

PSY 7610 – Research Design & Analysis II: Fall 2017

Instructor: Dr. Christian Geiser (christian.geiser@usu.edu)

Course schedule

Time: Tuesdays & Thursdays, 4:30 P.M. – 5:45 P.M.

Location: EDUC 170 (YETC Computer Lab, Education Building)

TA: Joseph Jones (office hours will be announced on Canvas)

Overview

This course covers basic and advanced regression analysis techniques. The course also covers applications using the general purpose statistical software SPSS.

Course Topics

Introduction and overview: Why do we need regression models?
Review of simple linear regression (criterion predicted by a single predictor)
Partial and semipartial correlation
Multiple linear regression (criterion predicted by multiple predictors)
Assumptions and checking assumptions; regression diagnostics
Regression with categorical (dichotomous and polytomous) predictors (analysis of variance as linear regression)
Regression with categorical & continuous predictors (analysis of covariance)
Analyzing interactions: moderated regression analysis
Analyzing non-linear trends in regression models
Logistic regression analysis with a binary (dichotomous) criterion
Logistic regression analysis with a polytomous criterion (multinomial logistic regression)

Course Objectives

Key goals of this course are that you:

- develop an understanding of various types of regression models
- learn how to correctly apply regression analysis techniques using SPSS.

Course materials

Power point slides and other relevant materials (readings, computer code, handouts, example data sets etc.) will be provided on CANVAS prior to each class. Please make sure you receive CANVAS notifications through your preferred email address and check CANVAS frequently for announcements, course updates, etc. It is recommended that you bring printouts of the powerpoint slides to class so you can take notes. A book recommendation is:

Cohen, J. & Cohen, P., West, S. & Aiken, L. (2003). *Applied multiple regression/correlation analysis for the behavioral sciences*. Mahwah, NJ: Erlbaum.

Statistical software

We will learn how to apply all of the regression techniques discussed in class using the software SPSS, which is available in the YETC student computing center as well as many other computing facilities on campus.

Review questions

In addition to in-class practice sessions, review questions are posted at the end of most powerpoint slide sets to help you review the material covered in the lectures. Completion of the review questions is voluntary and will not be graded.

Course requirements

Attendance. Regular attendance is required in this class given that much of the material is cumulative in nature. It is recommended that you contact the instructor in case you anticipate significant attendance difficulties. **Students who miss more than four lectures will receive a grade of B or lower** unless there are exceptional circumstances that justify more than four absences in class.

Final paper. The required final project paper is based on an application of one (or more) of the specific regression techniques discussed in class to a meaningful research question that is part of your own research. You can freely choose between the following methods: partial- or semipartial correlation, multiple linear regression with or without categorical predictors, moderated regression analysis, non-linear regression, logistic regression. The paper should be written as a short report following APA style and should consist of title, 5 key words, abstract (max. 120 words), introduction (1-3 pages), methods (1-2 pages), detailed results including checking of assumptions and relevant tables or figures (if needed) to adequately present statistical results (2-3 pages), discussion (1-2 pages), and reference list. When grading the paper, particular emphasis will be placed on (1) adequate fit between research question(s) and chosen method(s), (2) the correct application/implementation of the method(s), and (3) a clear and comprehensive description of the statistical results and their meaning for answering the research question(s).

Grading

Grading will be based on attendance and the quality of the final paper. Students who miss more than four lectures will receive a grade of B or lower unless there are exceptional circumstances that justify more than four absences in class. The standard grade break down used by Utah State University will be followed to assign the student a letter grade:

- A 100-93%
- A- 92-90%
- B+ 89-87%
- B 86-83%
- B- 82-80%

C+	79-77%
C	76-73%
C-	72-70%
D+	69-67%
D	60-66%
F	Below 6

Grievance Process (Student Code)

Students who feel they have been unfairly treated [in matters other than (i) discipline or (ii) admission, residency, employment, traffic, and parking - which are addressed by procedures separate and independent from the Student Code] may file a grievance through the channels and procedures described in the Student Code: Article VII Grievances, pages 25-30.

Changes in Assignments and Schedule

The instructor reserves the right to make changes to this syllabus at any time. Changes will be announced in class and posted on CANVAS.

Students Needing Assistance with the English Language

Several assignments in this course require English composition. If you feel you need assistance, please visit the USU Writing Center. They have tutors available to help: <http://writingcenter.usu.edu>.

Academic Integrity - "The Honor System"

Each student has the right and duty to pursue his or her academic experience free of dishonesty. The Honor System is designed to establish the higher level of conduct expected and required of all Utah State University students.

The Honor Pledge: To enhance the learning environment at Utah State University and to develop student academic integrity, each student agrees to the following Honor Pledge: "I pledge, on my honor, to conduct myself with the foremost level of academic integrity." A student who lives by the Honor Pledge is a student who does more than not cheat, falsify, or plagiarize. A student who lives by the Honor Pledge:

Espouses academic integrity as an underlying and essential principle of the Utah State University community;

Understands that each act of academic dishonesty devalues every degree that is awarded by this institution; and

Is a welcomed and valued member of Utah State University.

Plagiarism

Plagiarism includes knowingly "representing, by paraphrase or direct quotation, the published or unpublished work of another person as one's own in any academic exercise or activity without full and clear acknowledgment. It also includes the unacknowledged used

of materials prepared by another person or agency engaged in the selling of term papers or other academic materials." The penalties for plagiarism are severe. They include warning or reprimand, grade adjustment, probation, suspension, expulsion, withholding of transcripts, denial or revocation of degrees, and referral to psychological counseling.

Sexual Harassment

Sexual harassment is defined by the Affirmative Action/Equal Employment Opportunity Commission as any "unwelcome sexual advances, requests for sexual favors, and other verbal or physical conduct of a sexual nature." If you feel you are a victim of sexual harassment, you may talk to or file a complaint with the Affirmative Action/Equal Employment Opportunity Office located in Old Main, Room 161, or call the AA/EEO Office at 797-1266.

Students with Disabilities

The Americans with Disabilities Act states: "Reasonable accommodation will be provided for all persons with disabilities in order to ensure equal participation within the program. If a student has a disability that will likely require some accommodation by the instructor, the student must contact the instructor and document the disability through the Disability Resource Center (797-2444), preferably during the first week of the course. Any request for special consideration relating to attendance, pedagogy, taking of examinations, etc., must be discussed with and approved by the instructor. In cooperation with the Disability Resource Center, course materials can be provided in alternative format, large print, audio, diskette, or Braille."

Withdrawal Policy and "I" Grade Policy

Students are required to complete all courses for which they are registered by the end of the semester. In some cases, a student may be unable to complete all of the coursework because of extenuating circumstances, but not due to poor performance or to retain financial aid. The term 'extenuating' circumstances includes: (1) incapacitating illness which prevents a student from attending classes for a minimum period of two weeks, (2) a death in the immediate family, (3) financial responsibilities requiring a student to alter a work schedule to secure employment, (4) change in work schedule as required by an employer, or (5) other emergencies deemed appropriate by the instructor