MAN 7108 Seminar on Research Methods

Instructor: Mo Wang, Ph.D.
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Office Hours: By appointment

Course Meeting Time & Place

Class Time: 14 meetings, three hours each (one or two meetings on Friday)
Location: DOA

Course Overview and Objectives

The goals of this course are threefold: (1) to provide an overview of advanced research method tools for conducting single- and multi-level research on organizational phenomena; (2) to develop critical skills needed to plan for and evaluate empirical organizational research; and (3) to develop skills of actually using various organizational research methods. Most importantly, I hope this course will teach students to think about theories in their content domain, research methods and design, and statistics as three inter-related components of a unified system through which theories are developed, tested, and refined. Simply put, theoretical and methodological competencies are not, and should not be, mutually exclusive.

Software Requirement

SPSS, R, and Mplus

Key Reference Books

Cohen, J., Cohen, P., West, S. G., & Aiken, L. S. (2003). *Applied multiple regression/correlation analysis for the behavioral sciences*. Mahwah, NJ: Erlbaum.

Drasgow, F., & Schmitt, N. (2002, Eds.). *Measuring and analyzing behavior in organizations: Advances in measurement and data analysis.* San Francisco: Jossey-Bass.

Muthen, L. K., & Muthen, B. O. (2012). *Mplus user's guide* (7th ed.)*.* Los Angeles, CA: Author.

Raykov, T., & Marcoulides, G. A. (2011). *Introduction to psychometric theory*. New York: Routledge.

Teaching Assistants

Elisabeth Gilbert (elisabeth.gilbert@warrington.ufl.edu)
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Course Structure

Class Participation (30%)

This class will require your active participation and involvement. You are expected to have read the material for each week (**I have zero tolerance for students coming to the class without reading the papers**) and be prepared to ask questions and contribute to the flow of the class. This does not mean that you should sacrifice quality for the sake of quantity; both are important. But, I have no way of gauging quality if you don't participate.

You will only be allowed to miss the class for medical reasons with written and verifiable documentation from doctors. If you fail to come to class due to any other reasons, you will lose all the percentage points for class participation.

Homework Assignment (30%)

Homework will be assigned after each class, which is designed to help master the various methods and techniques covered in the course. The homework will require you to perform various data management and analyses of data using SPSS, R, and/or Mplus. In addition, and equally important, your will be asked to critically interpret results from analyses you conduct and write manuscript-like report on the results. You will have **four days** to complete each homework assignment. **If you fail to turn in any of your homework on time, you will lose all the percentage points for homework assignment.**

Take Home Mid-term Exam and Final Exam (40%)

From **February 15th to 22nd**, you will have **two days** (48 hours) to complete a take home mid-term exam. The exam questions will integrate among the topics covered from Class 1 to Class 7. You can refer to your notes, reading materials, and homework when you work on this exam. **If you fail to turn in your exam on time, you will lose all the percentage points for the mid-term exam, which is 20%.**

In the week of **April 10th**, you will have **two days** (48 hours) to complete a take home final exam. The exam questions will integrate among the topics covered from Class 8 to Class 14. You can refer to your notes, reading materials, and homework when you work on this exam. **If you fail to turn in your exam on time, you will lose all the percentage points for the final exam, which is 20%.**

Course Sequence and Readings

Class 1 (January 13): Theory Building and Testing

McGuire, W. J. (1997). Creative hypothesis generating in psychology: Some useful heuristics. *Annual Review of Psychology, 48,* 1-30.

Alvesson, M., & Sandberg, J. (2011). Generating research questions through problematization. *Academy of Management Review, 36*, 247-271.

Sutton, R. I., & Staw, B. M. (1995). What theory is not. *Administrative Science Quarterly, 40*, 371-384.

Weick, K. E. (1995). What theory is not, theorizing is. *Administrative Science Quarterly, 40*, 385-390.

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.

Class 2 (January 20): Regression Fundamentals

Cohen, J., Cohen, P., West, S. G., & Aiken, L. S. (2003). Bivariate correlation and regression. In *Applied multiple regression/correlation analysis for the behavioral sciences* (Ch. 2, pp. 19-63). Mahwah, NJ: Erlbaum.

Cohen, J., Cohen, P., West, S. G., & Aiken, L. S. (2003). Multiple regression/correlation with two or more independent variables. In *Applied multiple regression/correlation analysis for the behavioral sciences* (Ch. 3, pp. 64-100). Mahwah, NJ: Erlbaum.

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.

Atinc, G., Simmering, M. J., & Kroll, M. J. (2012). Control variable use and reporting in macro and micro management research. *Organizational Research Methods, 15*, 57-74.

LeBreton, J. M., & Tonidandel, S. (2008). Multivariate relative importance: Extending relative weight analysis to multivariate criterion spaces. *Journal of Applied Psychology, 93*, 329-345.

Tonidandel, S., LeBreton, J. M., & Johnson, J. W. (2009). Determining the statistical significance of relative weights. *Psychological Methods, 14*, 387-399.

Class 3 (January 27): Classic Test Theory and Validity

Raykov, T., & Marcoulides, G. A. (2011). Classical test theory. In *Introduction to Psychometric Theory* (pp. 115-136). New York: Routledge.

Raykov, T., & Marcoulides, G. A. (2011). Validity. In *Introduction to Psychometric Theory* (pp. 183-222). New York: Routledge.

Borsboom, D., Mellenbergh, G. J., & van Heerden, J. (2004). The concept of validity. *Psychological review*, *111*, 1061.

Cizek, G. J. (2012). Defining and distinguishing validity: Interpretations of score meaning and justifications of test use. *Psychological Methods, 17*, 31-43.

Boyd, B. K., Gove, S., & Hitt, M. A. (2005). Construct measurement in strategic management research: Illusion or reality. *Strategic Management Journal, 26*, 239-257.

Class 4 (January 27): Factor Analysis

Raykov, T., & Marcoulides, G. A. (2011). An introduction to factor analysis. In *Introduction to psychometric theory* (pp. 37-60). New York: Routledge.

Raykov, T., & Marcoulides, G. A. (2011). Introduction to latent variable modeling and confirmatory factor analysis. In *Introduction to psychometric theory* (pp. 61-114). New York: Routledge.

Fabrigar, L. R., Wegener, D. T., MacCallum, R. C., & Strahan, E. J. (1999). Evaluating the use of exploratory factor analysis in psychological research. *Psychological Methods, 4*, 272-299.

Conway, J. M., & Huffcutt, A. I. (2003). A review and evaluation of exploratory factor analysis practices in organizational research. *Organizational Research Methods, 6*, 147-168.

Jackson, D. L., Gillaspy, J. A., Purc-Stephenson, R. (2009). Reporting practices in confirmatory factor analysis: An overview and some recommendations. *Psychological Methods, 14*, 6-23.

Class 5 (February 3): Reliability

Raykov, T., & Marcoulides, G. A. (2011). Reliability. In *Introduction to Psychometric Theory* (pp. 137-146). New York: Routledge.

Raykov, T., & Marcoulides, G. A. (2011). Procedures for estimating reliability. In *Introduction to Psychometric Theory* (pp. 147-182). New York: Routledge

DeShon, R.P. (2002). Generalizability theory. In F. Drasgow & N. Schmitt (Eds.). *Measuring and analyzing behavior in organizations: Advances in measurement and data analysis.* (pp. 189-220). San Francisco: Jossey-Bass.

Ree, M. J., & Carretta, T. R. (2006). The role of measurement error in familiar statistics. *Organizational Research Methods, 9*, 99-112.

Schmidt, F. L., Le, H., & Ilies, R. (2003). Beyond alpha: An empirical examination of the effects of different sources of measurement error on reliability estimates for measures of individual-differences constructs. *Psychological Methods, 8*, 206-224.

Class 6 (February 3): Scale Development

Hinkin, T. R. (1998). A brief tutorial on the development of measures for use in survey questionnaires. *Organizational Research Methods, 1,* 104-121.

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.

Lance, C. E., Dawson, B., Birkelbach, D., & Hoffman, B. J. (2010). Method effects, measurement error, and substantive conclusions. *Organizational Research Methods, 13*, 435-455.

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.

Edwards, J. R. (2011). The fallacy of formative measurement. *Organizational Research Methods, 14*, 370-388.

Class 7 (February 10): Structural Equation Modeling

Cohen, J., Cohen, P., West, S. G., & Aiken, L. S. (2003). Multiple regression/correlation and causal models. In *Applied multiple regression/correlation analysis for the behavioral sciences* (Ch. 12, pp. 452-478). Mahwah, NJ: Erlbaum.

Anderson, J. C., & Gerbing, D. W. (1988). Structural equation modeling in practice: A review and recommended two-step approach. *Psychological Bulletin, 103*, 411–423.

McDonald, R. P., & Ho, M.-H. R. (2002). Principles and practice in reporting structural equation analyses. *Psychological Methods, 7*, 64-82.

Shook, C. L., Ketchen, D. J., Hult, G. T. M., & Kacmar, K. M. (2004). An assessment of the use of structural equation modeling in strategic management research. *Strategic Management Journal, 25*, 397-404.

O'Boyle, E. H., & Williams, L. J. (2011). Decomposing model fit: Measurement vs. theory in organizational research using latent variables. *Journal of Applied Psychology, 96*, 1-12.

Class 8 (February 24): Moderation and Congruence Analysis

Cohen, J., Cohen, P., West, S. G., & Aiken, L. S. (2003). *Applied multiple regression/correlation analysis for the behavioral sciences* (3rd ed., Chapter 7, pp. 255-300). Mahwah, NJ: Lawrence Erlbaum.

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: Routledge.

Edwards, J. R. (1994). The study of congruence in organizational behavior research: Critique and a proposed alternative. *Organizational Behavior and Human Decision Processes, 58,* 51-100.

Edwards, J. R., Cable, D. M., Williamson, I. O., Lambert, L. S., & Shipp, A. J. (2006). The phenomenology of fit: linking the person and environment to the subjective experience of person-environment fit. *Journal of Applied Psychology*, *91*, 802-827.

Zhang, Z., Wang, M., & Shi, J. (2012). Leader-follower congruence in proactive personality and work outcomes: The mediating role of leader-member exchange. *Academy of Management Journal*, *55*, 111-130.

Class 9 (March 3): Multilevel Modeling: Constructs

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.

Harrison, D. A., & Klein, K. J. (2007). What's the difference? Diversity constructs as separation, variety, or disparity in organizations. *Academy of Management Review, 32*, 1199-1229.

Bliese, P. D. (2000). Within-group agreement, non-independence, and reliability: Implications for data aggregation and analyses. In K. J. Klein and S. W. J. Kozlowski (Eds.), *Multilevel theory, research, and methods in organizations: Foundations, extensions, and new directions*, pp. 349-381. San Francisco, CA: Jossey-Bass.

Lindell, M.K., & Brandt, C.J. (1999). Assessing interrater agreement on the job relevance of a test: A comparison of *CVI, $r_{wg(j)}$*, and *$r*_{wg(j)}$,* indexes. *Journal of Applied Psychology, 84*, 640 – 647.

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

Class 10 (March 3): Multilevel Modeling: Observed and Latent Variables

Bliese, P. D. (2002). Multilevel random coefficient modeling in organizational research: Examples using SAS and S-PLUS. In F. Drasgow & N. Schmitt (Eds.) *Measuring and analyzing behavior in organizations* (pp. 401-445). San Francisco, CA: Jossey-Bass.

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

Enders, C. K., & Tofighi, D. (2007). Centering predictor variables in cross-sectional multilevel models: A new look at an old issue. *Psychological Methods, 2,* 121–138.

Heck, R.H., & Thomas, S.L. (2000). *An introduction to multilevel modeling techniques.* (Chapters 6 & 7, pp 113-180). Mahwah, NJ: Lawrence Erlbaum.

Class 11 (March 17): Moderated Mediation and Mediated Moderation in Mono-level and Multilevel Frameworks

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

Preacher, K. J., Zyphur, M. J., & Zhang, Z. (2010). A general multilevel SEM framework for assessing multilevel mediation. *Psychological Methods, 15,* 209-233.

Liu, D., Zhang, Z. & Wang, M. (2012). Mono-level and multilevel mediated moderation and moderated mediation: Theorizing and test. In Chen, X., Tsui, A., and Farh, L. (Eds., 2nd Edition) *Empirical Methods in Organization and Management Research* (pp. 545-579). Beijing, China: Peking University Press.

Zhou, L., Wang, M., Chen, G., & Shi. J. (2012). Effects of supervisors' upward exchange relationships on subordinates: Testing multilevel mediation role of empowerment. *Journal of Applied Psychology, 97,* 668-680.

Liu, Y., Wang, M., Chang, C-H., Shi, J., Zhou, L., & Shao, R. (2015). Work-family conflict, emotional exhaustion, and aggression toward others: The moderating roles of workplace interpersonal conflict and perceived managerial family support. *Journal of Applied Psychology, 100,* 793-808.

Class 12 (March 17): Categorical and Count Outcomes

Pedhazur, E. J. (1997). Categorical dependent variable: Logistic regression. In E. J. Pedhazur, *Multiple regression in behavioral research: Explanation and prediction* (pp. 714-764). Fort Worth, TX: Harcourt Brace College Publisher.

Coxe, S., West, S. G., & Aiken, L. S. (2009). The analysis of count data: A gentle introduction to Poisson regression and its alternatives. *Journal of Personality Assessment, 91,* 121-136.

Raju, N. S., Laffitte, L. J., & Byrne, B. M. (2002). Measurement equivalence: A comparison of methods based on confirmatory factor analysis and item response theory. *Journal of Applied Psychology, 87,* 517-529.

Class 13 (March 24): Longitudinal Data Analysis

Wang, M., Zhou, L., & Zhang, Z. (2016). Dynamic modeling. *Annual Review of Organizational Psychology and Organizational Behavior, 3,* 241-266.

Wang, M., Beal, D. J., Chan, D., Newman, D. A., Vancouver, J. B., & Vandenberg, R. J. (2017). Longitudinal research: A panel discussion on conceptual issues, research design, and statistical techniques. *Work, Aging and Retirement.*

Chan, D. (2002). Latent growth modeling. In F. Drasgow & N. Schmitt (Eds.) *Measuring and analyzing behavior in organizations* (pp. 303-349). San Francisco, CA: Jossey-Bass.

McArdle, J. J. (2009). Latent variable modeling of differences and changes with longitudinal data. *Annual Review of Psychology,* 60, 577–605.

Liu, Y., Mo, S., Song, Y., & Wang, M. (2016). Longitudinal analysis in occupational health psychology: A review and tutorial of three longitudinal modeling techniques. *Applied Psychology: An International Review, 65,* 379-411.

Class 14 (March 24): Latent Class Procedures

Wang, M., & Hanges, P. (2011). Latent class procedures: Applications to organizational research. *Organizational Research Methods*, *14,* 24-31.

Bennett, A. A., Gabriel, A. S., Calderwood, C., Dahling, J. J., & Trougakos, J. P. (2016). Better together? Examining profiles of employee recovery experiences. *Journal of Applied Psychology*, *101,* 1635-1654.

Lawrence, B. S., & Zyphur, M. J. (2011). Identifying organizational faultlines with latent class cluster analysis. *Organizational Research Methods*, *14,* 32-57.

Wang, M., & Bodner, T. E. (2007). Growth mixture modeling: Identifying and predicting unobserved subpopulations with longitudinal data. *Organizational Research Methods, 10,* 635-656.

Wang, M., & Chan, D. (2011). Mixture latent Markov modeling: Identifying and predicting unobserved heterogeneity in longitudinal qualitative status change. *Organizational Research Methods*, *14,* 411-431.