

Statistical Design and Analysis for CCI Research

CCI 611 – Fall 2016

MW 4:40-5:55 p.m., CUE 420

College of Communication and Information / The University of Tennessee-Knoxville

Instructor

Professor Julie Andsager

jandsage@utk.edu

office: CUE 325 (in School of Journalism & Electronic Media office, CUE 333)

office hours: TW 1:30-3 or by appointment

Catalog Description

Methods of statistical analysis of data in Communication and Information. Begins with a review of basic probability and descriptive statistical concepts, then moves to consider statistical inference and hypothesis-testing, focusing on regression and ANOVA. Emphasizes the use and interpretation of statistics in communication and information research.

Course objectives

- To improve quantitative reasoning ability.
- To understand how research design and measurement influence statistical analysis.
- To understand the relationship among variables, hypotheses, and statistical techniques.
- To be able to interpret and explain the results of statistical testing.

Textbook and materials

Required:

Hayes, Andrew F. *Statistical methods of communication science*. (2005, Lawrence Erlbaum Associates; 2009, Routledge)

Current copy of SPSS (available free from OIT)

Additional readings may be posted on or linked to Blackboard.

Suggested:

Green, Samuel B., & Salkind, Neil J. *Using SPSS for Windows and Macintosh: Analyzing and understanding data*. (multiple years/editions, Pearson) This book is helpful for interpreting SPSS output. Although a current edition would be best because SPSS changes all the time, an older one will still be useful.

Course policies

Course attendance: As graduate students, you are expected to be here for every class meeting. Much of the learning in this course will occur through class discussion. You should prepare for class by reading the assignments and thinking of questions or comments about them. I don't expect that you will completely understand the readings prior to discussion, but I will expect that you have read them. If you can't make it to class for some very good reason, please contact me. Missing class will automatically put you behind, as all components of statistics are interrelated.

Participation in class: There is no "participation grade," but our class will be too small for you to be able to avoid participating in discussion. Read the week's assignments *before* class so that you can ask questions when you don't understand the material.

Timely completion of assignments: Assignments are to be turned in on time. "On time" means by 4 p.m. on the day the assignment is due. Ten percent of the grade will be deducted for each day an assignment is late, including weekends. "Late" begins at 4:05 p.m. on the day the assignment is due. Assignments will be submitted via the class's Blackboard drop box, and the drop box will be closed at 4:05 p.m.

Plagiarism and academic dishonesty: Unlike most graduate-level courses, there are right and wrong answers to the assignments in a statistics course. It may be tempting to work together on assignments, but you will not learn from doing so, and I consider it academic dishonesty to turn in work that you have not produced yourself. Homework, exams, and any other assignments that are not the result of your own work will receive a zero. This policy will be strictly enforced. See also the UTK Statement:

UTK Statement on Academic Integrity

"The responsibility for learning is an individual matter. Study, preparation and presentation should involve at all times the student's own work, unless it has been clearly specified that work is to be a team effort. Academic honesty requires that all work presented be the student's own work, not only on tests, but in themes, papers, homework, and class presentation. ..." (Hilltopics 2009-2010 Student Handbook, The University of Tennessee, Knoxville; <http://dos.utk.edu/hilltopics/>).

Assignments and grading

Homework	65%
Midterm take-home exam	15%
Final take-home exam	20%

Grades: 95% or more = A; 90-94% = A-; 86-89% = B+; 83-85% = B; 80-82% = B-; 75-79% = C+; 70-74% = C; 60-69% = D; 59% or below = F.

Homework deadlines will be announced at least one week ahead of due dates. Midterm and final exam deadlines are listed on the tentative schedule below.

Homework assignments (more specific details will be provided when assignments are posted)

1. **Data cleaning** – Using an SPSS data set that I provide, cleanse the data (look for mistakes, such as a 6 entered on a variable with a 5-point response set; make sure missing variables are identified as such; etc.). Then identify the measurement level of each variable and provide the appropriate descriptive statistics (either means and SDs or frequencies). *Important:* Save the cleansed SPSS data set – several homework assignments will require it.
2. **Basic calculations** – Using the small data set (not the SPSS set) provided, identify the mean, median, and mode for 2 variables. Calculate 2 chi-square tests. Explain what the results mean.
3. **Planning for analysis I** – You will be given 2 hypotheses or research questions using the variables in the SPSS data set. What statistical tests would you use to test the hypotheses and answer the RQs? Justify your choices. Then write a hypothesis or research question of your own to be answered with the data set, and explain what statistical tests you will use to test/answer it. (Be sure to look at the data distributions.)
4. **Analysis I** – Using the SPSS data set, test the hypotheses and answer the RQs using the appropriate statistical tests. Write a Results section (as you would see in a quantitative research article) to report your findings.
5. **Analysis II** – Using the SPSS data set, test the hypotheses and answer the RQs using the appropriate statistical tests. Write a Results section (as you would see in a quantitative research article) to report your findings.
6. **Analysis III** – Using the SPSS data set, test the hypotheses and answer the RQs using the appropriate statistical tests. Write a Results section (as you would see in a quantitative research article) to report your findings.
7. **Analysis IV** – Analysis with multiple independent variables. Using the SPSS data set, test the hypotheses and answer the RQs using the appropriate statistical tests. Write a Results section (as you would see in a quantitative research article) to report your findings.

Though homework assignments will be worth different levels of points, each assignment will be treated as equal in calculating the homework portion of grade. The percentage correct on each assignment will be recorded instead of the raw points.

Tentative schedule – read the assigned chapters before class on Monday

Aug. 17	introduction
Aug. 22-24	quantitative reasoning; levels of measurement; read Hayes, chapters 1-2
Aug. 29-31	sampling and description; read Hayes, chapters 3-4
Sept. 7	probability; read Hayes, chapter 5
Sept. 12-14	distribution and confidence; read Hayes, chapter 7
Sept. 19-21	hypotheses; read Hayes, chapter 8
Sept. 26-28	chi-squares and other categorical tests; read Hayes, chapter 11

Oct. 3-5	t-tests; read Hayes, chapter 9
Oct. 7 (Friday)	take-home midterm due by 4 p.m.
Oct. 10-12	t-tests, part 2; read Hayes, chapter 10
Oct. 17-19	simple linear regression; read Hayes, chapter 12
Oct. 24-26	multiple linear regression; read Hayes, chapter 13
Oct. 31-Nov. 2	basic ANOVA; read Hayes, chapter 14
Nov. 7-9	ANCOVA; read Hayes, chapter 15
Nov. 14-16	interactions; read Hayes, chapter 16
Nov. 21-23	reliability and factor analysis; read Hayes, chapter 6
Nov. 28-30	using tables and figures
Dec. 9 (Friday)	Final exam due by 2:30 p.m.

College and University policies

CCI Diversity Statement

“CCI recognizes and values diversity. Exposing students to diverse people, ideas and cultures increases opportunities for intellectual inquiry, encourages critical thinking, and enhances communication and information competence. When all viewpoints are heard, thoughtfully considered, and respectfully responded to, everyone benefits. Diversity and fairness unite us with the wider professional and global community.” (see <http://www.cci.utk.edu/diversity-statement> for CCI’s full Diversity Statement).

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UTK Policy on Special Needs

If you need course adaptations or accommodations because of a documented disability or if you have emergency information to share, please contact the Office of Disability Service at 191 Hoskins Library or at (865) 974-6087. This will ensure that you are properly registered for services.

UTK Policy on Inclement Weather

If the university is officially closed, classes will be canceled. You can be informed by the course distribution list, UTK Homepage or the information line of the phone system. We may need to revise the schedule after the missed session. Any type of arrangements will be discussed with students in advance and announced in class or via e-mail.