

Topics in Advanced Statistics: Nonresponse, Missing Data, and Causal Analysis
(2 credit PhD level class – open to second year MA students with prerequisites completed)
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Class time: Friday 13:30-15:10 Office Hours: TBA or at an agreed time.
(Appointment is always required 24 hours before meeting. Email me or call me.)

Course Description:

Missing data is a fact of life for social scientists. People often do not respond to surveys or individual survey questions. Sometimes data is simply not available for certain countries, etc. Unfortunately, the most commonly used solution to this problem is whatever the default, and often not the most efficient, treatment built into the software. Nonetheless, the problem does not go away if we simply try to ignore it. It produces bias that can be avoided, treated or even ignored under some circumstances. Additionally, observation studies suffer from the limitation that prevents direct causal assessment of relationships. Methods developed to treat missing data can also be used to minimize this problem and take steps towards more certain causal assessment with observation data. The course will review how the traditional missing data methods can be used to improve causal analysis.

Learning Outcomes:

The goal of this course is to arm its participants with a solid understanding of the missing data problem and a toolset to appropriately deal with it using the listed software (and possibly others). Researchers at the end of the course should also be able to approach observational datasets as quasi-experimental designs and analyze them as such. At successful conclusion of the course students will be able to use the listed methods, evaluate other people's usage of these methods and recognize if the methods listed should have been used.

Software Used: SPSS, Mplus, Amelia, NORM and R

Enrollment requirement (prerequisites):

Permission (talk to the instructor before you enroll). Course is open to interested two year MA students in their second year who completed Multivariate Statistics.

Course Assessment:

20% Participation

20% Exercises

10% Format of the Final Paper (I will explain in class)

50% Content of the Final Paper

Topics Covered:

1, Missing data

- Alleviating missing data
- Thinking about missing data
- Statistical approaches to correct missing data
 - o Full information maximum likelihood estimation
 - o Multiple Imputation

2, Nonresponse

- Alleviating nonresponse
- Thinking about missing data
- Statistical approaches to correct missing data

3, Causal Analysis