

# JOUR 805 QUANTITATIVE RESEARCH METHODS

William Allen White School of Journalism and Mass Communications, University of Kansas  
Spring 2016, Tuesdays, 2:30–5 p.m., 303 Stauffer-Flint

## INSTRUCTOR

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## OBJECTIVES

By the end of this course, you will be able to:

- Identify and operationalize variables important to your research.
- Develop research questions and hypotheses using these variables.
- Select appropriate research methods to address these research questions and hypotheses.
- Know how to implement content analysis, survey, and experimental methods.
- Analyze statistical data from content analyses, surveys, and experiments using SPSS.
- Report and interpret the results of these statistical analyses.

## BOOKS

Required:            Wrench, J. S., Thomas-Maddox, C., Richmond, V. P., & McCroskey, J. C. (2008). *Quantitative research methods for communication: A hands-on approach*. New York, NY: Oxford University Press.

Recommended:    American Psychological Association. (2010). *Publication manual of the American Psychological Association* (6th ed.). Washington, D.C.: Author.

## ASSESSMENT

Five lab assignments	100 points
Lit review sketch and hypotheses	100
First research method	100
Second research method	100
Final paper	100
Final presentation	50
Total	550 points

## ASSIGNMENT GUIDELINES

The due dates and times specified below constitute hard deadlines. Extensions and incompletes will not be considered. Late assignments will be given a grade of 0.

Papers will be typed and submitted as a Word file, using Times New Roman 12-point font, double-spaced, with 1-inch margins on all sides. Follow APA publication manual (6th ed.) for all formatting.

Each written assignment will have 10% of the grade dedicated to APA Style. Each APA Style mistake will “cost” 1% of the grade.

In your final paper, you will propose to study a research interest using two of the three main quantitative research methods: content analysis, survey, and experiment. Keep this final goal in mind as you work on the assignments throughout the semester.

### **Lab assignments**

- Due dates are indicated in the schedule below. Lab assignments will be submitted in hard copy at the beginning of class.
- These assignments should be completed individually. While everyone will work on the same assignments, you should not consult with other students about their answers or about how they are completing their assignments. Trust your own abilities and honor this request. Contact your instructor if you have questions.

### **Literature review outline and hypotheses**

- Due March 1 at 2:30 p.m., uploaded to Blackboard.
- Before you begin writing this assignment:
  - Identify the key theoretical propositions, concepts, and research findings within the literature(s) related to your research interest. Summarize these for yourself in several short paragraphs or bullet points, including the key citations for each statement.
  - Examine your literature summary and identify one or more “gaps” in this literature. While you’re not yet identifying what research methods you will use to address these gaps, be thinking about methods. You will eventually propose to address these gaps with quantitative research methods.
- Then, write the outline of a literature review that accomplishes three goals:
  - Presents a convincing argument that the gap(s) in research needs to be addressed.
  - Explains what you expect to find in your research, that is, provides evidence for your hypotheses.
  - Provides an overview of the literature you have collected. Use the previous two goals to frame this literature review.
- Since this is an outline, you can use bullet points in place of paragraphs. Each bullet point/paragraph should contribute to your overall argument and include citations. You may briefly summarize how each citation will support the argument.
- Write one or more hypotheses. You may have competing hypotheses. The hypotheses need to be grounded in theory and in prior research. By the time your readers get to your hypotheses, they need to have a sense of what these hypotheses will be, based on the explanation of what you expect to find (see second goal, above). While you are not yet writing about research methods, you should be able to address each hypothesis with one of the three quantitative research methods.

- In a final paragraph (which you would not include for a conference or a journal), briefly state what methods you plan to use to address each of the hypotheses.
- The literature review outline should be no more than four pages (I will not read more than four pages). Include a reference section, which will not count toward the four pages. Use proper APA style in your writing and references.

### **First research method**

- Due April 5 at 2:30 p.m., uploaded to Blackboard.
- Begin by re-stating the hypothesis/es you plan to address using the first research method.
- Write a methods section. Follow our list of best practices for how to structure this section, and what to include in it. Thoroughly explain how you plan to conduct the study. Use sub-section headers to organize your writing.
- You may find helpful instructions for how to structure this section in chapters 5 and 7 of *Quantitative research methods*.
- Throughout the methods section, cite previous studies that used the same or similar methods, and cite methods articles or books that justify your methods.
- Since you don't have data, include placeholders for specific numbers ( $N$ ,  $\alpha$ , etc.) that you can fill in when you do have the data. Write how you expect to use these numbers (e.g., "The seven items will form a reliable scale ( $\alpha = \underline{\quad}$ ).").
- Include an analysis section, in which you explain how you will analyze your data. For instance, you can explain what statistical models you will use and what variables you will enter into the models. In a final paragraph (which you would not include for a conference or a journal), explain how you will know if your hypothesis is supported, and how will you know if it is not supported.
- Include a brief limitations section (this would be part of the Discussion in a conference paper or journal article), in which you explain the limitations of this research method and your approach, and suggest how this limitation may be overcome in future research. Be self-critical and anticipate any concerns that a reviewer might raise.
- You can write either in future or past tense. Methods sections in proposals are written in future tense. Methods sections in theses/dissertations, conference papers, and journal articles are written in past tense.
- The methods section should be no more than five pages (I will not read more than five pages). Include a reference section, which will not count toward the five pages. Use proper APA style in your writing and references.

### **Second research method**

- Due April 26 at 2:30 p.m., uploaded to Blackboard.
- Repeat the previous assignment addressing your remaining hypothesis/es and describing a research method you did not write about in the first research method assignment.

### **Final paper**

- Due May 10 at 2:30 p.m., uploaded to Blackboard.

- This assignment will incorporate the previous three assignments. Address comments and suggestions for revision you received on your previous assignments.
- This paper will not be more than 15 pages long. The Reference section will not count toward this total.

## **Presentation**

- You will present your paper to your classmates and invited faculty on May 10 at 2:30 p.m.
- We will have a practice session on May 3, so your presentation should be ready by then.
- You will have 8 minutes to present your project. Do not feel that you need to talk about everything that's in your paper. Focus on key ideas, do not get lost in details.
- When preparing a slideshow to accompany your presentation, remember that less is more. Cluttered slides are repugnant and detract attention from you and from your content. Aim for two slides per assignment, six slides total.

## **SCHEDULE**

### **January 19            Theory and prior research**

Before you come to the first class:

- Read chapter 2, "Empirical research," and chapter 4, "Searching for previous research" (Steps 1-4 only), in *Quantitative research methods for communication*.

In class:

- Ritual reading of the syllabus.
- Discussion of research process, research gaps, research questions.
- Review of library resources.

Optional background reading:

While we will not cover Step 5 in class, it may be worthwhile for you to read the remainder of chapter 4. Step 5 in chapter 4 focuses on APA style. You will also find this information in the APA style guide.

### **January 26            Variables**

Before you come to class:

- Read chapter 5, "Research structure and literature reviews," and chapter 6: "Variables."
- Identify and be ready to share the most important, interesting, or surprising statement from chapter 5.
- Come to class with two variables related to your research. Be ready to explain:
  - What are the different attributes (dimension) of each variable, if any (p. 106)?
  - How is each variable measured?
  - What level is each variable (i.e., nominal, ordinal, interval, scale; see pp. 111-115)?
  - What is the relationship between the two variables (e.g., positive, negative, none; see pp. 107-108)?
- Bring copies (enough for everyone) of original sources that explain how each variable is measured. Look for these in article methods sections or appendices.
- Bring a laptop to class (your own or one from the Resource Center).

In class:

- Review chapters 5 and 6.
- Share examples of variables.

## **February 2            Descriptive statistics**

Before you come to class:

- Read chapter 8, “Descriptive statistics.”
- Be able to explain and illustrate the following terms: population, sample, descriptive statistics, inferential statistics, mean, median, frequency distribution, positively and negatively skewed curves, range, sum of squares, variance, and standard deviation.

In class:

- Review statistical terms.
- Lab class on SPSS basics and descriptive statistics.
- Begin the lab assignment.

## **February 9            Item and response wording**

Before you come to class:

- Read chapter 9, “Measurement.”
- Be able to explain and illustrate the following terms: Likert scale, semantic differential scale, latent variable, personality trait, personality state, leading/loaded questions, double questions (aka double-barreled questions).
- Read one of the following articles and be ready to contribute to our best practices guide on survey design. Each article should be read by two students.

*On item wording:*

Redline, C. (2013). Clarifying categorical concepts in a web survey. *Public Opinion Quarterly*, 77(1), 89–105. doi: 10.1093/poq/nfs067

Yeager, D. S., & Krosnick, J. A. (2012). Does mentioning “some people” and “other people” in an opinion question improve measurement quality? *Public Opinion Quarterly*, 76(1), 131–141. doi: 10.1093/poq/nfr066

*On response options:*

Krosnick, J. A., Holbrook, A. L., Berent, M. K., Carson, R. T., Hanemann, W. M., Kopp, R. J., ... Conaway, M. (2002). The impact of “no opinion” response options on data quality: Non-attitude reduction or an invitation to satisfice? *Public Opinion Quarterly*, 66, 371–403. doi: 10.1086/341394

Lenzner, T., Kaczmirek, L., & Galesic, M. (2014). Left feels right: A usability study on the position of answer boxes in web surveys. *Social Science Computer Review*, 32(6), 743–764. doi: 10.1177/0894439313517532

In class:

- Review statistical terms.
- Begin writing the class best practices guide on survey design.
- Practice writing scale items.

## **February 16 Reliability, validity, factor analysis**

Before you come to class:

- Finish the lab assignment from Feb. 2 and turn it in (in hard copy) at the beginning of class.
- Read the following sections of chapter 10, “Reliability and validity:” “Reliability” to “Cronbach’s alpha reliability” (pp. 187-192); “Improving reliability of measurement” to the end of the chapter (pp. 201-210).
- Read the section “Factor analysis” in chapter 21 (pp. 427-432).
- Read this article, focusing on the methods and results sections (you can skip the discussion section; read just enough of the lit review to understand what’s going on in the method):  
Baek, K., Holton, A., Harp, D., & Yaschur, C. (2011). The links that bind: Uncovering novel motivations for linking on Facebook. *Computers in Human Behavior*, 27, 2243-2248. doi:10.1016/j.chb.2011.07.003
- Be able to explain and illustrate the following terms: reliability, scalar reliability, test-retest reliability, Cronbach’s alpha reliability, validity, factor analysis.

In class:

- Review statistical terms.
- Lab class on Cronbach’s alpha and factor analysis.

## **February 23 Survey research**

Before you come to class:

- Read the following sections of chapter 11, “Survey research:” “How to conduct survey research” (pp. 218-223), “Problem areas associated with survey research” (pp. 227-231).
- Read the following sections of the AAPOR report on [Survey Refusals](#):
  - Who refuses (pp. 33-44); \_\_\_\_\_
  - Refusal aversion (pp. 45-59). \_\_\_\_\_
- Read the AAPOR report on [Online Panels](#):
  - Nonprobability/volunteer online panels (pp. 9–14); \_\_\_\_\_
  - Basic concepts regarding coverage issues in online panels (p. 16);
  - Unit nonresponse and nonresponse error (pp. 17–21); \_\_\_\_\_
  - Mode effects (pp. 24–33, stop at “Special case of pre-election polls”);  
\_\_\_\_\_ and \_\_\_\_\_
  - Respondent effects (pp. 34–37). \_\_\_\_\_

In class:

- Go over readings.
- Generate a list of best practices for constructing and administering surveys.

## **March 1 Content analysis**

Before you come to class:

- Upload the literature review assignment on Blackboard.
- Read chapter 12, “Content analysis.”
- Read this article:  
Slater, M. D. (2013). Content analysis as a foundation for programmatic research in communication. *Communication Methods and Measures*, 7, 85-93. doi: 10.1080/19312458.2013.789836

In class:

- Go over readings.
- Generate a list of best practices for constructing and administering content analyses.
- Practice reliably coding a sample of content.
- Practice using an intercoder reliability calculator.

Good readings we won't have time to talk about, but which you should read if you do a content analysis for your thesis or dissertation:

Krippendorff, K. (2011). Agreement and information in the reliability of coding. *Communication Methods and Measures*, 5(2), 93-112. doi: 10.1080/19312458.2011.568376

Lovejoy, J., Watson, B. R., Lacy, S., & Riffe, D. (2014). Assessing the reporting of reliability in published content analyses: 1985-2010. *Communication Methods and Measures*, 8(3), 207-221. doi: 10.1080/19312458.2014.937528

## **March 8                    Sampling, hypothesis testing, and t-tests**

Before you come to class:

- Read the following sections in chapter 14, "Sampling methods:" "Probability sampling" (p. 284), "Sampling error" (p. 288), and "Determining sample size" (p. 292).
- Read chapter 15, "Hypothesis testing," stopping at "Testing for power" (p. 304).
- Read chapter 17, "Independent samples t-tests," stopping at "SAS and t-tests" (p. 343).
- Be able to explain and illustrate the following terms: probability sampling, sampling error, typical confidence level, confidence interval; what using a hypothesis vs. a research question depends on, null hypothesis, standard error, how to calculate the probability level, steps necessary in significance testing; what level variables the t-test examines.

In class:

- Go over the statistical terms from the book.
- Generate variables and research questions/hypotheses from your own research that can be addressed with the t-test.
- Lab on t-tests.

## **Spring Break**

### **March 22                    Experiments**

Before you come to class

- Read chapter 13, "Experiments;" skip the section "Threats to experimental design" (p. 269-272).
- Read this article, focusing on the methods section. You can skip the discussion section and only read enough of the literature review and results to make sense of the methods.  
Borah, P. (2014). Does it matter where you read the news story? Interaction of incivility and news frames in the political blogosphere. *Communication Research*, 41(6), 809-827. doi: 10.1177/0093650212449353

In class:

- Be ready to generate a list of best practices for conducting and writing about experiments.

Good readings we won't have time to talk about, but which you should read if you do an experiment for your research/dissertation:

Matthes, J., Marquart, F., Naderer, B., Arendt, F., Schmuck, D., & Adam, K. (2015).

Questionable research practices in experimental communication research: A systematic analysis from 1980 to 2013. *Communication Methods and Measures*, 9(4), 193-207. doi: 10.1080/19312458.2015.1096334

Metzler, C. E., Naab, T., Daschmann, G. (2012). All student samples differ: On participant selection in communication science. *Communication Methods and Measures*, 6, 251-262. doi: 10.1080/19312458.2012.732625

## **March 29                      Correlation and regression**

Before you come to class:

- Finish the lab assignment from March 8 and turn it in (in hard copy) at the beginning of class.
- Read chapter 19, "Correlation," skipping the sections on SAS and stopping at "Discussion of the Chesebro article" (p. 391).
- Read chapter 20, "Regression," skipping the sections on SAS and stopping at "Discussion of the Wrench and Booth-Butterfield article" (p. 409).
- Read this article, focusing on the methods and results sections. Read only enough of the literature review to understand what's going on in the methods.

Harben, B., & Kim, S. (2010). Political opinion leadership and advertisement attitude: The moderating roles of cognitive and affective responses to political messages. *The Social Science Journal*, 47, 90-105. doi:10.1016/j.soscij.2009.08.003

In class:

- Lab on correlation and regression.

## **April 5                              Dummy variables, logistic and Poisson regression**

Before you come to class:

- Upload the first method assignment on Blackboard.
- Read these articles. These articles are not easy so focus on the parts you can understand and skim the rest. Below each article is a list of what you need to get out of these articles:

Peng, C.-Y. J., Lee, K. L., & Ingersoll, G. M. (2002). An introduction to logistic regression analysis and reporting. *Journal of Educational Research*, 96(1), 3-14. doi: 10.1080/00220670209598786

- What you need to know: what is logistic regression and why it's used; what are odds ratios (OR) and how to report and interpret them.

Huang, F. L., & Cornell, D. G. (2012). Pick your Poisson: A tutorial on analyzing counts of student victimization data. *Journal of School Violence*, 11(3), 187-206. doi: 10.1080/15388220.2012.682010

- What you need to know: what Poisson regression is and why it's used; what are its derivatives and when they're used (e.g., negative binomial regression); what are incidence rate ratios ("exponentiated values" in the article), and how to report and interpret them.

In class:

- Lab on dummy variables, logistic regression, Poisson regression.

## **April 12                    Moderation (aka interaction)**

Before you come to class:

- Finish the lab assignment from March 29 and turn it in (in hard copy) at the beginning of class.
- Read the “Fundamentals of moderation analysis” chapter from Andy Hayes’ *Introduction to moderation, mediation, and conditional process analysis*, posted on Blackboard. This is a long and not easy chapter. Focus on these sections:
  - Introduction and “Conditional and unconditional effects,” stopping before “Symmetry in moderation” (pp. 207-215);
  - “An example: Sex discrimination in the workplace,” stopping before “Estimation using PROCESS” (pp. 219-225).
- Read this article, focusing on the methods and results sections, especially on the interactions: Bond, B. J., & Compton, B. L. (2015). Gay on-screen: The relationship between exposure to gay characters on television and heterosexual audience endorsement of gay equality. *Journal of Broadcasting & Electronic Media*, 59(4), 717-732. doi: 10.1080/08838151.2015.1093485

In class:

- Lab day on moderation/interaction.

## **April 19                    Regression lab**

Before you come to class:

- Finish the lab assignment from April 5 and turn it in (in hard copy) at the beginning of class.
- Bring your own data to class, if you have any. If you don’t have data, don’t worry about it.

In class:

- Lab day on regression.

## **April 26                    Mediation and structural equation models**

Before you come to class:

- Upload the second methods assignment on Blackboard.
- Read the “The simple mediation model” chapter from Andy Hayes’ *Introduction to moderation, mediation, and conditional process analysis*, posted on Blackboard. This is a long and not easy chapter. Focus on these sections:
  - Introduction to “Example with dichotomous X: The influence of presumed media influence,” stopping at “Estimation of the model in PROCESS” (pp. 85-98).
- Read these articles, focusing on the methods and results sections, especially the mediation and structural equation models:
  - Bobkowski, P. S. (2015). Sharing the news: Effects of informational utility and opinion leadership on online news sharing. *Journalism & Mass Communication Quarterly*, 92(2), 320-345. doi: 10.1177/1077699015573194
  - Peter, J., & Valkenburg, P. M. (2009). Adolescents’ exposure to sexually explicit Internet material and notions of women as sex objects: Assessing causality and underlying

processes. *Journal of Communication*, 59, 407-433. doi: 10.1111/j.1460-2466.2009.01422.x

In class:

- Discuss mediation and structural equation modeling.

### **May 3                      Presentation practice**

Before you come to class:

- Finish the lab assignment from April 12 and turn it in (in hard copy) at the beginning of class.
- Prepare your presentation, following the guidelines above.

In class:

- Practice your presentation and receive feedback. Provide feedback on your classmates' presentations.

### **May 10                      Final presentations**

Before you come to class:

- Final paper due at the beginning of class electronically on Blackboard.

In class:

- Present your research to your classmates and faculty.