

MGT 691: Research Methods II: Data Analysis

Days: Mondays

Time: 10:00am to 1:00pm

Location: Bidgood 147

Instructor: Justin A. DeSimone

Office: Hewson 3001

Email: jadesimone@cba.ua.edu

Office Hours: Tuesday from 1:00pm to 2:00pm or (preferably) by appointment

Textbooks: There is no *required* textbook for this course. However, since most of the advanced analyses will be conducted using MPlus, there are two strongly recommended texts. Additionally, there will be reading assignments each week:

1. Muthen, L. K., & Muthen, B. O. (1998-2017). Mplus user's guide (8th ed.). Los Angeles, CA: Muthen & Muthen. [This is available as an electronic or hard copy when you purchase the Mplus software. It is also available for free here: http://www.statmodel.com/download/usersguide/MplusUserGuideVer_8.pdf]
2. Geiser, C. (2013). *Data analysis with Mplus*. New York: Guilford Press. [This book is better than the software user's guide, particularly if you are used to SPSS. It is currently available for \$49.00 (new) on Amazon.com]

Grading Components:

- **Tests: 30%**
 - Test #1: 15%
 - Test #2: 15%
- **Weekly Assignments: 30%**
- **Projects: 30%**
 - Analysis: 10%
 - Paper: 10%
 - Presentation: 10%
- **Attendance/Participation: 10%**

Grade Assignments			
A	90.0 or higher	D	60.0 to 69.99999
B	80.0 to 89.99999	F	0.0 to 59.99999
C	70.0 to 79.99999		

Important Dates	
August 22	First day of class
September 5	Labor Day
November 28	Last day of class

Test/Assignment Dates	
October 10	First Exam
November 28	Papers/Projects Due
December 5	Second Exam

Policies

Attendance/Participation: I never anticipate attendance problems with graduate students. All students are required to complete the assigned readings prior to class, attend all classes, and actively participate in class discussions. Extenuating circumstances will be considered on a case-by-case basis and only when notice of the absence is provided prior to the missed class. Missing an assignment, exam, or presentation is inexcusable and will result in a grade of zero.

Communication: I will communicate primarily in class or via email.

Classroom Procedures: I always attempt to begin class on time. Please do your best to arrive on time, but if you must arrive late, make sure you do not disturb the punctual students when you enter.

During lectures, you may use laptops or phones as you see fit. All I ask is that you refrain from disturbing other students.

Exams: Exams will be administered via in person or take-home format. Missing an exam, *regardless of excuse*, will result in a grade of zero. *Exam questions are moderate to high in difficulty*. Each exam will cover the assigned readings as well as some conceptual and computation content. Exams are intended to assess whether you understand the literature, concepts, and techniques well enough to perform research using advanced methodology and statistical techniques.

Assignments: Most weeks will involve a topic with an accompanying assignment. These will typically involve analyzing data and interpreting results. A few weeks will have topics where an analysis would be impractical (e.g., qualitative), but may have more assigned readings and discussion. One week (data quality) will involve a large-scale assignment. *Late assignments will not be accepted*.

Project: The project will involve collecting data, analyzing data, writing a miniature paper (partial Introduction, full Method, full Results, and partial Discussion sections), and presenting the results in class. Students should discuss project ideas with the instructor early in the semester.

Cheating: **DO NOT CHEAT**. Cheating on assignments or tests is unfair to other students (and yourself). This course has a **ZERO-TOLERANCE** policy regarding academic dishonesty. The UA Academic Misconduct Disciplinary Policy can be found at <https://provost.ua.edu/academic-misconduct/>. Any student suspected of cheating on an exam or assignment will be subject to any or all consequences outlined in the Code. For students caught cheating, consequences may range from obtaining a grade of zero on the exam (including the final) to expulsion or legal action (see <https://www.ajc.com/news/local/former-tech-student-pleads-guilty-changing-grades/md9XbwHennmq23kbZwuDEL/>).

Disability Accommodations: Accommodations for students with disabilities will be provided in accordance with UA policy. The University of Alabama Office of Disability Services website is located at <http://ods.ua.edu/>.

Severe Weather Protocol: Severe weather guidelines can be found at <https://ready.ua.edu/severe-weather-guidelines/>.

UAct: The University of Alabama is committed to an ethical, inclusive community defined by respect and civility. The UAct website (www.ua.edu/uact) provides extensive information on how to report or obtain assistance with a variety of issues, including issues related to dating violence, domestic violence, stalking, sexual assault, sexual violence or other Title IX violations, illegal discrimination, harassment, child abuse or neglect, hazing, threat assessment, retaliation, and ethical violations or fraud.

Statement on COVID-19

All University faculty, staff, and students are expected to maintain a commitment to the health and safety of our campus community. Due to the current COVID-19 pandemic, specific health and safety standards are in place to minimize exposure and community spread on campus. In the interest of your health and safety and that of all UA students, faculty and staff, the University reserves the right to change the mode of instruction or schedule of instruction at any time, based upon prevailing public health and other guidance. While the method of delivery may change, educational instruction and opportunities will continue. As such, the University will not provide a refund of tuition, in whole or in-part, based on any such changes. Detailed information on changes in format or schedule can be found at studentaccounts.ua.edu and financialaid.ua.edu.

UA students, faculty and staff are required to comply with [UA System Comprehensive Health and Safety Task Force](#) guidance regarding social distancing, face coverings and other measures.

Getting vaccinated is the best way to [Protect Our Herd](#). COVID-19 vaccines are being administered by the [University Medical Center](#), the [Student Health Center](#) and various businesses and healthcare providers. Students who [report proof of their vaccination status](#) will receive Bama Cash as a thank you gift for doing their part.

Prerequisites: MGT 690 (Research Methods I: Research Design), MKT 674 (Measurement and Structural Equation Modeling)

Course Description: A course that provides an overview of theory, research, and techniques associated with the investigation of specific research problems in organizational scholarship.

This course covers some of the more common advanced statistical techniques available to researchers in the organizational sciences. There is a focus on both the determination of appropriate techniques for specific research questions and application of the techniques using statistical software.

Objectives:

- To introduce students to topics in advanced research design and analysis
- To allow students the opportunity to practice advanced techniques using statistical software packages
- To teach students the appropriate use of advanced statistical techniques for addressing research questions

Student Learning Goals:

By the end of this course, students should be able to:

- Recognize the correct use and reporting of various research methods and statistical techniques in journal articles
- Employ the appropriate statistical technique to address various research questions in the organizational sciences
- Use multiple data management and statistical software packages to record, clean, manipulate, and analyze data
- Correctly and appropriately analyze data, interpret results, and communicate these actions effectively in writing and presentations

Subject to Change: The assigned readings and order of topics is subject to change. Course policies are not expected to change. Students will be given advance notice of any changes to the syllabus, schedule, assignments, or assigned readings.

Course Schedule

Week	Events and Topics
August 22	Introduction and review of ANOVA and regression
August 29	Dummy/Effects/Contrast coding, PCA/EFA, SEM/CFA, Measurement invariance, Relative importance, Epistemology, Qualitative
September 5	Labor Day (no class)
September 12	Psychometrics: CTT, Reliability types, Omega, Alternatives for temporal consistency, Test development, Measurement
September 19	Psychometrics: Generalizability theory, IRT
September 26	Data quality, Screening, Response rates, CMV
October 3	MA: Fixed-effect models, Random effects models, Heterogeneity and moderation, Publication bias, Confidence/Credibility/Prediction intervals, MASEM
October 10	Midterm
October 17	HLM: ICCs, r_{wg} , Homogeneity of regression Context effects, WABA and variance decomposition
October 24	HLM: OWA, RCR, IAO, SAO
October 31	Time: Paired-sample t-test, Repeated measures ANOVA, Autoregression
November 7	Time: Latent change models, Latent growth models
November 14	Miscellaneous: Polynomial regression, RSA, Logistic regression, Survival analysis
November 28	Projects and presentations due
December 5	Exam 2 due

Reading Assignments

August 22, 2022

Topics: Introduction and review of ANOVA and regression

August 29, 2022

Topics: Dummy/Effects/Contrast coding, PCA/EFA, SEM/CFA, Measurement invariance, Relative importance, Epistemology, Qualitative

Required (Quantitative):

Azen, R., & Budescu, D. V. (2003). The dominance analysis approach for comparing predictors in multiple regression. *Psychological methods*, 8, 129-148.

DeShon, R. P., & Morris, S. B. (2004). Modeling complex data structures: The general linear model and beyond. In S. G. Rogelberg (Ed). *Handbook of Research Methods in Industrial and Organizational Psychology* (pp. 390-411). Malden, MA: Blackwell.

James, L. R., Mulaik, S. A., & Brett, J. M. (2006). A tale of two methods. *Organizational Research Methods*, 9, 233-244.

Nimon, K. F., & Oswald, F. L. (2013). Understanding the results of multiple linear regression: Beyond standardized regression coefficients. *Organizational Research Methods*, 16, 650-674.

Vandenberg, R. J., & Lance, C. E. (2000). A review and synthesis of the measurement invariance literature: Suggestions, practices, and recommendations for organizational research. *Organizational Research Methods*, 3, 4-70.

[This topic is also covered in Geiser Chapter 3]

Required (Qualitative):

Amis J. M., & Silk, M. L. (2008). The philosophy and politics of quality in qualitative organizational research. *Organizational Research Methods*, 11, 456-480.

Fendt, J., & Sachs, W. (2008). Grounded theory method in management research: Users' perspectives. *Organizational Research Methods*, 11, 430-455.

Gioia, D. A., Corley, K. G., & Hamilton, A. L. (2013). Seeking qualitative rigor in inductive research: Notes on the Gioia methodology. *Organizational Research Methods*, 16, 15-31.

Hayes, A. F. (2009). Beyond Baron and Kenny: Statistical Mediation Analysis in the New Millennium. *Communication Monographs*, 76(4), 408-420.

Lincoln, Y. S. (1995). Emerging criteria for quality in qualitative and interpretive research. *Qualitative Inquiry*, 1, 275-289.

Loder, E., Groves, T., Schroter, S., Merino, J. G., & Weber, W. (2016). Qualitative research and *The BMJ. British Medical Journal*. Retrieved from <http://www.bmj.com/content/352/bmj.i641> on August 21, 2016.

Reporting Examples:

Wong, E. M., Ormiston, M. E., & Tetlock, P. E. (2011). The effects of top management team integrative complexity and decentralized decision-making on corporate social performance. *Academy of Management Journal*, 54, 1207-1228.

Shepard, D. A., Patzelt, H., & Wolfe, M. (2011). Moving forward from project failure: Negative emotions, affective commitment, and learning from the experience. *Academy of Management Journal*, 54, 1229-1259.

Tepper, B. J., Henle, C. A., Lambert, L. S., Giacalone, R. A., & Duffy, M. K. (2008). Abusive supervision and subordinates' organizational deviance. *Journal of Applied Psychology*, 93, 721-732.

Bonus Readings (Quantitative):

Aiken, L. S., & West, S. G. (1991). *Multiple regression: Testing and interpreting interactions*. Newbury Park: Sage.

Baron, R. M., & Kenny, D. (1986). The moderator–mediator variable distinction in social psychological research. *Journal of Personality and Social Psychology*, 51, 1173–1182.

Bullock, J. G., Green, D. P., & Ha, S. E. (2010). Yes, but what's the mechanism? (Don't expect an easy answer). *Journal of Personality and Social Psychology*, 98, 550-558.

Edwards, J. R., & Lambert, L. S. (2007). Methods for integrating moderation and mediation: A general analytic framework using moderated path analysis. *Psychological Methods*, 12, 1-22.

MacKinnon, D. P., Lockwood, C. M., Hoffman, J. M., West, S. G., & Sheets, V. (2002). A comparison of methods to test mediation and other intervening variable effects. *Psychological Methods*, 7, 83-104.

Preacher, K. J., Rucker, D. D., & Hayes, A. F. (2007). Addressing moderated mediation hypotheses: Theory, methods, and prescriptions. *Multivariate Behavioral Research*, 42, 185-227.

Schoen, J. L., DeSimone, J. A., & James, L. R. (2011). Exploring joint variance between independent variables and a criterion: Meaning, effect, and size. *Organizational Research Methods*, 14, 674-695.

Sobel, M. E. (1982). Asymptotic intervals for indirect effects in structural equations models. In S. Leinhardt (Ed.), *Sociological methodology* (pp. 290-312). San Francisco: Jossey Bass.

Shrout, P.E., & Bolger, N. (2002). Mediation in experimental and non-experimental studies: New procedures and recommendations. *Psychological Methods*, 7, 422-445.

Tonidandel, S., & LeBreton, J. M. (2011). Relative importance analysis: A useful supplement to regression analysis. *Journal of Business and Psychology*, 26, 1-9.

Entire issue of *Organizational Research Methods*, April 2008, volume 11 number 2.

Bonus Readings (Qualitative):

The rest of the 2008 special issue in ORM (Volume 11, Number 3).

Cassell, C. & Symon, G. (2011). Assessing ‘good’ qualitative research in the work psychology field: A narrative analysis. *Journal of Occupational and Organizational Psychology*, 84, 633-650.

Hanson, W. E., Creswell, J. W., Clark, V. L. P., Petska, K. S., & Creswell, J. D. (2005). Mixed methods research designs in counseling psychology. *Journal of Counseling Psychology*, 52, 224-235.

Pratt, M. G., & Bonnaccio, S. (2016). Qualitative research in I-O psychology: Maps, myths, and moving forward. *Industrial and Organizational Psychology: Perspectives on Science and Practice*, 9, 693-715.

Salmon, P. (2003). How do we recognize good research? *Psychologist*, 16, 24-27.

Strange, K. C., & Miller, W. L. (2006). Publishing multimethod research. *Annals of Family Medicine*, 4, 292-294.

September 5, 2021: Labor Day

No readings (though I strongly suggest using this time to read ahead)

September 12, 2022

Topics: Psychometrics: CTT, Reliability types, Omega, Alternatives for temporal consistency, Test development, Measurement

Required:

Cho, E. (2016). Making reliability reliable: A systematic approach to reliability coefficients. *Organizational Research Methods, 19*, 651-682.

Cronbach, L. J. (1947). Test 'reliability': Its meaning and determination. *Psychometrika, 12*, 1-15.

Cronbach, L. J. (1951). Coefficient alpha and the internal structure of tests. *Psychometrika, 16*, 297-334.

DeSimone, J. A. (2015). New techniques for evaluating temporal consistency. *Organizational Research Methods, 18*, 133-152.

Bonus Readings:

Messick, S. (1995). Validity of psychological assessment: Validation of inferences from persons' responses and performances as scientific inquiry into score meaning. *American Psychologist, 9*, 741-749.

Jackson, D. N. (1975). The relative validity of scales prepared by naïve item writers and those based on empirical methods of personality scale construction. *Educational and Psychological Measurement, 35*, 361-370.

September 19, 2022

Topics: Psychometrics: Generalizability theory, IRT

Required:

Cronbach, L. J., Rajaratnam, N., & Gleser, G. C. (1963). Theory of generalizability: A liberalization of reliability theory. *British Journal of Statistical Psychology, 16*, 137-163.

Embretson, S. E. (1996). The new rules of measurement. *Psychological Assessment, 8*, 341-349.

Raykov, T. (1997). Estimation of composite reliability for congeneric measures. *Applied Psychological Measurement*, 21, 173-184.

Samejima, F. (1994). Estimation of reliability coefficients using the test information function and its modifications. *Applied Psychological Measurement*, 18, 229-244.

Tay, L., Meade, A. W., & Cao, M. (2015). An overview and practical guide to IRT measurement equivalence analysis. *Organizational Research Methods*, 18, 3-46.

Reporting Examples:

DeSimone, J. A., Harms, P. D., Vanhove, A. J., & Herian, M. N. (2017). Development and validation of the Five-by-five Resilience Scale. *Assessment*, 24, 778-797.

DeSimone, J. A. & James, L. R. (2015). An analysis of the item characteristics of the Conditional Reasoning Test of Aggression. *Journal of Applied Psychology*, 100, 1872-1886.

Gray-Little, B., Williams, V. S. L., & Hancock, T. D. (1997). An item response theory analysis of the Rosenberg Self-Esteem Scale. *Personality and Social Psychology Bulletin*, 23, 443-451.

Bonus Reading:

Cronbach, L. J., Glesser, G. C., Nanda, H., & Rajaratnam, N. (1972). *The dependability of behavioral measurements*. New York: Wiley.

Joreskog, K. G. (1971). Statistical analysis of sets of congeneric tests. *Psychometrika*, 36, 109-133.

Nye, C. D., Joo, S.-H., Zhang, B., & Stark, S. (2020). Advancing and Evaluating IRT Model Data Fit Indices in Organizational Research. *Organizational Research Methods*, 23, 457-486.

Orlando, M., & Thissen, D. (2000). Likelihood-based item-fit indices for dichotomous item response theory models. *Applied Psychological Measurement*, 24, 50-64.

Shavelson, R. J., & Webb, N. M. (1981). Generalizability theory: 1973-1980. *British Journal of Mathematical and Statistical Psychology*, 34, 133-166.

September 26, 2022

Topics: Data quality, Screening, Response rates, CMV

Required:

- Couch, A., & Keniston, K. (1960). Yeasayers and naysayers: Agreeing response set as a personality variable. *Journal of Abnormal and Social Psychology*, 60, 151-174.
- DeSimone, J. A., Harms, P. D., & DeSimone, A. J. (2015). Best practice recommendations for data screening. *Journal of Organizational Behavior*, 36, 171-181.
- Podsakoff, P. M., MacKenzie, S. B., & Podsakoff, N. P. (2012). Sources of method bias in social science research and recommendations on how to control it. *Annual Review of Psychology*, 63, 539-569.
- Rogelberg, S. G. & Stanton, J. M. (2007). Understanding and dealing with organizational survey nonresponse. *Organizational Research Methods*, 10, 195-209.
- Switzer, F. S., & Roth, P. L. (2004). Coping with missing data. In S. G. Rogelberg (Ed). *Handbook of Research Methods in Industrial and Organizational Psychology*. Malden, MA: Blackwell.

Reporting Examples:

- Bock, A. J., Opsahl, T., George, G., & Gann, D. M. (2012). The effects of culture and structure on strategic flexibility during business model innovation. *Journal of Management Studies*, 49, 279-305.
- Tumasjan, A., Strobel, M., & Welpe, I. (2011). Ethical leadership evaluations after moral transgression: Social distance makes the difference. *Journal of Business Ethics*, 99, 609-622.

Bonus Readings:

- Becker, T. E. (2005). Potential problems in the statistical control of variables in organizational research: A qualitative analysis with recommendations. *Organizational Research Methods*, 8, 274-289.
- Conway, J. M., & Lance, C. E. (2010). What reviewers should expect from authors regarding common method bias in organizational research. *Journal of Business and Psychology*, 25, 325-334.
- Halbesleben, J. R. B. & Whitman, M. (2013). Evaluating survey quality in health services research: A decision framework for assessing nonresponse bias. *Health Services Research*, 48, 913-930.

Newman, D. A. (2014). Missing data: Five practical guidelines. *Organizational Research Methods, 17*, 372-411.

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.

Richardson, H. A., Simmering, M. J., & Sturman, M. C. (2009). A tale of three perspectives: Examining post hoc statistical techniques for detection and correction of common method variance. *Organizational Research Methods, 12*, 762-800.

Spector, P.E. (2006). Method variance in organizational research: Truth or urban legend? *Organizational Research Methods, 9*, 221-232.

Williams, L. J., Cote, J. A., & Buckley, M. R. (1989). Lack of method variance in self-reported affect and perceptions at work: Reality or artifact? *Journal of Applied Psychology, 74*, 462-468.

Williams, L. J., Hartman, N., & Cavazotte, F. (2010). Method variance and marker variables: A review and comprehensive CFA marker technique. *Organizational Research Methods, 13*, 477-514.

October 3, 2022

Topics: MA: Fixed-effect models, Random effects models, Heterogeneity and moderation, Publication bias, Confidence/Credibility/Prediction intervals, MASEM

Required:

Aguinis, H., Dalton, D. R., Bosco, F. A., Pierce, C. A., & Dalton, C. M. (2010). Meta-analytic choices and judgment calls: Implications for theory building and testing, obtained effect sizes, and scholarly impact. *Journal of Management, 37*, 5-38.

Borenstein, M., Hedges, L. V., Higgins, J. P. T., & Rothstein, H. R. (2010). A basic introduction to fixed-effect and random-effects models for meta-analysis. *Research Synthesis Methods, 1*, 97-111.

Cortina, J. M. (2003). Apples and oranges (and pears, oh my!): The search for moderators in meta-analysis. *Organizational Research Methods, 6*, 415-439.

DeSimone, J. A., Brannick, M. T., O'Boyle, E. H., & Ryu, J. W. (In Press). Recommendations for reviewing meta-analyses in organizational research. *Organizational Research Methods*.

DeSimone, J. A., Köhler, T., & Schoen, J. L. (2020). If it were only that easy: The use of meta-analytic research by organizational scholars. *Organizational Research Methods*, 22, 867-891. [Emphasis on the "Findings and Discussion section along with the first online supplement]

Higgins, J. P. T., & Thompson, S. G. (2002). Quantifying heterogeneity in meta-analysis. *Statistics in Medicine*, 21, 1539-1558.

Köhler, T., Cortina, J. M., Kurtessis, J. N., & Golz, M. (2015). Are we correcting correctly? Interdependence of reliabilities in meta-analysis. *Organizational Research Methods*, 18, 355-428.

Rothstein, H. R., Sutton, A. J., & Borenstein, M. (2005). Publication bias in meta-analysis. In H. R. Rothstein, A. J. Sutton, & M. Borenstein (eds.), *Publication Bias in Meta-analysis* (pp. 1-7). West Sussex, UK: Wiley.

Schmidt, F. L. (2017). Statistical and measurement pitfalls in the use of meta-regression in meta-analysis. *Career Development International*, 22, 469-476.

Wanous, J. P., Sullivan, S. E., & Malinak, J. (1989). The role of judgment calls in meta-analysis. *Journal of Applied Psychology*, 74, 259-264.

Whitener, E. M. (1990). Confusion of confidence intervals and credibility intervals in meta-analysis. *Journal of Applied Psychology*, 75, 315-321.

Bonus Readings:

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.

American Psychological Association (2008). Reporting standards for research in psychology: Why do we need them? What might they be? *American Psychologist*, 9, 839-851.

Cheung, M. W. L., & Chan, W. (2009). A two-stage approach to synthesizing covariance matrices in meta-analytic structural equation modeling. *Structural Equation Modeling: A Multidisciplinary Journal*, 16, 28-53.

- DeSimone, J. A. (2014). When it's incorrect to correct: A brief history and cautionary note. *Industrial and Organizational Psychology: Perspectives on Science and Practice*, 7, 527-531.
- Eysenck, H. J. (1992). Meta-analysis, sense or non-sense? *Pharmaceutical Medicine*, 6, 113-119.
- Eysenck, H. J. (1994). Meta-analysis and its problems. *British Medical Journal*, 309, 789-792.
- Glass, G. V. (1976). Primary, secondary, and meta-analysis of research. *Educational Researcher*, 5, 3-8.
- Huedo-Medina, T. B., Sánchez-Meca, J., Botella, J., & Marín-Martínez, F. (2006). Assessing heterogeneity in meta-analysis: Q statistic or I^2 index? *Psychological Methods*, 11, 193-206.
- Moher, D., Liberati, A., Tetzlaff, J., Altman, D. G., & The PRISMA Group (2009). Preferred reporting items for systematic reviews and meta-analyses: The PRISMA statement. *PLOS: Medicine*, 6, 1-6.
- Schmidt, F. L., Hunter, J. E., & Urry, V. W. (1976). Statistical power in criterion-related validation studies. *Journal of Applied Psychology*, 61, 473-485.
- Viswesvaran, C., & Ones, D. S. (1995). Theory testing: Combining psychometric meta-analysis and structural equation modeling. *Personnel Psychology*, 48, 865-885.
- The entire special issue of the *Journal of Special Education* (volume 18, number 1).
- The entire special issue of the *Journal of Clinical Epidemiology* (volume 48, number 1).

October 10, 2022: Midterm

October 17, 2022

Topics: HLM: ICCs, r_{wg} , Homogeneity of regression, Context effects, WABA and variance decomposition

Required:

- Bliese, P. D. (2000). Within-group agreement, non-independence, and reliability: Implications for data aggregation and analysis. In K. J. Klein and S. W. J. Kozlowski (Eds.), *Multilevel Theory, Research, and Methods in Organizations* (pp. 349-381). San Francisco, CA: Jossey-Bass.

Castro, S. L. (2002). Data analytic methods for the analysis of multilevel questions: A comparison of intraclass correlations, $r_{wg(j)}$, hierarchical linear modeling, within- and between-analysis, and random group resampling. *Leadership Quarterly*, 13, 69-93.

Hofman, D., & Gavin, M. B. (1998). Centering decisions in hierarchical linear models: Implications for research in organizations. *Journal of Management*, 24, 623-641.

James, L. R., Demaree, R. G., & Wolf, G. (1993). r_{wg} : An assessment of within-group interrater agreement. *Journal of Applied Psychology*, 78, 306-309.

McNeish, D., Stapleton, L. M., & Silverman, R. D. (2017). On the unnecessary ubiquity of hierarchical linear modeling. *Psychological Methods*, 22, 114-140.

Rousseau, D. M. (1985). Issues of level in organizational research: Multi-level and cross-level perspectives. *Research in Organizational Behavior*, 7, 1-37.

[This topic is also covered in Geiser Chapter 5]

Reporting Examples:

Barnes, C. M., Hollenbeck, J. R., Jundt, D. K., DeRue, D. S., & Harmon, S. J. (2011). Mixing individual incentives and group incentives. Best of both worlds or social dilemma? *Journal of Management*, 37, 1611-1635.

Bonus Readings:

Kenny, D. A., Kashy D. A., & Bolger, N. (1998). Data analysis in social psychology. In Gilbert D, Fiske S, Lindzey G (Eds.), *The handbook of social psychology* (4th ed.; vol. 1, pp. 233–265). Boston: McGraw-Hill.

LeBreton, J. M., James, L. R., & Lindell, M. K. (2005). Recent issues regarding r_{WG} , r^*_{WG} , $r_{WG(j)}$, and $r^*_{WG(j)}$. *Organizational Research Methods*, 8, 128-138.

LeBreton, J. M. & Senter, J. L. (2008). Answers to 20 questions about interrater reliability. *Organizational Research Methods*, 11, 815-852.

Shrout, P. E., & Fleiss, J. L. (1979). Intraclass correlations: Uses in assessing rater reliability. *Psychological Bulletin*, 86, 420-428.

October 24, 2022

Topics: HLM: OWA, RCR, IAO, SAO

Required:

Aguinis, H., Gottfredson, R. K., & Culpepper, S. A. (2013). Best-practice recommendations for estimating cross-level interaction effects using multilevel modeling. *Journal of Management*, 39, 1490-1528.

Gooty, J., & Yammarino, F. J. (2011). Dyads in organizational research: Conceptual issues and multilevel analyses. *Organizational Research Methods*, 14, 456-483.

Hofman, D. (1997). An overview of the logic and rationale of hierarchical linear models. *Journal of Management*, 23, 723-744.

Holcomb, T. R., Combs, J. G., Sirmon, D. G., & Sexton, J. (2010). Modeling levels and time in entrepreneurship research: An illustration with growth strategies and post-IPO performance. *Organizational Research Methods*, 13, 348-389.

[This topic is also covered in Geiser Chapter 5]

Reporting Examples:

Binnewies, C., Sonnentag, S. & Mojza, E. J. 2009. Daily performance at work: Feeling recovered in the morning as a predictor of day-level performance. *Journal of Organizational Behavior*, 30, 67-93.

Halbesleben, J. R., Wheeler, A. R., & Paustian-Underdahl, S. C. (2013). The impact of furloughs on emotional exhaustion, self-rated performance, and recovery experiences. *Journal of Applied Psychology*, 98, 492.

Lang, J. W., & Bliese, P. D. (2009). General mental ability and two types of adaptation to unforeseen change: applying discontinuous growth models to the task-change paradigm. *Journal of Applied Psychology*, 94, 411.

Bonus Readings:

Culpepper, S. A., & Aguinis, H. (2016). *Should I use multilevel modeling? A hands-on demonstration*. Presentation at the 76th annual meeting of the Academy of Management. Anaheim, CA.

Krasikova, D. V., & LeBreton, J. M. (2012). Just the two of us: Misalignment of theory and methods in examining dyadic phenomena. *Journal of Applied Psychology*, 97, 739-757.

Kreft, I. G. G., de Leeuw, J., & Aiken, L. S. (1995). The effect of different forms of centering in hierarchical linear models. *Multivariate Behavioral Research*, 30, 1-21.

See Appendix A for a list of additional HLM references by topic.

October 31, 2022

Topics: Time: Paired-sample t-test, Repeated measures ANOVA, Autoregression

Readings combined with November 18. Please also review your course notes regarding t-tests, ANOVA, and regression.

November 7, 2022

Topics: Time: Latent change models, Latent growth models

Required:

Matusik, J. G., Hollenbeck, J. R., & Mitchell, R. L. (2021). Latent change score models for the study of development and dynamics in organizational research. *Organizational Research Methods*, 24, 772-801.

McArdle, J. J. (2009). Latent variable modeling of differences and changes with longitudinal data. *Annual Review of Psychology*, 60, 477-605.

Geiser Chapter 4

Reporting Examples:

Bentein, K., Vandenberg, R., Vandenberghe, C., & Stinglhamber, F. (2005). The role of change in the relationship between commitment and turnover: A latent growth modeling approach. *Journal of Applied Psychology*, 90, 468-482.

Halbesleben, J. R. B., & Wheeler, A. R. (2015). To invest or not? The role of coworker support and trust in daily reciprocal gain spirals of helping behavior. *Journal of Management*, 41, 1628-1650.

Mäkikangas, A., Bakker, A. B., Aunola, K., & Demerouti, E. (2010). Job resources and flow at work: Modelling the relationship via latent growth curve and mixture model methodology. *Journal of Occupational and Organizational Psychology*, 83, 795-814.

Bonus Readings:

Bollen, K. A., & Curran, P. J. (2006). *Latent curve models: A structural equation perspective*. John Wiley & Sons.

Chan, D. (1998). The conceptualization and analysis of change over time: An integrative approach incorporating longitudinal means and covariance structures analysis (LMACS) and multiple indicator latent growth modeling (MLGM). *Organizational Research Methods, 1*, 421-483.

Duncan, T. E., Duncan, S. C., & Strycker, L. A. (2006). *An introduction to latent variable growth curve modeling: Concepts, issues, and application*. Routledge Academic.

Mayer, A., Steyer, R., & Mueller, H. (2012). A general approach to defining latent growth components. *Structural Equation Modeling: A Multidisciplinary Journal, 19*, 513-533.

Zyphur, M. J., Allison, P. D., Tay, L., Voelkle, M. C., Preacher, K. J., Zhang, Z., Hamaker, E. L., Shamsollahi, A., Pierides, D. C., Koval, P., & Diener, E. (2020). From Data to Causes I: Building A General Cross-Lagged Panel Model (GCLM). *Organizational Research Methods, 23*, 651–687.

Zyphur, M. J., Voelkle, M. C., Tay, L., Allison, P. D., Preacher, K. J., Zhang, Z., Hamaker, E. L., Shamsollahi, A., Pierides, D. C., Koval, P., & Diener, E. (2020). From Data to Causes II: Comparing Approaches to Panel Data Analysis. *Organizational Research Methods, 23*, 688–716.

November 14, 2022

Topics: Miscellaneous: Polynomial regression, RSA, Logistic regression, Survival analysis

Required:

Edwards, J. R. (2002). Alternatives to difference scores: Polynomial regression and response surface methodology. In F. Drasgow & N. Schmitt. *Measuring and analyzing behavior in organizations: Advances in measurement and data analysis* (pp. 350-400). San Francisco: Jossey-Bass

Shanock, L. R., Baran, B. E., Gentry, W. A., Pattison, S. C., & Heggestad, E. D. (2010). Polynomial regression with response surface analysis: A powerful approach for examining moderation and overcoming limitations of difference scores. *Journal of Business and Psychology, 25*, 543-554.

Reporting Examples:

Hardy III, J. H., Gibson, C., Sloan, M., & Carr, A. (2017). Are applicants more likely to quit longer assessments? Examining the effect of assessment length on applicant attrition behavior. *Journal of Applied Psychology*, 102, 1148-1158.

November 28, 2022

Papers and Presentations Due

Acknowledgement of Syllabus

I have received a copy of the syllabus for MGT 691-001 for the Fall semester of the 2022 academic school year. I understand and agree to the policies stated on the syllabus.

Printed Name

Signature

Date

What do you hope to learn in this class?

Appendix A: HLM References by Topic

If You Only Read One

Hofman, D. (1997). An overview of the logic and rationale of hierarchical linear models. *Journal of Management*, 23, 723-744.

Books

Klein, K. J., & Kozlowski, S. W. J. (2000). *Multilevel theory, research, and methods on organizations*. San Francisco, CA: Jossey-Bass.

Humphrey, S. E., & LeBreton, J. M. (Eds). (2019). *The handbook of multilevel theory, measurement, and analysis*. Washington, D.C.: American Psychological Association.

Raudenbush, S. W., & Byrk, A. S. (2002). *Hierarchical linear models: Applications and data analysis methods* (2nd ed.). Thousand Oaks, CA: Sage.

Snijders, T. A. B., & Bosker, R. J. (2012). *Multilevel analysis: An introduction to basic and advanced multilevel modeling* (2nd ed.). Thousand Oaks, CA: Sage.

Aggregation

Burke, M. L., Landis, R. S., & Burke, M. J. (2017). Estimating group-level relationships: General recommendations and considerations for the use of intraclass correlation coefficients. *Journal of Business and Psychology*, 32, 611-626.

Castro, S. L. (2002). Data analytic methods for the analysis of multilevel questions: A comparison of intraclass correlations, $r_{wg(j)}$, hierarchical linear modeling, within- and between-analysis, and random group resampling. *Leadership Quarterly*, 13, 69-93.

Chan, D. (1998). Functional relations among constructs in the same content domain at different levels of analysis: A typology of composition models. *Journal of Applied Psychology*, 83, 234-246.

LeBreton, J. M. & Senter, J. L. (2008). Answers to 20 questions about interrater reliability. *Organizational Research Methods*, 11, 815-852.

Woehr, D. J., Loignon, A. C., Schmidt, P. B., Loughry, M. L., & Ohland, M. W. (2015). Justifying aggregation with consensus-based constructs: A review and examination of cutoff values for common aggregation indices. *Organizational Research Methods*, 18, 704-737.

Centering

- Antonakis, J., Bastardo, N., & Rönkkö, M. (2021). On Ignoring the Random Effects Assumption in Multilevel Models: Review, Critique, and Recommendations. *Organizational Research Methods*, 24, 443–483.
- Enders, C. K., & Tofghi, D. (2007). Centering predictors in cross-sectional multilevel models: A new look at an old issue. *Psychological Methods*, 12, 121-138.
- Hofman, D., & Gavin, M.B. (1998). Centering decisions in hierarchical linear models: Implications for research in organizations. *Journal of Management*, 24, 623-641.
- Kreft, I. G. G., de Leeuw, J., & Aiken, L. S. (1995). The effect of different forms of centering in hierarchical linear models. *Multivariate Behavioral Research*, 30, 1-21.
- Paccagnella, O. (2006). Centering or not centering in multilevel models: The role of group mean and the assessment of group effects. *Evaluation Review*, 30, 66-85.
- Wu, Y. B., & Wooldridge, P. J. (2005). The impact of centering first-level predictors on individual and contextual effects in multilevel data analysis. *Nursing Research*, 54, 212-216.

Dyads

- Gooty, J., & Yammarino, F. J. (2011). Dyads in organizational research: Conceptual issues and multilevel analyses. *Organizational Research Methods*, 14, 456-483.
- Krasikova, D. V., & LeBreton, J. M. (2012). Just the two of us: Misalignment of theory and methods in examining dyadic phenomena. *Journal of Applied Psychology*, 97, 739-757.

Ecological Fallacy

- Glick, W. H. (1985). Conceptualizing and measuring organizational and psychological climate: Pitfalls in multilevel research. *Academy of Management Review*, 10, 601-616.
- Robinson, W. S. (1950). Ecological correlations and the behavior of individuals. *Journal of the American Statistical Association*, 30, 517-536.
- Rottig, D. (2009). Overcoming common pitfalls in cross cultural management research. *International Business: Research, Teaching, and Practice*, 3, 32-51.
- Rousseau, D. M. (1985). Issues of level in organizational research: Multi-level and cross-level perspectives. *Research in Organizational Behavior*, 7, 1-37.

Other Stuff (Longitudinal, Mediation, Moderation, Three-level Models, Etc.)

- Aguinis, H., Gottfredson, R. K., & Culpepper, S. A. (2013). Best-practices recommendations for estimating cross-level interaction effects using multilevel modeling. *Journal of Management*, 39, 1490-1528.
- Bliese, P. D., Maltarich, M. A., & Hendricks, J. L. (2018). Back to basics with mixed-effects models: Nine take-away points. *Journal of Business and Psychology*, 33, 1-23.
- Davison, M. L., Kwak, N., Seo, Y. S., & Choi, J. (2002). Using hierarchical linear models to examine moderator effects: Person-by-organization interactions. *Organizational Research Methods*, 5, 231-254.
- Holcomb, T. R., Combs, J. G., Sirmon, D. G., & Sexton, J. (2010). Modeling levels and time in entrepreneurship research: An illustration with growth strategies and post-IPO performance. *Organizational Research Methods*, 13, 348-389.
- Wang, L., & Maxwell, S. E. (2015). On disaggregating between-person and within-person effects with longitudinal data using multilevel models. *Psychological Methods*, 20, 63-83.
- Zhang, Z., Zyphur, M. J., & Preacher, K. J. (2009). Testing multilevel mediation using hierarchical linear models: Problems and solutions. *Organizational Research Methods*, 12, 695-719.