

ORLA 6641

Exercise 5 – Latent Class Analysis. Due April 27 by 11:55pm on Canvas.

In Exercise 5, you will be reviewing materials online to learn how to conduct a fairly straightforward latent class analysis (LCA) in Mplus.

Mplus is a statistical program that is available on the computers in multiple computer labs at TC, and at Columbia and the other affiliate colleges. Please do not attempt to purchase Mplus, as it is very expensive. The expectation for this assignment is that you will work in groups in the computer labs.

As Mplus does not have a dataset handling feature, please use SPSS to clean and manipulate your data, and Mplus to run your analysis.

The assignment has 3 sections:

- 1) Please review the slides and Mplus downloads from Professor Karen Nylund's tutorial on LCA at the UCLA ATS webpage at <https://stats.idre.ucla.edu/mplus/seminars/lca/>

Please review the two videos below on an introduction to Mplus and an Introduction to Latent Class Analysis in Mplus. These two videos are from the University of Kentucky and give a strong overview of how to run an LCA in Mplus.

David Dueber Introduction to Mplus <https://www.youtube.com/watch?v=yKIFsAynQR4>

Caihong R. Li Introduction to Latent Class Analysis <https://www.youtube.com/watch?v=Z-xmVCC0Y-8>

- 2) Perform the Latent Class Analysis of alcohol use and replicate the analysis found at the link below. For this assignment, please provide the relevant LCA output. Please annotate the output to explain what it means and interpret the input code, and the relevant output code, according to the videos and the UCLA walk-through
<https://stats.idre.ucla.edu/mplus/dae/latent-class-analysis/>
- 3) Provide a 2-3 page single spaced research proposal in which you argue for and justify the use of LCA in a research topic that you are interested in. Please address the following questions in this order as you apply your new knowledge of LCA:
 - a. What is the purpose of your study?
 - b. Is there any research literature and theory that supports this argument? How so?
 - c. Why is LCA appropriate as a means to address this purpose?
 - d. What would be the research question(s)?
 - e. What type of dataset would you need? Is there a dataset you know of that would work?
 - f. What types of data would you be looking for?

- g. Provide a figure and a brief narrative in which you specify the LCA model, following the examples from the readings and the videos here.
- h. What do you think you would find?
- i. Why would this be important? What would be the implications for this research domain?

Formatting and other requirements:

Please format your response appropriately in a Microsoft Word file, using Times New Roman 12 point font, and copy and paste the appropriate SPSS output where required directly into the Word document.

When typing up your response, please make sure to first list the question number and please include the wording of the question as much as possible to make it easier for Bowers to read through the responses (where M&V give output from SPSS to interpret, just give the wording of the question please).

Please use SPSS and Mplus.

Please feel free to work in groups of 3 or less on the Exercises. Please make sure to include an APA cover page at the start of your response with the names of your collaborators on the exercises.

There is no page limit overall, but please try to be concise where possible while fully answering the questions.