

UNIVERSIDAD DE LAS AMÉRICAS PUEBLA

O22 LDS1061 Selected Topics 1

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2022.10.26 2nd Task

1. From Principal Components Analysis (PCA) we have derived techniques to analyze and describe categorical and mixed multivariate data. In this second activity you will develop case studies with real data to exemplify 1) Multiple Correspondence Analysis; 2) Factor Analysis of Mixed Data (FAMD).

Write a document about those cases reporting the following:

- 1) What the data set is about.
- 2) Given the context of the data, explain why it is relevant to apply MCA or FAMD in each case. For this, **it would be reasonable that there were starting questions** (e.g., think of the example of the Bumpus' sparrows, in which the underlying question was whether there were morphological differences between the surviving sparrows and those that died).
- 3) Discuss each step of the procedure (MCA or FAMD) in detail.
- 4) Answer the starting questions and **mention any new discovery or insight resulting from the visualization of the data.**

Specifics:

- A) This activity can be done in groups of no more than 2 people.
- B) Write a report describing the solution to each exercise. If using Word, consider the following characteristics: **Format:** US Letter; **Font:** Calibri, 11; **Margins:** 1 in. up, down, left and right; **Line spacing:** 1.5. If using other editors, try a similar format.
 - B1) Include a cover with general information: e.g., team members, subject, task, etc. In your report, **follow a structure where it is very clear that you are following steps 1 to 4 above.**
 - B2) **Include in your report all the necessary to support your arguments**, so that your report is fully understandable (graphs, tables, etc.). Besides, include your R Script in a separate file.
 - B3) Do not skimp on writing, but write with meaning. Avoid wordiness or a gimmicky writing style. Be formal, but clear and direct.
 - B4) Be careful with your writing. At this level you are expected to be able to clearly express your ideas in writing, following the spelling and syntax rules of the language.

- C) Upload your report to Blackboard (each member of the team).
 - C1) Deadline: upload your document no later than Friday, 04 NOV, 23:59.
 - C2) Reports submitted after the deadline will be penalized. One day of delay (submitting from Saturday, 05 NOV, 00:00 to Saturday, 05 NOV, 23:59), your report's maximum possible grade will be 8.5; submitting during the next 24 hours, your report's maximum possible grade will be 7.0, and so forth).