

BST 210 HOMEWORK #8 – Group Project 2

Due 11:59pm, Thursday, December 5, 2019

***Please be sure to submit your group assignment by 11:55ish pm (or before) to prevent any glitches in the upload from precluding your timely submission.**

***Please work well in advance, getting help during office hours and labs, as there will be no extensions given for this assignment, outside of extreme, extenuating circumstances which must be communicated in advance to the primary instructor.**

Group Project:

For this data analysis group project, you should work with 1 to 4 colleagues (groups of size 2 to 5, no singletons). Groups will submit one solution and group members will receive the same grade.

In this project, please use model building/selection skills to address an interesting research question that you develop arising from the Framingham data set. In particular, your project will involve (at least) one of the methods we've covered since the midterm (e.g., multinomial, ordinal, or/and conditional logistic regression, GLMs, Poisson models or extensions—that is, something beyond linear and binary logistic regression) as well as some proportional hazards regression modeling. You will develop a research question, choose an appropriate sample (it might not involve the whole data set), choose an appropriate exposure (or exposures), and covariates of interest. Potential considerations of confounding and effect modification might warrant investigation in order to address your research question. Your approach should support related, relevant analyses in the two statistical types of models you will fit (proportional hazards modeling and (at least) one other appropriate approach), and any analyses that you determine make sense to include in a manuscript. Use logic, common sense, and good statistical methods throughout.

The sky is the limit on analysis, but remember your ultimate goal for this assignment: a brief, concise write-up in the form of an abstract, statistical methods section, results and some visual displays. Please justify and explain why you arrived at any final models under consideration. Support each other and work as a team. This is very important! *The greatest contributions to the field of statistics, and to public health in general, are rarely accomplished by one individual, alone! Remember that collectively you have the power to change the world!*

Write up your findings by developing:

- A title
- A 250-word abstract matching a standard journal style (e.g., Background, Methods, Results, Conclusions)
- One to two paragraphs describing your statistical methods

- Up to five tables and/or figures (you may need fewer--no multi-panel figures)
- One to three paragraphs summarizing your results (including referring to your tables and figures)

All of this should be appropriate for submission as part of a manuscript. Use appropriate number of decimal places, labeling of variables, footnotes, nice layouts of abstracts and tables, and a good writing style, like you were submitting your work to a journal. Look at a few articles in journals for ideas. Higher grades will be assigned to strong analyses, perhaps with some interesting or challenging methods or findings, but also answering your overall research question/s well, having a professional appearance and writing style, and having nice tables, figures, and appropriate statistical methods and summarization of results. Focus your summarization of results to only include the most important information, not all the technical details, as you would see in a manuscript. (Excessive, less relevant material would be considered a negative in such a setting.)

You will submit your write-up in .pdf format online, through Canvas. You may also attach at the end *a limited number* of computer outputs (with comments) to help justify your approach and findings, or possibly to include some details not included in your summarizing of results text. However, the grading of this assignment will focus on your findings as described above, and only a limited number of additional pages should be submitted. Good luck!