

Research Methodology

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Instructor

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Course

Number: RSM 3062
Section: L30
Class Times: Mondays, 10:00 am – 1:00 pm
Class Room: Rotman, 6024

Office Hours

Mondays, 1:00 pm – 2:00 pm
Additional availabilities by appointment

Textbooks:

Lance, C. E., & Vandenberg, R. J. (2009). *Statistical and methodological myths and urban legends: Doctrine, verity and fable in the organizational and social sciences*. New York, NY: Routledge.
ISBN: 0805862374

Reis, H. T. & Judd, C. M. (2014). *Handbook of research methods in social and personality psychology (2nd edition)*. New York: Cambridge.
ISBN: 9781107600751

Course Description

Welcome! This course is a seminar designed to train management Ph.D. students (particularly those in Organizational Behaviour/Human Resource Management) in the fundamentals of the exquisite art of research method design. The course will cover a range of topics, ranging from common methodological confounds to psychological measurement to conceptual issues in data analysis (see below for a full listing of topics). Any week's topic could easily be a semester-long course of its own. Thus, this seminar serves as a sort of methodological "survey" course that will make students sophisticated readers and novice users of a variety of issues in research methodology. I encourage students to continue to pursue courses devoted to more specific research methods (e.g., courses in hierarchical linear modeling or qualitative data analysis) beyond this course.

There are no formal pre-requisites for this course, but I presume students will have prior knowledge of basic statistical concepts (e.g., effect sizes, null-hypothesis significance testing, correlation and regression, and ANOVA). If you do not have a strong grasp of these concepts, I recommend that you seek out relevant background courses in statistics, psychology, sociology, and/or economics prior to taking this course.

Research methods form the backbone of what we can discover as scientists. Upon completion of this course, students should be able to (1) understand the core strengths and limitations of most studies they encounter, (2) proficiently communicate these strengths and limitations in written and oral formats, and (3) design their own studies that are appropriate for their question and that fill a gap in the existing literature. The class meetings and the assignments within this course are a petri dish for growing these skills and abilities.

Assignments and Evaluation

The assignments in the course serve as practice exercises for applying research concepts covered in the readings. The marking breakdown will be as follows:

Assignment	Points
Participation	20 pts
Article Presentation	20 pts
Manuscript Reviews (2)	30 pts
"Study 2" Paper	30 pts
TOTAL	100 pts

Participation (20%). Much of one's research career unfolds in a social arena. Whether we're collaborating with a colleague to design a study, discussing research at a conference, or describing our research interests on a job interview, being able to participate actively and thoughtfully in a conversation underpins much of our success. And let's face it: many academics are very smart but also painfully awkward to talk to. Don't be that person. Use this class to figure out and improve whatever you need to work on: if you lean toward introversion, figure out how to dial it up a notch when you need to; if you are more extraverted, work on holding back sometimes to listen more.

Then, of course, there's the standard participation script I would give to my undergraduates: you should arrive on time having thoughtfully completed all the readings. Attend every class. In the case of unavoidable absence, please contact me in advance and let me know. Use the readings as fodder for thoughtful reflection on great ideas and for identifying areas where you need more clarity and understanding; share both of these with us in class.

Article Presentation (20%). Students will select one week and sign up to guide us in discussion about an article related to the methodology covered that week. For example, if a student signed up for "Week 8: Meta-Analysis," they would find an article that uses meta-analysis, present the article to the class (covering its research question, methodology, and core findings; approximately 10 – 15 minutes), and guide the class in a discussion about the strengths and weaknesses of the meta-analytic methods used to address the research question (20 – 30 minutes). The article need not come specifically from the field of OB/HR; it would likely benefit you and the class more generally to choose an article from a research area that you know relatively well.

Please ensure that your treatment of the article is balanced (i.e., represent its strengths as well as its weaknesses). Although science cannot grow without identifying and overcoming the limitations in its research, there are few things that bother me as much as methodologists who enjoy shaking their fingers at the shortcomings of other researchers so that they can boost their own egos. Thus, you and the class would be well served to avoid presenting a particularly poorly-designed study and plucking low-hanging fruit by harping on its limitations.

Manuscript reviews (2 reviews, 15 points each, 30%). In weeks with no student presentation, I will send out a sample manuscript that is related to the research method being discussed during that week. Students should treat this manuscript like a manuscript that is been submitted for publication in a journal and act as reviewers providing an evaluation for an editor. The review (approximately 2-3 pages in length) will be due at the beginning of the class for which it is assigned, and we will devote a portion of class time to discussing the article.

Research Paper: “Study 2” (30%). To complete the course, students will write a brief research proposal. No one has ever conducted a “perfect” research study; rather, science progresses because we piece together individual studies that have different sets of limitations to (hopefully) form a cogent research literature. The premise for this proposal is to build these patchwork skills by designing a complementary study. Specifically, students will choose an existing research article, identify its strengths and limitations, and design a follow-up study to test whether the results observed in the first study hold when a different methodology is adopted. The methodology the students adopt in their “Study 2” should specifically address and test as many potential limitations they identify in the target article as possible, though the scope of the research should be something that a granting committee would view as feasible and worthy of receiving funding.

Marking Policies

Late work. A hard copy of your assignment is due at 10:00 am on the due date. Late work will be deducted 10% each 24 hours that it is late, unless accompanied by a written note from an external source citing an acceptable excuse (e.g., doctor’s note for illness) within two weeks of the deadline date.

Course Marking

Grade	Percentage	Definition
A+	90 - 100	Excellent
A	85 - 89	
A-	80 - 84	
B+	77 - 79	Good
B	73 -76	
B-	70 - 72	
FZ	0 - 69	Inadequate

Academic Integrity

Academic integrity is essential to a positive teaching and learning environment. All students enrolled in University courses are expected to complete coursework responsibilities with fairness and honesty. Failure to do so by seeking unfair advantage over others or misrepresenting someone else's work as your own can result in disciplinary action. Scholastic dishonesty is defined as follows:

Scholastic Dishonesty: Scholastic dishonesty means plagiarizing; cheating on assignments or examinations; engaging in unauthorized collaboration on academic work; taking, acquiring or using test materials without faculty permission; submitting false or incomplete records of academic achievement; acting alone or in cooperation with another to falsify records or to obtain dishonestly grades, honors, awards, or professional endorsement; altering, forging, or misusing a University academic record; or fabricating or falsifying data, research procedures, or data analysis. Intentionality is not part of the definition of scholastic dishonesty.

I expect all assignments in the course to be completed independently. Challenge yourself to make your perspective and idea as strong as possible on your own, and build the confidence to express it without needing it to first be affirmed or refined by others. Then, when we meet in class, we can learn from one another and have our individual perspectives strengthened by incorporating others’ perspectives.

Additional information about the university’s policy and regulations regarding academic integrity, and advice about how to make sure you avoid academic dishonesty, can be found at <http://www.utoronto.ca/academicintegrity/>.

Course Topics

Date	Topic
January 5	Introduction, Theory Testing
January 12	The Replication Crisis, Sampling Error, Significance Testing
January 19	Research Settings
January 26	Research Design
February 2	Scale Creation & Validation
February 9	Measurement Error, Range Restriction, and Common Method Variance
February 16	Break--No classes
February 23	Mediation, Moderation, & Relative Importance
March 2	Meta-analysis
March 9	Levels of Analysis; Qualitative Data
March 16	Latent Variable Modeling
March 23	Longitudinal Designs
March 30	Icky Data, Communication, & Ethics

Weekly Readings (In Suggested Reading Order)

NOTE:

Journal articles can be accessed through the university's library system or via links on Blackboard. Book chapters will generally be made available to you on Blackboard, with the exception of chapters from your assigned texts (Lance & Vandenberg and Reis & Judd).

Week 1: Theory testing (January 5)

- Pedhazur, E. J., & Schmelkin, L. P. (1991). Theories, problems, and hypotheses *Measurement, design, and analysis: An integrated approach* (pp. 180-210). Hillsdale, NJ: Lawrence Erlbaum.
- Campbell, J. P. (1990). The role of theory in industrial and organizational psychology. In M. D. Dunnette & L. M. Hough (Eds.), *Handbook of industrial and organizational psychology* (Vol. 1, pp. 39-73). Palo Alto, CA: Consulting Psychologists Press.
- Colquitt, J. A., & Zapata-Phelan, C. P. (2007). Trends in theory building and theory testing: A five-decade study of the "Academy of Management Journal". *Academy of Management Journal*, 50, 1281-1303.
- Dunnette, M. D. (1966). Fads, fashions, and folderol in psychology. *American Psychologist*, 21, 343-352.

Week 2: Sampling Error, Significance Testing, and the Replication Crisis (January 12)

- Cohen, J. (1994). The earth is round ($p < .05$). *American Psychologist*, 49, 997-1003.
- Bartlett, T. (2013). Power of suggestion. *Chronicle of Higher Education*. Retrieved from <http://chronicle.com/article/Power-of-Suggestion/136907/>
- Giner-Sorolla, R. (2012). Science or art? How aesthetic standards grease the way through the publication bottleneck but undermine science. *Perspectives on Psychological Science*, 7, 562-571.
- Simmons, J. P., Nelson, L. D., & Simonsohn, U. (2011). False-positive psychology: Undisclosed flexibility in data collection and analysis allows presenting anything as significant. *Psychological Science*, 22, 1359-1366.
- Meehl, P. E. (1978). Theoretical risks and tabular asterisks: Sir Karl, Sir Ronald, and the slow progress of soft psychology. *Journal of Consulting and Clinical Psychology*, 46, 806-834.

Week 3: Research Setting (January 19)

- Ilgén, D. R. (1986). Laboratory research: A question of when, not if. In E. A. Locke (Ed.), *Generalizing from laboratory to field settings* (pp. 257-268). Lexington, MA: Lexington.
- Campbell, J. P. (1986). Labs, fields, and straw issues. In E. A. Locke (Ed.), *Generalizing from laboratory to field settings* (pp. 269-279). Lexington, MA: Lexington.

- Aronson, E., Ellsworth, P. C., Carlsmith, J. C., & Gonzales, M. H. (1990). Experimental design. In *Methods of research in social psychology* (pg. 114 – 156). New York: McGraw-Hill.
- Greenberg, J., & Folger, R. (1988). Subject roles *Controversial issues in social research methods* (pp. 95-120). New York, NY: Springer-Verlag Publishing.
- King, E. B., Hebl, M. R., Botsford Morgan, W., & Ahmad, A. S. (2013). Field experiments on sensitive organizational topics. *Organizational Research Methods, 16*, 501-521.
- Cialdini, R. B. (2009). We have to break up. *Perspectives on Psychological Science, 4*, 5-6.

Week 4: Research Design (January 26)

- West, S. G., Cham, H., & Liu, Y. (2014). Causal inference and generalization in field settings: Experimental and quasi-experimental designs. In H. T. Reis & C. M. Judd (Eds.), *Handbook of research methods in social and personality psychology* (pp. 49-80). New York, NY: Cambridge.
- Cook, T. D., Campbell, D. T., & Peracchio, L. (1990). Quasi experimentation. In M. D. Dunnette & L. M. Hough (Eds.), *Handbook of Industrial and Organizational Psychology* (Vol. 1, pp. 491-576). Palo Alto, CA: Consulting Psychologists Press.
Excerpts: pages 516 – 549; 550 – 555; 568 – 571.
- Grant, A. M., & Wall, T. D. (2009). The neglected science and art of quasi-experimentation: Why-to, when-to, and how-to advice for organizational researchers. *Organizational Research Methods, 12*, 653-686.
- Connelly, B. S., Sackett, P. R., & Waters, S. D. (2013). Balancing treatment and control groups in quasi-experiments: An introduction to propensity scoring. *Personnel Psychology, 66*, 407-442.

Week 5: Scale Creation and Validation (February 2)

- Clark, L. A., & Watson, D. (1995). Constructing validity: Basic issues in objective scale development. *Psychological Assessment, 7*, 309-319.
- John, O. P., & Benet-Martinez, V. (2014). Measurement: Reliability, construct validation, and scale construction. In H. T. Reis & C. M. Judd (Eds.), *Handbook of research methods in social and personality psychology* (pp. 473-503). New York, NY: Cambridge University Press.
- Netemeyer, R. G., Bearden, W. O., & Sharma, S. (2003). Steps 1 and 2: Construct definition and generating and judging measurement items. *Scaling procedures: Issues and applications* (pp. 88-103). Thousand Oaks: Sage.
- Gawronski, B. & de Houwer, J. (2014). Implicit measures in social and personality psychology. In H. T. Reis & C. M. Judd (Eds.), *Handbook of research methods in social and personality psychology* (pp. 283-310). New York, NY: Cambridge University Press.
- Weiss, D. J., & Yoes, M. E. (1991). Item response theory. In R. K. Hambleton & J. N. Zaal (Eds.), *Advances in educational and psychological testing: Theory and applications* (pp. 69-95). New York, NY: Springer.

Week 6: The Artifacts – Measurement Error, Range Restriction, and Method Variance (February 9)

- Schmidt, F. L., & Hunter, J. E. (1996). Measurement error in psychological research: Lessons from 26 research scenarios. *Psychological Methods, 1*, 199-223.
- Schmidt, F. L., & Hunter, J. E. (1999). Theory testing and measurement error. *Intelligence, 27*, 183-198.
- Thorndike, R. L. (1949). Taking account of range restriction *Personnel selection: Test and measurement techniques* (pp. 169-176). New York: Wiley.
- Podsakoff, P. M., MacKenzie, S. B., Lee, J. Y., & Podsakoff, N. P. (2003). Common method biases in behavioral research: A critical review of the literature and recommended remedies. *Journal of Applied Psychology, 88*, 879-903. doi: 10.1037/0021-9010.88.5.879

Break: Family Day (February 16)

Week 7: Mediation, Moderation, & Relative Importance (February 23)

- Cooper, W. H., & Richardson, A. J. (1986). Unfair comparisons. *Journal of Applied Psychology, 71*, 179-184.
- Tonidandel, S., & LeBreton, J. M. (2011). Relative importance analysis: A useful supplement to regression analysis. *Journal of Business and Psychology, 26*, 1-9.
- MacKinnon, D. P., Fairchild, A. J., & Fritz, M. S. (2007). Mediation analysis. *Annual Review of Psychology, 58*, 593-614.
- Edwards, J. R. (2009). Seven deadly myths of testing moderation in organizational research. In C. E. Lance & R. J. Vandenberg (Eds.), *Statistical and methodological myths and urban legends: Doctrine, verity and fable in the organizational and social sciences* (pp. 143-164). New York, NY: Routledge.

Muller, D., Judd, C. M., & Yzerbyt, V. Y. (2005). When moderation is mediated and mediation is moderated. *Journal of Personality and Social Psychology*, *89*, 852-863.

Week 8: Meta-Analysis (March 2)

- Glass, G. V. (2000). *Meta-analysis at 25*. Unpublished manuscript. Retrieved from <http://glass.ed.asu.edu/gene/papers/meta25.html>
- Schmidt, F. L. (2012). Meta-analysis. In J. A. Schinka & W. F. Viliver (Eds.), *Handbook of psychology: Research methods in psychology* (Vol. 2). Hoboken, NJ: Wiley.
- Aguinis, H., Pierce, C. A., Bosco, F. A., Dalton, D. R., & Dalton, C. M. (2011). Debunking myths and urban legends about meta-analysis. *Organizational Research Methods*, *14*, 306-331.
- Kepes, S., Banks, G. C., McDaniel, M., & Whetzel, D. L. (2012). Publication bias in the organizational sciences. *Organizational Research Methods*, *15*, 624-662.
- Schmidt, F. L., & Oh, I. S. (2013). Methods for second order meta-analysis and illustrative applications. *Organizational Behavior and Human Decision Processes*, *121*, 204-218.

Week 9: Levels of Analysis; Qualitative Data (March 9)

- Ostroff, C. (1993). Comparing correlations based on individual-level and aggregated data. *Journal of Applied Psychology*, *78*, 569-582.
- Klein, K. J., Dansereau, F., & Hall, R. J. (1994). Levels issues in theory development, data collection, and analysis. *Academy of Management Review*, *19*, 195-229.
- Hofmann, D. A., Griffin, M. A., & Gavin, M. B. (2000). The application of hierarchical linear modeling to organizational research. In K. J. Klein & S. W. J. Kozlowski (Eds.), *Multilevel theory, research, and methods in organizations: Foundations, extensions, and new directions* (pp. 467-511). San Francisco, CA: Jossey-Bass.
- Locke, K., & Golden-Biddle, K. (2002). An introduction to qualitative research: Its potential for industrial and organizational psychology. In S. G. Rogelberg (Ed.), *Handbook of research methods in industrial and organizational psychology* (pp. 99-118). Malden, MA: Blackwell.
- Bachiochi, P. D., & Weiner, S. P. (2002). Qualitative data collection and analysis. In S. G. Rogelberg (Ed.), *Handbook of research methods in industrial and organizational psychology* (pp. 161-183). Malden, MA: Blackwell.

Week 10: Latent Variable Modeling (March 16)

- Lei, P. W., & Wu, Q. (2007). Introduction to structural equation modeling: Issues and practical considerations. *Educational Measurement: Issues and Practice*, *26*, 33-43.
- Kenny, D. A. (2012, July 5, 2012). Measuring model fit, from <http://davidakenny.net/cm/fit.htm>
- MacCallum, R. C., & Austin, J. T. (2000). Applications of structural equation modeling in psychological research. *Annual Review of Psychology*, *51*, 201-226.
- Landis, R. S., Edwards, B. D., & Cortina, J. M. (2009). On the practice of allowing correlated residuals among indicators in structural equations models. In C. E. Lance & R. J. Vandenberg (Eds.), *Statistical and methodological myths and urban legends: Doctrine, verity and fable in the organizational and social sciences* (pp. 193-215). New York, NY: Routledge.
- Vandenberg, R. J., & Grelle, D. M. (2009). Alternative model specifications in structural equations modeling: Facts, fictions, and truth. In C. E. Lance & R. J. Vandenberg (Eds.), *Statistical and methodological myths and urban legends: Doctrine, verity and fable in the organizational and social sciences* (pp. 165-192). New York, NY: Routledge.

Week 11: Longitudinal Data Analysis (March 23)

- Zapf, D., Dormann, C., & Frese, M. (1996). Longitudinal studies in organizational stress research: A review of the literature with reference to methodological issues. *Journal of Occupational Health Psychology*, *1*, 145.
- Duncan, T. E., & Duncan, S. C. (2004). An introduction to latent growth curve modeling. *Behavior Therapy*, *35*, 333-363.
- McArdle, J. J. (2009). Latent variable modeling of differences and changes with longitudinal data. *Annual Review of Psychology*, *60*, 577-605.
- Beal, D. J., & Weiss, H. M. (2003). Methods of ecological momentary assessment in organizational research. *Organizational Research Methods*, *6*, 440-464.
- Cole, D. A., & Maxwell, S. E. (2003). Testing mediational models with longitudinal data: Questions and tips in the use of structural equation modeling. *Journal of Abnormal Psychology*, *112*, 558.

Week 12: Icky Data, Ethics, and Communication (March 30)

- Newman, D. A. (2009). Missing data techniques and low response rates: The role of systematic nonresponse parameters. In C. E. Lance & R. J. Vandenberg (Eds.), *Statistical and methodological myths and urban legends: Doctrine, verity and fable in the organizational and social sciences* (pp. 7-36). New York, NY: Routledge.
- Roth, P. L., & Switzer, F. S. (2002). Outliers and influential cases: Handling those discordant contaminated maverick rogues. In S. G. Rogelberg (Ed.), *Handbook of research methods in industrial and organizational psychology* (pp. 297-309). Malden, MA: Blackwell.
- Barnett, J. E., & Campbell, L. F. (2012). Ethics issues in scholarship. In S. J. Knapp, M. C. Gottlieb, M. M. Handelsman & L. D. VandeCreek (Eds.), *APA Handbook of ethics in psychology* (Vol. 2, pp. 309-333). Washington, DC, US: American Psychological Association.
- Fine, M. A., & Kurdek, L. A. (1993). Reflections on determining authorship credit and authorship order on faculty-student collaborations. *American Psychologist*, *48*, 1141-1147.
- Tsui, A. S. (2013). The spirit of science and socially responsible scholarship. *Management and Organization Review*, *9*, 375-394.
- Campbell, J. P. (1982). Some remarks from the outgoing editor. *Journal of Applied Psychology*, *67*, 691-700.