

## Exercise 1

Using the data provided (`exercise-1.sas`), fit a 4-class latent class model for marijuana use and attitudes using 7 indicators of the latent class variable. Use 4893 as the random seed. Interpret all parameters in the model.

The variables in `exercise-1.sas` are shown on the next page.

### Optional (advanced SAS programming):

Plot the item-response probabilities using the SAS macro `LCAGraphicsV1.sas`. The macro has a user's guide that describes its use.

*Hints:*

- (1) Save the macro file to your hard drive.
- (2) Specify that path in an `%include` statement prior to running LCA.
- (3) Execute the macro using the following syntax after running LCA:  
**`%ItemResponsePlot`**(`ParamDataset=filename`) ;

|          |   |          |   |
|----------|---|----------|---|
| LIFETIME | Frequency of marijuana use over participant's lifetime<br>1 = use<br>2 = no use                                 | POL_BLF1 | Political beliefs (conservative)<br>0 = not conservative<br>1 = conservative<br>((0,0) is liberal)                                |
| PREV_YR  | Frequency of marijuana use over the previous year<br>1 = use<br>2 = no use                                      | POL_BLF2 | Political beliefs (moderate)<br>0 = not moderate<br>1 = moderate<br>((0,0) is liberal)  |
| PREV_MO  | Frequency of marijuana use over the previous month<br>1 = use<br>2 = no use                                     | RLG_IMP1 | Importance of religious beliefs (not important)<br>0 = important to some degree<br>1 = not important<br>((0,0) is very important) |
| NEXT_MO  | How likely it is that the participant will use marijuana in the next year<br>1 = will use<br>2 = will not use   | RLG_IMP2 | Importance of religious beliefs (important)<br>0 = not important or very important<br>1 = important<br>((0,0) is very important)  |
| APRV_TRY | Does participant disapprove of people trying marijuana one or twice<br>1 = do not disapprove<br>2 = disapprove  | SKP_CLS  | Number of skipped classes<br>(0-25)   |
| APRV_OCC | Does participant disapprove of people smoking marijuana occasionally<br>1 = do not disapprove<br>2 = disapprove | GRADE    | Grades (on average, percent)<br>(60-100)  |
| APRV_REG | Does participant disapprove of people smoking marijuana regularly<br>1 = do not disapprove<br>2 = disapprove    | GOOUT    | Number of evenings out per week on average (0-7)  |
| SEX      | Gender<br>0 = male<br>1 = female  | YEAR     | Survey year<br>1 = 1999<br>2 = 2000<br>3 = 2001   |
| RACE     | Race/Ethnicity<br>0 = white<br>1 = non-white  |          |   |