

RUTGERS, THE STATE UNIVERSITY OF NEW JERSEY
SCHOOL OF SOCIAL WORK
Syllabus

16:910:637

Quantitative Research Methods

Fall 2017

Tuesday, 1:00-3:40 PM, Social Work Annex-Doctoral Seminar Room

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Office hours: By appointment

Course Description

This course, the first in the research methods sequence for doctoral students, focuses on quantitative research methods. Students will be introduced to scientific inquiry and research methods including: problem and hypothesis formulation, reviewing research literature, human subjects protection, measurement, sampling, and study design. The goal of the course is to provide students with the foundational knowledge and skills needed to carry out independent quantitative research and to critically evaluate existing studies.

Course Objectives

Upon completion of this course, students will be able to:

1. Understand the logic, process, and language of scientific inquiry
2. Understand and follow ethical standards of scientific inquiry, particularly with regard to protecting human subjects
3. Critically evaluate existing quantitative research studies
4. Formulate and conceptualize policy and practice-related research questions
5. Develop hypotheses and design research studies to answer these research questions using defensible quantitative research methodology.

Required Texts

Rubin, A. & Babbie, E. R. (2016). *Research Methods for Social Work* (9th edition). Brooks/Cole

Kumar, R. (2011). *Research Methodology: A Step-by-Step Guide for Beginners* (3rd edition). Sage

Additional articles are listed in the course outline below

Suggested Texts

Trochim, W. M. (2006) *The Research Methods Knowledge Base* (2nd edition). Retrieved from <http://www.socialresearchmethods.net/kb>

Course Requirements and Grading

Students will be evaluated on the following course requirements (detailed assignment instructions will be provided in class).

Human subjects protection training

Complete the on-line Collaborative IRB Training Initiative (CITI) training and post a copy of your Completion Report to Sakai. Completing this assignment confirms that you have received the minimum training required to be involved in research with human subjects. This assignment is not graded.

Research proposal assignments (30%)

Students will develop a research proposal in six segments. These segments will start from identifying a research topic, developing a research question, conducting a literature review, to selecting a research approach including study design, sampling procedure, and measurements.

Final research proposal (40%)

The assignments will be used to develop the final research proposal that students turn in as a final project for the course.

Research proposal presentation (15%)

15-minute presentation of the research proposal to the class (e.g., using PowerPoint).

Test (15%)

An open-book test.

All written assignments are to be typed, double-spaced, with 1-inch margins on all sides using a standard font, and submitted via Sakai before class on the due date.

It is important that assigned readings be completed prior to coming to class in order to have informed class discussions. All class sessions will assume that students have read the assigned material.

Students are expected to notify the instructor if they are unable to attend class. Absences and lack of preparation will impact the students' final grades.

Grade cut-offs are as follows:

A	92-100
B+	87-91
B	82-86
C+	77-81
C	70-76
F	0-69

Assignment Due Dates

Assignment	Date
CITI human subjects protection training	Sep 12
Research proposal Topic	Sep 19
Research proposal Question and Significance	Sep 26
Research proposal Background	Oct 10
Research proposal Specific Aims	Oct 17
Research proposal Sampling, Data Collection, and Measures	Nov 7
Test	Nov 21
Research proposal Study Design	Nov 28
Research proposal presentation	Dec 12
Final research proposal	Dec 20

Course Outline

Week 1 (Sep 5): Introduction and overview of the course

- Overview of course and assignments
- The research process

Read

- Lehrer, J. (2010, December 13) The Truth Wears Off: Is there something wrong with the scientific method? *The New Yorker*. Retrieved from <http://www.newyorker.com/magazine/2010/12/13/the-truth-wears-off>

Week 2 (Sep 12): Ethical issues and human subject protection

- Ethics of conducting and reporting research
- IRB process

Read

- Rubin & Babbie (2016) Ch. 5-The Ethics and Politics of Social Work Research
- Kumar (2011). Ch. 14
- Martinson, B. C., Anderson, M. S., & De Vries, R. (2005). Scientists behaving badly. *Nature*, 435(7043), 737-738.

Skim

- Wendler, D., Emanuel, E. J., & Lie, R. K. (2004). The standard of care debate: can research in developing countries be both ethical and responsive to those countries' health needs? *American Journal of Public Health*, 94(6), 923-928.

Assignment Due

- CITI training human subjects protection completion report

Week 3 (Sep 19): Research questions and hypotheses

- Purposes of research
- Problem formulation
- Literature reviews
- Critically assessing prior research
- Hypotheses

Read

- Rubin & Babbie (2016) Ch. 3-Factors Influencing the Research Process
- Rubin & Babbie (2016) Ch. 7-Problem Formulation
- Kumar (2011). Ch. 3, 4, 6
- Bach, P. B., Pham, H. H., Schrag, D., Tate, R. C., & Hargraves, J. L. (2004). Primary care physicians who treat blacks and whites. *New England Journal of Medicine*, 351(6), 575-584.

Skim

- Kumar (2011). Ch. 1
- Boote, D. N., & Beile, P. (2005). Scholars before researchers: On the centrality of the dissertation literature review in research preparation. *Educational researcher*, 34(6), 3-15.

Assignment Due

- Research proposal topic

Week 4 (Sep 26): Conceptualization

- Conceptualization
- Operationalization
- Types of variables (dependent, independent, control, confounding, mediators, and moderators)

Read

- Rubin & Babbie (2016) Ch. 8-Conceptualization in Quantitative and Qualitative Inquiry
- Kumar (2011). Ch. 5
- Rocca, C. H., Rathod, S., Falle, T., Pande, R. P., & Krishnan, S. (2009). Challenging assumptions about women's empowerment: Social and economic resources and domestic violence among young married women in urban South India. *International Journal of Epidemiology*, 38(2), 577-585.

Skim

- Meyer, B. D., & Sullivan, J. X. (2012). Identifying the disadvantaged: Official poverty, consumption poverty, and the new supplemental poverty measure. *The Journal of Economic Perspectives*, 111-135.
- Kishor, S., & Gupta, K. (2004). Women's empowerment in India and its states: Evidence from the NFHS. *Economic and Political Weekly*, 694-712.
- Wicker, A. W. (1985). Getting out of our conceptual ruts: strategies for expanding conceptual frameworks. *American Psychologist*, 40(10), 1094-1103.

Assignment Due

- Research proposal question and significance

Week 5 (Oct 3): Measurement

- Levels of measurement
- Typologies, scales, indexes
- Measurement error
- Reliability
- Validity

Read

- Rubin & Babbie (2016) Ch. 9-Measurement
- Kumar (2011). Ch. 10, 11
- Radloff, L. S. (1977) The CES-D scale: A self report depression scale for research in the general population. *Applied Psychological Measurement* 1, 385-401.
- Choose one article from:
 - Zea, M. C., Asner-Self, K., Birman, D., & Buki, L. (2003). The Abbreviated Multidimensional Acculturation Scale: Empirical validation with two Latino/a samples. *Cultural Diversity and Ethnic Minority Psychology*, 9, 107-126.
 - Berger, B. E., Ferrans, C. E., & Lashley, F. R. (2001). Measuring stigma in people with HIV: Psychometric assessment of the HIV stigma scale. *Research in Nursing and Health*, 24, 518-529.
 - Whooley M. A., Avins A. L., Miranda J., and W. S. Browner. (1997). Case-finding instruments for depression. Two questions are as good as many. *J Gen Intern Med* 12(7):439-45.
 - Loo, C. M., et al. (2001). Measuring exposure to racism: development and validation of a race-related stressor scale (RRSS) for Asian American Vietnam veterans. *Psychological Assessment*, 13(4), 503-520.
 - Wilson, P. A., et al. (2008). Scale development of a measure to assess community-based and clinical intervention group environments. *Journal of Community Psychology*, 36(3), 271-288.

Week 6 (Oct 10): Questionnaire Design and Survey Research

- Writing questions
- Designing questionnaires
- Survey administration/modes

Read

- Rubin & Babbie (2016) Ch. 10-Constructing Measurement Instruments
- Rubin & Babbie (2016) Ch. 16-Survey Research
- Kumar (2011). Ch. 9

- Pilotte, W. J., & Gable, R. K. (1990). The impact of positive and negative item stems on the validity of a computer anxiety scale. *Educational and Psychological Measurement*, 50(3), 603-610.

Skim

- Adamek, R. J. (1994). A review: Public opinion and Roe V. Wade: measurement difficulties. *Public Opinion Quarterly*, 409-418.

Assignment Due

- Research proposal Background

Week 7 (Oct 17): Sampling

- Probability sampling
- Non-probability sampling
- External validity

Read

- Rubin & Babbie (2016) Ch. 15-Sampling
- Kumar (2011). Ch. 12
- Heckathorn, D. D., & Jeffri, J. (2001). Finding the beat: Using respondent-driven sampling to study jazz musicians. *Poetics*, 28(4), 307-329.
- Woodhall, S. C., Nichols, T., Alexander, S., da Silva, F. C., Mercer, C. H., Ison, C., Gill, O. N., & Soldan, K. (2015). Can we use postal surveys with anonymous testing to monitor chlamydia prevalence in young women in England? Pilot study incorporating randomised controlled trial of recruitment methods. *Sexually transmitted infections*, 91(6), 412-414.

Assignment Due

- Research proposal Specific Aims

Week 8 (Oct 24): Sampling

- Sample size and sampling error
- Effect size
- Power

Read

- Rubin & Babbie (2016) Ch. 15-Sampling (section on Sample Size and Sampling Error)
- Kumar (2011). Ch. 12 (section on The Calculation of Sample Size)
- Moher, D., Dulberg, C. S., & Wells, G. A. (1994). Statistical power, sample size, and their reporting in randomized controlled trials. *JAMA*, 272(2), 122-124.
- Cohen, J. (1992). A power primer. *Psychological bulletin*, 112(1), 155-159.

Skim

- Hansen, W. B., & Collins, L. M. (1994). Seven ways to increase power without increasing N. *NIDA research monograph*, 142, 184-195.
- Teitler, J. O., Reichman, N. E., & Sprachman, S. (2003). Costs and benefits of improving response rates for a hard-to-reach population. *Public Opinion Quarterly*, 126-138.

Week 9 (Oct 31): Research Design

- Cross-sectional
- Longitudinal
- Repeated cross-section
- Cohort

Read

- Rubin & Babbie (2016) Ch. 7-Problem Formulation (sections on The Time Dimension, Units of Analysis)
- Kumar (2011). Ch. 7, 8
- Geerlings, S. W. et al. (2000). Physical health and the onset and persistence of depression in older adults: an eight-wave prospective community-based study. *Psychological Medicine*. 30:369-380.

Skim

- Caplan, L. S., Lane, D. S., & Grimson, R. O. G. E. R. (1995). The use of cohort vs repeated cross-sectional sample survey data in monitoring changing breast cancer screening practices. *Preventive medicine*, 24(6), 553-556.

Week 10 (Nov 7): Causality

- What is a cause?
- Counterfactual
- Causal inference

Read

- Rubin & Babbie (2016) Ch. 11-Causal Inference and Experimental Designs
- Freedman, D. A. (1991). Statistical models and shoe leather. *Sociological methodology*, 21(2), 291-313.
- Duncan, G. J. (2008). When to promote, and when to avoid, a population perspective. *Demography*, 45, 763-784.
- Holland, P. W. (1986). Statistics and causal inference. *Journal of the American Statistical Association*, 81(396), 945-960.

Assignment Due

- Research proposal Sampling Approach, Method of data collection and Measures

Week 11 (Nov 14): Experimental Designs

- RCTs
- Threats to validity

Read

- Ng, S. M., Li, A. M., Lou, V. W., Tso, I. F., Wan, P. Y., & Chan, D. F. (2008). Incorporating family therapy into asthma group intervention: A randomized waitlist-controlled trial. *Family process*, 47(1), 115-130.
- Bertrand, M., & Mullainathan, S. (2004). Are Emily and Greg More Employable Than Lakisha and Jamal? A Field Experiment on Labor Market Discrimination. *The American Economic Review*, 94(4), 991-1013.
- Zimmerman, D. J. (2003). Peer effects in academic outcomes: Evidence from a natural experiment. *Review of Economics and statistics*, 85(1), 9-23.

Skim

- Chapter 2 of Lieberson, S. (1985). *Making it Count: The Improvement of Social Research and Theory*. University of California Press

Week 12 (Nov 21): Quiz

Week 13 (Nov 28): Quasi-experimental designs

- Pre-post designs, difference-in-differences, and other extensions

Read

- Rubin & Babbie (2016) Ch. 12-Quasi-Experimental Designs
- Kumar (2011). Ch. 8
- Card, D., & Krueger, A. B. (1994). Minimum wages and employment: A case study of the fast-food industry in New Jersey and Pennsylvania. *The American Economic Review*, 84(4), 772.
- Kaushal, N. et al. (2007). Labor market effects of September 11th on Arab and Muslim residents of the United States. *Journal of Human Resources*, 42(2):275-308.

Assignment Due

- Research proposal Study Design

Week 14 (Dec 5): Fixed Effects

- Review
- Sibling studies and Fixed effects

Read

- Hoffman, S. D., Foster, E. M., & Furstenberg Jr, F. F. (1993). Reevaluating the costs of teenage childbearing. *Demography*, 1-13.

Skim

- Aaronson, D. (1998). Using sibling data to estimate the impact of neighborhoods on children's educational outcomes. *Journal of Human Resources*, 915-946.

Week 15 (Dec 12): Research proposal presentations

Read

- Rubin & Babbie (2016) Ch. 23-Writing Research Proposals and Reports
- Kumar (2011). Ch. 13

Assignment Due

- Research proposal presentation

Academic Integrity Policy

All work submitted in a graduate course must be your own. It is unethical and a violation of the University's Academic Integrity Policy to present the ideas or words of another without clearly and fully identifying the source. Inadequate citations will be construed as an attempt to misrepresent the cited material as your own. Use the citation style preferred by the discipline.

Plagiarism is the representation of the words or ideas of another as one's own in any academic exercise. To avoid plagiarism, every direct quotation must be identified by quotation marks or by appropriate indentation and must be properly cited in the text or in a footnote. Acknowledgement is required when material from another source is stored in print, electronic, or other medium and is paraphrased or summarized in whole or in part in one's own words. To acknowledge a paraphrase properly, one might state: "to paraphrase Plato's comment..." and conclude with a footnote identifying the exact reference. A footnote acknowledging only a directly quoted statement does not suffice to notify the reader of any preceding or succeeding paraphrased material. Information which is common knowledge, such as names of leaders of prominent nations, basic scientific laws, etc., need not be footnoted; however, all facts or information obtained in reading or research that are not common knowledge among students in the course must be acknowledged. In addition to materials specifically cited in the text, only materials that contribute to one's general understanding of the subject may be acknowledged in the bibliography. Plagiarism can, in some cases, be a subtle issue. Any question about what constitutes plagiarism should be discussed with the faculty member.

Plagiarism along with any and all other violations of academic integrity by graduate and professional students will normally be penalized more severely than violations by undergraduate students. Since all violations of academic integrity by a graduate or professional student are potentially separable under the Academic Integrity Policy, faculty members should not adjudicate alleged academic integrity violations by graduate and professional students, but should refer such allegations to the appropriate Academic Integrity Facilitator (AIF) or to the Office of Student Conduct. The AIF that you should contact is Antoinette Y. Farmer, 848.932.5358. The student shall be notified in writing, by email or hand delivery, of the alleged violation and of the fact that the matter has been referred to the AIF for adjudication. This notification shall be done within 10 days of identifying the alleged violation. Once the student has been notified of the allegation, the student may not drop the course or withdraw from the school until the adjudication process is complete. A TZ or incomplete grade shall be assigned until the case is resolved. For more information regarding the Rutgers Academic Integrity Policies and Procedures, see: <http://academicintegrity.rutgers.edu>.

Disability Accommodation

Rutgers University welcomes students with disabilities into all of the University's educational programs. In order to receive consideration for reasonable accommodations, a student with a disability must contact the appropriate disability services office at the campus where you are officially enrolled, participate in an intake interview, and provide documentation: <https://ods.rutgers.edu/students/documentation-guidelines>. If the documentation supports your request for reasonable accommodations, your campus' disability services office will provide you with a Letter of Accommodations. Please share this letter with your instructors and discuss the accommodations with them as early in your courses as possible. To begin this process, please complete the Registration form on the ODS web site at: <https://ods.rutgers.edu/students/registration-form>.