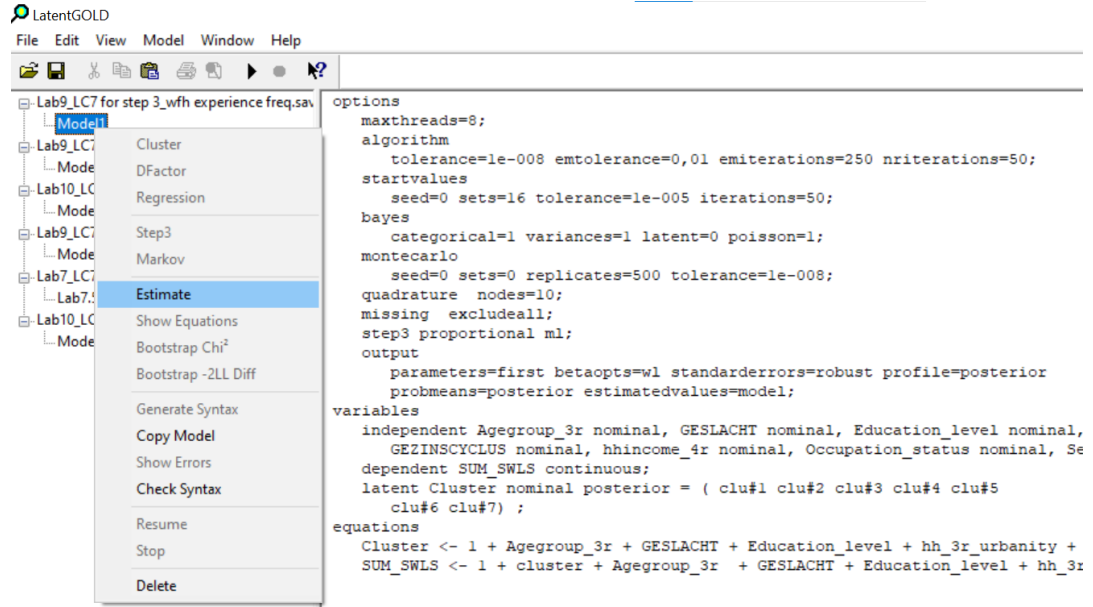
Note:

(2.1) Classification type. Because our indicators include both nominal and continuous variables, select ML to reduce biases.

(2.2) We had initially added all covariates (*Agegroup\_3r*, *GESLACHT*, *Education\_level*, *hh\_3r\_urbanity*, *GEZINSCYCLUS*, *hhincome\_4r*, *Occupation\_status*, *Sector*). The covariates found to be significant in our final model are: "*Agegroup\_3r*"; "*Education\_level*"; "*GEZINSCYCLUS*"; "*hhincome\_4r*".



### (3) Click on 'Estimate'



### (4) You can save the results and syntax by going to File -> Save results or Save syntax

