UNIVERSITY OF PENNSYLVANIA
THE WHARTON SCHOOL

Research Methods in Marketing
Marketing 942-301/943-302, Fall 2018
COURSE SYLLABUS

(Revised, 9/5/18)

Instructors: Dr. Wes Hutchinson   office: 763 JMHH
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Class Time/Location: Thursday, 3:00 pm - 6:00 pm, 757 JMHH

Office Hours: by appointment.

Reading Materials:

Texts: REQUIRED - Cohen, Jacob, Patricia Cohen, Stephen G. West and Leona S. Aiken, *Applied Multiple Regression/Correlation Analysis for the Behavioral Sciences*, 3rd ed., 2003, Lawrence Erlbaun Associates, ISBN: 0-8058-2223-2. (denoted CCWA below)

SUGGESTED - Rosenthal, Robert and Ralph L. Rosnow, *Essentials of Behavioral Research*, 3rd ed., 2008, McGraw-Hill, ISBN-13: 978-0-07-353196-0. (denoted R&R below)

SUGGESTED – Kline, Rex B., *Principles and Practice of Structural Equation Modeling*, 3rd ed., 2011, The Guilford Press, ISBN: 978-1-60623-876-9.

SUGGESTED – Hunter, John E. and Frank L. Schmidt, *Methods of Meta-Analysis: Correcting Error and Bias in Research Findings,* 2nd ed., 2004, Sage Publishing, ISBN-13: 978-1412904797

SUGGESTED - Shadish, William R., Thomas D. Cook, and Donald T. Campbell, *Experimental and Quasi-Experimental Designs for Generalized Causal Inference*, 2002, Houghton Mifflin Company, ISBN: 0-395-61556-9.

Articles: Journal articles will be distributed electronically via Canvas.

Course Description and Objectives:

This course introduces the fundamental methodological issues that arise in behavioral research: research design, data collection, and data analysis. Illustrative examples are drawn from the behavioral sciences with a focus on the behavior of consumers and managers, but also include other areas (depending on student interests). The general approach taken in this course emphasizes the following perspectives.

1. **Design, data collection, and data analysis are integrative and simultaneous aspects of research** (not independent and sequential). There is a focus on completely mastering the essentials of these components of research, and learning how they relate to more advanced topics.

2. **The separation of "quantitative" and "behavioral" approaches is unnecessary.** These approaches shared a common interest in rigorously testing theory-based causal hypotheses about human behavior.

3. **The current focus in behavioral research on statistical "significance" (i.e., rejecting a null hypothesis of some sort) is misguided and counterproductive.** Rather, research should be designed to validly measure important phenomena and use appropriate statistical models to estimate effect sizes for the factors that might (or might not) cause these phenomena.

4. **Consideration of 1, 2, and 3 leads to a focus on deeply understanding the general linear model of observed variables**, and this model unifies the most widely used types of data analysis (e.g., OLS regression, ANOVA, factor analysis, SEM, repeated measures, time series, and hierarchical linear models).

Specific topics that are covered include: the development of research ideas; the nature of explanation; statistical power, effects size, and significance tests; observational, experimental, and quasi-experimental designs; data and measurement; multi-causal explanations and multi-factor models; between-subjects and within-subjects experimental manipulations and data analysis.

Although grounded in theory, this course emphasizes pragmatic and widely used research methods with a hands-on approach. **Put more simply, this course aims to provide the essential foundations for publishing research in top academic journals.**

Grading:

MKTG 942
20%   Class Participation (including assignments)
80%   Take-Home Exam 1
MKTG 943
20%   Class Participation (including assignments)
40%   Take-Home Exam 2
40%   Project Presentation

Class Participation:

In addition to participating in class discussions, on some weeks one or two students will be assigned/volunteer to bring in a short example or problem from their own research or a literature of interest to them that is related to the topics covered the previous week. Also, there will be occasional homework assignments.

Take-Home Exams:

At two points in the course, open-book, open-note, take-home exams will be assigned. The questions on these exams will designed to be similar questions on the qualifying exam for marketing students.

Project:

Each student will develop a written proposal for a research project that will be submitted one week prior to presenting the proposal on the last day of class.

Schedule of Classes:

Week	Topics	CCWA	Articles	SAS & HW due
1 Aug30	**No Class:** Small group lab sessions will be scheduled later.			
2 Sept 6	**The nature of explanation:** Correlation and causation; Statistical power and effect size; Reliability (stability) and validity (bias); Internal, external, and construct validity; Bayesian thinking about research design and threats to validity; how to read equations as statements about causal theories.	2	Cohen (1994); Brewer (2000); Brinberg, Lynch, and Sawyer (1992); Wilkinson et al. (1999) *Kline (2011); *Chintagunta et al. 2006; *Cohen (1995)	**HW1:** p-value quiz & my favorite donut survey
3 Sept 13	**Data & measurement: Choosing what to explain and what to measure**; behavioral vs. self-reported, scale types; range-frequency theory; Simpson's paradox; principal components analysis (PCA) & K-means cluster analysis	4.1, 4.2, 11	Sears (1986); Hutchinson (TN, 2003); Weaver & Schwarz (2008); HW: Erdem & Keane (1996) *John & Benet-Martinez (2000); *Cooke et al. (2004	**HW2:** Causation in Erdem & Keane eqs. FACTOR; FASTCLUS
4 Sept 20	**Multi-causal explanations and multi-factor models: Multiple regression models (OLS)**: standardized & unstandardized coefficients; correlations among IVs, SEs for coefficients (Type III SS); Multi-collinearity (VIF, tolerance, condition number); statistical power for OLS analyses.	3.7, 4,5.6, 10.5	Hutchinson (TN, 2017a);	**HW3:** PCA & k-means exercise GLM; REG;
5 Sept 27	**Multi-causal explanations and multi-factor models (continued): Moderation, Mediation Analysis & Structural equation models (SEM)**: structural equation modeling (SEM) & confirmatory factor analysis (CFA); polynomials functions, interactions, & moderation; path analysis; measurement error; mediation	3, 5, 10, 12	Iaobucci 2009; Irwin & McClelland (2001); Zhao, Lynch, & Chen (2010); Weingarten & Hutchinson (2018) *Baron & Kenny (1986); MacKinnon et al (2007); *Preacher & Hayes (2008); *Preacher & Kelley (2011)	**HW4:** OLS exercise P&H process sub-routine
6 Oct 4 (maybe Oct 3)	**Experimental Design and ANOVA:** theoretical and practical issues; representative design; between vs. within subject designs; ANOVA for between-subjects experiments; covariates and ANCOVA; F ratios, MS, & SS; Type III SS (SEs for coefficients); ANOVA tables; contrasts; least squares means; Latin Square designs; repeated measures ANOVA; method of moments vs. maximum likelihood estimation; unobserved heterogeneity	3, 5, 10	Wolfinger & Chang (1998); Hutchinson (TN, 2017b); Hutchinson, Kamakura, & Lynch (2000; *Dhami (2004); *West, Biesanz, and Pitts (2000); *Veryzer & Hutchinson (1998)	**HW5:** mediation exercise GLM; MIXED
7 Oct 11	**Review & Special Topics** (if time allows) **Meta-analysis:** effect sizes, estimated parameters, explaining variation in effect size, problems & solutions	14	Rosenthal & DiMatteo (2001); Take-Home Exam 1 posted.	**HW6:** ANOVA exercise
8 Oct 18	**Repeated measures designs and variants.** Analysis of mixed between-within designs, nested designs, randomized block designs		Take-Home Exam 1 due.	

9 Oct 25	**Fractional Factorial Designs.** Design resolution, creations of regular fractions, alias structures, numerical optimization methods, special cases such as Latin squares			
10 Nov 1	**Stated Choice Design Designs.** A survey of methods for constructing choice experiments, including folder designs, heuristics for selecting optimal designs			
11 Nov 8	**Analysis of Stated Choice Experiments.** Basics of analysis of discrete responses: logistic regression, the multinomial logit model and generalizations			
12 Nov 15	**Emerging Topics in Behavioral Measurement** The collection and analysis of eye-tracking data, text analysis including sentiment and topic analysis			
Nov 22	**Thanksgiving Break**			
13 Nov 29	**Research Reporting and Ethics** How to report findings in publications, traps in exploratory research, ethical dilemmas			
14 Dec 6	**Student Presentations**			
CCWA=Cohen, Cohen, West, Aiken (2002)				

Reading List

(not including CCW&A)

Required

Brinberg, David, John G. Lynch, and Alan G. Sawyer (1992), "Hypothesized and Confounded Explanations in Theory Tests: A Bayesian Analysis," *Journal of Consumer Research*, 19 (September), 139-154.

Brewer, Marilyn B. (2000), "Research Design and Validity Issues," in Harry T. Reis & Charles M. Judd (eds.) Handbook of Research Methods in social and Personality Psychology, New York: Cambridge University Press.

Cohen, Jacob (1994), "The Earth Is Round *(p < .05)*," American Psychologist, 49(12),997-1003.

Dhami, Mandeep K., Ralph Hertwig, and Ulrich Hoffrage (2004), "The Role of Representative Design in an Ecological Approach to Cognition," *Psychological Bulletin*, 130 (6) 959-988.

Erdem, Tulin, and Michael Keane (1996), "Decision-Making Under Uncertainty: Capturing Dynamic Brand Choice Processes in Turbulent Consumer Goods Markets," *Marketing Science*, 15(1): 1-20.

Hutchinson, J. Wesley, Wagner Kamakura and John Lynch (2000), "Unobserved Heterogeneity as an Alternative Explanation for 'Reversal' Effects in Behavioral Research," *Journal of Consumer Research*, 27 (December), 324-344.

Hutchinson, J. Wesley (2003),"Simpson's Paradox." Teaching Note.

Hutchinson, J. Wesley (2017a),"Guidelines for Decisions about Statistical Power." Teaching Note.

Hutchinson, J. Wesley (2017b),"Top 11 Take-Aways for Regression and ANOVA." Teaching Note.

Iaobucci, Dawn (2009), "Everything you always wanted to know about SEM (structural equations modeling) but were afraid to ask," Journal of Consumer Psychology, 19, 673–680.

MacKinnon, David P., Amanda J. Fairchild, and Matthew S. Fritz (2007), "Mediation Analysis," *Annual Review of Psychology*, 58, 593–614.

Rosenthal, R. and M. R. DiMatteo (2001), "META-ANALYSIS: Recent Developments in

Sears, David O. (1986), "College Sophomores in the Laboratory: Influences of a Narrow Data Base on Social Psychology's View of Human Nature," *Journal of Personality and Social Psychology*, 51, 515-530.

Weaver & Schwarz (2008), "Self-Reports in Consumer Research," in *Handbook of Consumer Psychology*, eds. Curtis P. Haugtvedt, Paul M. Herr, and Frank R. Kardes, New York: LEA/Psychology Press, 1081-1102.

Wilkinson, Leland and the Task Force on Statistical Inference (1999), "Statistical Methods in Psychology Journals: Guidelines and Explanations," *American Psychologist*, Vol. 54, No. 8, 594-604.

Wolfinger, R. D., and M. Chang, (1998). Comparing the SAS GLM and MIXED procedures for repeated measures. Cary, NC: SAS Institute Inc.

Zhao,Xinshu, John G. Lynch, and Qimei Chen (2010), "Reconsidering Baron and Kenny: Myths and Truths about Mediation Analysis," *Journal of Consumer Research*, 37 (August), xxx.

Optional

Aquino, Karl and Americus Reed II, (2002), "The Self-importance of Moral Identity," *Journal of Personality and Social Psychology*, 83(6), 1423-1440.

Baron, R. M. and David A. Kenny (1986), "The moderator-mediator variable distinction in social psychological research: Conceptual, strat6egic, and statistical considerations," *Journal of Personality and Social Psychology*, 51, 1173-1182.

Birnbaum, M. H., & Mellers, B. A. (1979a) Stimulus recognition may mediate exposure effects. *Journal of Personality and Social Psychology*, *37*, 391-394.

Birnbaum, M. H., & Mellers, B. A. (1979b) One-Mediator Model of Exposure Effects Is Still Viable. *Journal of Personality and Social Psychology*, *37*, 3 1090-1096.

Carlson, Jay P. , Leslie H. Vincent, David M. Hardesty, and William O. Bearden (2009) "Objective and Subjective Knowledge Relationships: A Quantitative Analysis of Consumer Research Findings," *Journal of Consumer Research*, 35, No. 5 (February), 864-876

Chintagunta, Pradeep, Tulin Erdem, Peter Rossi, and Michel Wedel (2006), "Structural Modeling in Marketing: Review and Assessment," Marketing Science, 25, 604-616.

Cohen, Jacob (1995), "The Earth Is Round *(p < .05)*: Rejoinder," American Psychologist, 50, 1103.

Cooke, Alan D. J. et al. (2004), "Stimulus Context and the Formation of Consumer Ideals" *Journal of Consumer Research*, 31 (June), 112-123.

Farley, John U., Donald R. Lehman and Alan Sawyer (1995), "Empirical Marketing Generalization Using Meta-Analysis," *Marketing Science*, 14, G36 - G 46.

Heath, Timothy B. and Subimal Chatterjee (1995), "Asymmetric Decoy Effects on Lower-Quality versus Higher-Quality Brands: Meta-Analytic and Experimental Evidence," *Journal of Consumer Research*, 22, 268-284.

Irwin, Julie R. and Gary H McClelland (2001) "Misleading heuristics and moderated multiple regression models," *Journal of Marketing Research*, 38, 100-110.

John, Oliver P. and Veronica Benet-Martinez (2000), "Measurement: Reliability, Construct Validation, and Scale Construction," in Harry T. Reis & Charles M. Judd (eds.) Handbook of Research Methods in social and Personality Psychology, New York: Cambridge University Press.

Judd, Charles M., David A. Kenny, and Gary H. McClelland (2001), "Estimating and Testing Mediation and Moderation in Within-Subjects Designs," *Psychological Methods*, 6 (2), 115-134.

Kline, Rex B. (2011), "Fundamental Concepts," ch. 2 in Kline, Rex B., *Principles and Practice of Structural Equation Modeling*, The Guilford Press.

Lerner, Jennifer S., et al. (2003), "Effects of Fear and Anger on Perceived Risks of Terrorism: A National Field Experiment," *Psychological Science*, 14 (March).

Lodish, Leonard M. et al. (1995), "How T.V. Advertising Works: A Meta-Analysis of 389 Real World Split Cable T.V. Advertising Experiments," *Journal of Marketing Research*, 32 (May), 125-139.

Lynch, John G., Dipankar Chakravarti, and Anusree Mitra (1991), "Contrast Effects in Consumer Judgments: Changes in Mental Representations of in the Anchoring of Rating Scales?" *Journal of Consumer Research*, 18 (December), 284-297.

McCulloch, Charles E. (2005), "Repeated Measures ANOVA, R.I.P.?" Chance, 18(3), 29-33.

Moorthy, K. Sridhar (1993), "Theoretical Modeling in Marketing," *Journal of Marketing*, 57, (Apr), 92-106.

Moreland, R. L., & Zajonc, R. B. (1977) Is stimulus recognition a necessary condition for the occurrence of exposure effects? *Journal of Personality and Social Psychology*, *35,* 191-199.

Moreland, R. L., & Zajonc, R. B. (1979) Exposure effects may not depend on stimulus recognition. *Journal of Personality and Social Psychology*, *37,* 108S-1089.

Quantitative Methods for Literature Reviews," *Annual Review of Psychology*, 52, 59-82.

Sawyer, Alan G. „John G. Lynch, and David Brinberg (1995), "A Bayesian Analysis of the Information Value of Manipulation and Confounding Checks in Theory Tests," *Journal of Consumer Research*, 21 (March), 581-595.

Veryzer, Robert W. and J. Wesley Hutchinson (1998), "The Influence of Unity and Prototypicality on Aesthetic Responses to New Product Designs," *Journal of Consumer Research*, 24 (March), 374-394.