Course 7 Understanding and Modelling Measurement Error in Social Surveys

Exercises Thursday

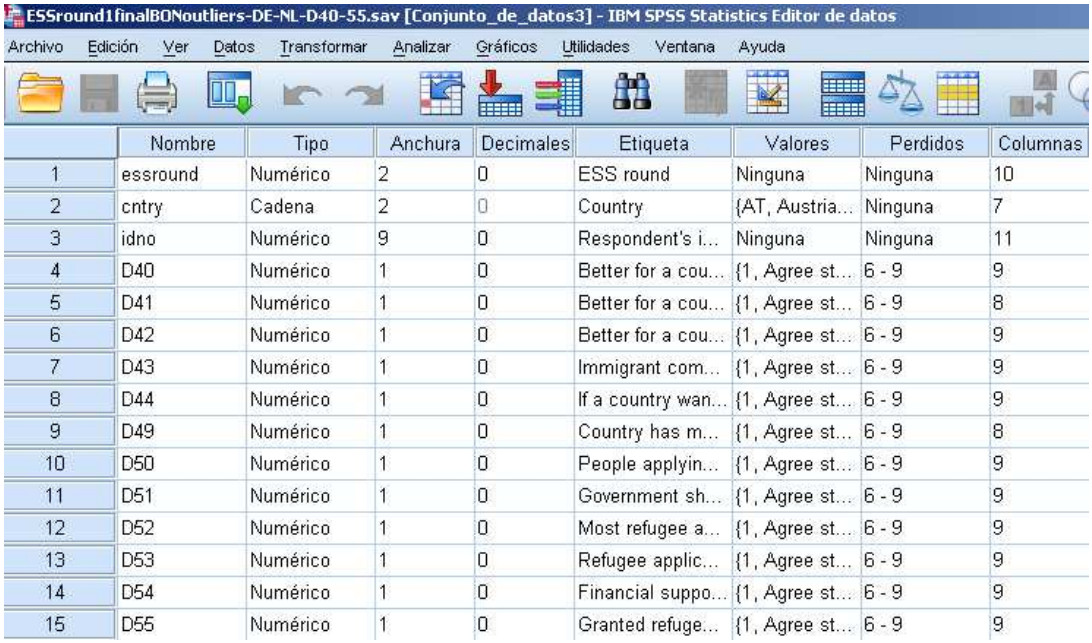
I) Model an acquiescence factor in a balanced battery of items.

1) Reminder:

a) Give the definition of acquiescence

b) What are 5 possible points to check to determine the presence of acquiescence in a balanced set of items?

2) Use the dataset "ESS1-DE-D40-D55". In this dataset (data for Germany only) the variables are as follow.



	Nombre	Tipo	Anchura	Decimales	Etiqueta	Valores	Perdidos	Columnas
1	essround	Numérico	2	0	ESS round	Ninguna	Ninguna	10
2	cntry	Cadena	2	0	Country	{AT, Austria...	Ninguna	7
3	idno	Numérico	9	0	Respondent's i...	Ninguna	Ninguna	11
4	D40	Numérico	1	0	Better for a cou...	{1, Agree st...	6 - 9	9
5	D41	Numérico	1	0	Better for a cou...	{1, Agree st...	6 - 9	8
6	D42	Numérico	1	0	Better for a cou...	{1, Agree st...	6 - 9	9
7	D43	Numérico	1	0	Immigrant com...	{1, Agree st...	6 - 9	9
8	D44	Numérico	1	0	If a country wan...	{1, Agree st...	6 - 9	9
9	D49	Numérico	1	0	Country has m...	{1, Agree st...	6 - 9	8
10	D50	Numérico	1	0	People applyin...	{1, Agree st...	6 - 9	9
11	D51	Numérico	1	0	Government sh...	{1, Agree st...	6 - 9	9
12	D52	Numérico	1	0	Most refugee a...	{1, Agree st...	6 - 9	9
13	D53	Numérico	1	0	Refugee applic...	{1, Agree st...	6 - 9	9
14	D54	Numérico	1	0	Financial suppo...	{1, Agree st...	6 - 9	9
15	D55	Numérico	1	0	Granted refuge...	{1, Agree st...	6 - 9	9

a) Check in the ESS questionnaire the wording of the different items. Why can we expect acquiescence?

b) Which model could be used to test the presence of acquiescence for these items?

c) Draw the path diagram for a 2 factors model, with one content factor for the variables D49-D54 and another content factor for the variables D40-D44. Which loadings do we expect to be positive? Which ones to be negative? What do we expect concerning a potential correlation between the 2 content factors?

d) Estimate this model using Mplus. Look at the path diagram and the output. Are the loadings as expected? And the correlation between the 2 factors? What are the variances of the factors? What is the fit of the model (global fit measures: chi-square, RMSEA...)?

e) Now, add a common style factor in the previous model with equal impact of this style factor on all the items. Look at the path diagram and the output. What are the variances of the content and style factors? Are they as we expected? Does the fit improve?

f) What else would we need to do to know if this style factor is acquiescence?

g) Now estimate a model with 2 separate (uncorrelated) style factors with equal impact of each one of the items of the corresponding battery. Does the fit improve? Propose a justification for this to happen.

h) What else could we try to improve the global fit?

II) [together] **Replicate analysis from the course / a paper using Mplus**

In the course, an example based on items from the ISSP95 has been presented. These items are analysed in more details in the following paper:

Billiet, J., Cambré, B. & Welkenhuysen-Gybels, J. (2002). "Equivalence of Measurement Instruments for Attitude Variables in Comparative Surveys Taking Method Effects into Account: the Case of Ethnocentrism". Pp. 73-96 in: Ferligoj, A. & Mrvar, A. (Eds.), *Developments in Social Science Methodology*. Ljubljana: FDV.

PDF available here: http://mrvar.fdv.uni-lj.si/pub/mz/mz18/billet.pdf

In this exercise, we want to replicate some of the results of tables 3 and 4 of the paper for West Germany and the Netherlands (also need to look at table 2). The covariance matrices for these 2 countries are in the folder for today's session. In order, the variables are: v41 v42 v43 v44 v45 v47 v48 v49 v50 v51 v52.

1) In the paper, the authors used LISREL to do their analyses. We are going to use Mplus. Do you expect differences due to the use of a different program? Justify. If you do, which differences do you expect?

2) Do the analyses as suggested in pages 59-60 of the paper.
   a) For Germany for table 3. Note that the data is a covariance matrix here (not a raw data as in previous exercises). Did you face any problems? Could you find the results again?
   b) Do the same for Germany for table 4.
   c) Do the same for the Netherlands for table 3.
   d) Do the same for the Netherlands for table 4.

3) What do you conclude about replicating a paper?

III) Working on your own research

1) On Tuesday, you had to go online and find data about the variables you were interested in. Come back to the data you found. Go through the whole questionnaire and identify if/where/which response styles can be expected. Explain why.

2) Propose and try out a way of detecting if the response style expected really occurs according to the data. If you find some, how would you take them into account in your analyses?

3) Propose changes that could be done in the questionnaire and would allow reducing some potential response styles.