



## Structural Equation Modeling

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Instructor:	Dr. Edward “Ed” Ramirez
Class Time:	9 to 11:50 am; Monday
Classroom:	COBA 307
Phone:	404-732-4891
Email:	eramirez29@utep.edu
Office:	COBA 214
Office hours:	12 to 1:30 pm; Monday

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### Course Description

The purpose of this course is to deepen your understanding of research methods, while introducing you to more advanced GLM/covariance-based techniques. Broadly speaking, it focuses on the general linear model, structural equations modeling (SEM), and includes an introduction to network analysis. We will be using SPSS, SAS, AMOS, and UCInet software packages. Since I believe that the ultimate goal of a PhD program is to equip you to become scholars and faculty members, priority will be given to tools and techniques that will help you to publish scholarly research articles.

### Course Objectives

While this course focuses on the analysis of data derived from surveys, you will be able to analyze secondary datasets with the techniques presented as well. As such, we will explore how researchers deal with dichotomous outcome variables, latent constructs, and relational versus attribute data, for example. Upon completion of the course, you should have a firm foundation on the following areas:

1. Data types, data cleansing, etc. Basic statistical analysis.
2. ANOVA/ANCOVA MANOVA/MANCOVA
3. Regression Modeling
4. SEM/PLS
5. Interdependence Techniques—Cluster Analysis
6. Network Analysis Basics

### Texts

- (1) *Structural Equation Modeling with AMOS* by Barbara M. Byrne (Erlbaum and Associates).
- (2) *Applied Multivariate Techniques* by Subhash Sharma, University of South Carolina ISBN: 0-471-31064-6.
- (3) *Discovering Statistics Using SPSS* (Introducing Statistical Methods) by Andy Field
- (4) *Multivariate Data Analysis* (6 or 7th Edition) by Joseph F. Hair Jr., William C. Black, Barry J. Babin, Rolph E. Anderson.
- (5) *Social Network Analysis: A Handbook* by John P. Scott



(6) Selected readings.

### Seminar Structure

This seminar is fast paced and its work load is heavy. That said, although the course is manageable, you should be challenged by it. The seminar format is highly informal and primarily discussion based, where students will be prepared to discuss class readings and/or slides and play the lead role in the learning process. To facilitate discussion, students are expected to have carefully read each assigned reading and completed each assignment prior to class. I expect your best work—and, believe it or not, I don't like to hear myself talk. Thus, be encouraged to read each reading carefully, so that you will be able explain it if called upon.

### Course Requirements

#### *Grading*

These components will determine your grade.

Class Participation	33.3%
Class Assignments	33.3%
Final Examination	33.3%

### Academic Honesty

Academic dishonesty is not condoned nor tolerated at UTEP or in this class. Such dishonesty, when evidenced, will be reported to the Student Judicial Affairs Office at UTEP. Read UTEP's website for more information about sanctions. Academic dishonesty is behavior in which a deliberately fraudulent misrepresentation is employed in an attempt to gain undeserved intellectual credit, either for oneself or for another. It includes, but is not necessarily limited to, the following types of cases: **Plagiarism** - The representation of someone else's ideas as if they are one's own. **Unauthorized Collaboration on Out-of-Class Projects** - The representation of work as solely one's own when in fact it is the result of a joint effort; **Cheating on Exams** - The covert gathering of information from other students, the use of unauthorized notes, unauthorized aids, etc.; and **Knowing Cooperation with Another Person in an Academically Dishonest Undertaking** - Failure by a student to prevent misuse of his/her work by others.

### Accommodations for Students with Disabilities (from the Office of the Ombudsman)

If any member of the class believes that s/he has a physical, emotional, or psychological disability and needs accommodation of any nature, contact the Disabled Student Services Office at 747-5148, go to the Union Bldg. east, Rm. 106 or email [dss@utep.edu](mailto:dss@utep.edu). Then notify the



instructor immediately and he will work with the student to assure s/he has a fair opportunity to perform at his/her normal capabilities in the class.

### Tentative Schedule

Date	Topics/Readings
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<b>1/23</b>	<b>Preliminaries</b>
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Field Ch. 1 through 6  
Hair et al. Ch. 1 and 2

<b>1/30</b>	<b>Preliminaries con't.</b>
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Peloza, John, White, Katherine, and Jingzhi Shang (2013), "Good and Guilt-Free: The Role of Self-Accountability in Influencing Preferences for Products with Ethical Attributes," *Journal of Marketing*, Vol. 77, No. 1, pp.104-119.

Lackmann, Julia, Ernstberger, Jürgen, and Stich, Michael (2012), "Market Reactions to Increased Reliability of Sustainability Information," *Journal of Business Ethics*, Vol. 107, No. 2, pp. 111-128.

Koschate-Fischer, Nicole, Diamantopoulos, Adamantios, and Oldenkotte, Katharina (2012), "Are Consumers Really Willing to Pay More for a Favorable Country Image?? A Study of Country-of-Origin Effects on Willingness to Pay," *Journal of International Marketing*, Vol. 20, No. 1, pp. 19-41.

Roxas, Banjo and Coetzer, Alan (2012), "Institutional Environment, Managerial Attitudes and Environmental Sustainability Orientation of Small Firms," *Journal of Business Ethics*, Vol. 111, pp. 461-476.

Mick, David Glen (1996), "Are Studies of Dark Side Variables Confounded by Socially Desirable Responding? The Case of Materialism," *Journal of Consumer Research*, Vol. 23, No. 2, pp.106-119.

Assignment 1 due

<b>2/6</b>	<b>ANOVA/ANCOVA and MANOVA/MANCOVA</b>
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Field Ch. 9, 10, 11, and 12  
Hair et al. Ch. 6

<b>2/13</b>	<b>ANOVA/ANCOVA and MANOVA/MANCOVA con't.</b>
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Oliver, Jason D. and Rosen, Deborah E. (2010), "Applying the Environmental Propensity Framework: A Segmented Approach to Hybrid Electric Vehicle Marketing Strategies," *Journal of Marketing Theory & Practice*, Vol. 18, No. 4, pp. 377-393.

Nan, Xiaoli and Heo, Kwangjun (2007), "CONSUMER RESPONSES TO CORPORATE SOCIAL RESPONSIBILITY (CSR) INITIATIVES Examining the Role of Brand-Cause Fit in Cause-Related Marketing," *Journal of Advertising*, Vol. 36, No. 2, pp. 63-74.

Biehal, Gabriel J. and Sheinin, Daniel A. (2007), "The Influence of Corporate Messages on the Product Portfolio," *Journal of Marketing*, Vol. 71, No. 2, pp.12-25.



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Scholder Ellen, Pam, Webb, Deborah J., and Mohr, Lois (2006), "A Building Corporate Associations: Consumer Attributions for Corporate Socially Responsible Programs," *Journal of the Academy of Marketing Science*, Vol. 34, No. 2, pp.147-157.

Bergh, Donald D. (1995), "Problems with Repeated Measures Analysis: Demonstration with a Study of the Diversification and Performance Relationship," *Academy of Management Journal*, Vol. 38, No. 6, pp. 1692-1708.

Assignment 2 due

**2/20 Regression Models**

Field Ch. 7 and 8  
Hair et al. Ch. 4 and 5—you don't have to read Discriminant Analysis

**2/27 Regression Models**

Koschate-Fischer, Nicole, Stefan, Isabel V., and Hoyer, Wayne D. (2012), "Willingness to Pay for Cause-Related Marketing: The Impact of Donation Amount and Moderating Effects," *Journal of Marketing Research*, Vol. 49, No. 6, pp. 910-927.

Winterich, Karen Page and Barone, Michael J. (2011), "Warm Glow or Cold, Hard Cash? Social Identity Effects on Consumer Choice for Donation Versus Discount Promotions," *Journal of Marketing Research*, Vol. 48, No. 5, pp. 855-868.

Wells, Victoria K., Ponting, Cerys A., and Peattie, Ken (2011), "Behaviour and climate change: Consumer perceptions of responsibility," *Journal of Marketing Management*, Vol. 27, No. 7/8, pp. 808-833.

Robinson, Stefanie Rosen, Irmak, Caglar, and Jayachandran, Satish (2012), "Choice of Cause in Cause-Related Marketing," *Journal of Marketing*, Vol. 76, No. 4, pp. 126-139.

Delgado-Ceballos, Javier, Aragón-Correa, Juan, Ortiz-de-Mandojana, Natalia, and Rueda-Manzanares, Antonio (2012), "The Effect of Internal Barriers on the Connection Between Stakeholder Integration and Proactive Environmental Strategies," *Journal of Business Ethics*, Vol. 107, No. 3, pp. 281-293.

Assignment 3 due

**3/6 Factor Analysis**

Field Ch. 17  
Hair et al. Ch. 3

**3/13 Factor Analysis con't.**

Fabrigar, Leandre, Duane T. Wegener, Robert C. MacCallum, and Erin J. Strahan (1999), "Evaluating the Use of Exploratory Factor Analysis in Psychological Research," *Psychological Methods*, Vol. 4, No. 3, pp. 272-299.

Gorsuch (1997), "Exploratory Factor Analysis: Its Role in Item Analysis," *Journal of Personality Assessment*, Vol. 68, No. 3, pp. 532-560.



Ford, J.K., MacCallum, R.C., Tait, M. (1986), "The application of exploratory factor analysis in applied psychology: A critical review and analysis," *Personnel Psychology*, Vol. 39, No. pp. 291-314.

Assignment 4 due

### **3/20 Structural Equations Modeling (Intro.)**

Hair et al. Ch. 10, 11, and 12  
Byrne Ch. 1, 2, and 3.

### **3/27 SEM con't. (Mediation and Moderation)**

Cronin Jr, J. J., Smith, J. S., Gleim, M. R., Ramirez, E., and Martinez, J. D. (2011), "Green marketing strategies: an examination of stakeholders and the opportunities they present," *Journal of the Academy of Marketing Science*, 39(1), 158-174.

Fornell, Claes and D.F. Larcker (1981), "Evaluation of Structural Equations Models with Unobservable Variables and Measurement Error," *Journal of Marketing Research*, 18 (February), 39-50.

Steenkamp, Jan-Benedict EM and Hans Baumgartner (2000), "On the Use of Structural Equation Models for Marketing Modeling," *International Journal of Research in Marketing*, 17 (September), 195-202.

Williams, Larry J., Jeffrey R. Edwards, and Robert J. Vandenberg (2003), "Recent Advances in Causal Modeling Methods for Organizational and Management Research," *Journal of Management*, 29 (6), 903-936.

Baron, R. M. and Kenny, D.A. (1986), "The Moderator-Mediator Variable Distinction in Social Psychological Research: Conceptual, Strategic, and Statistical Considerations," *Journal of Personality and Social Psychology*, 51 (6), 1173-1182.

Iacobucci, Dawn, Neela Saldanha, and Xiaoyan Deng (2007), "A Meditation on Mediation: Evidence That Structural Equations Models Perform Better Than Regressions," *Journal of Consumer Psychology*, Vol. 17, No. 2, pp. 140-154.

### **4/3 SEM con't. (Scale Development and Invariance Testing)**

Byrne on Invariance testing.

Brady, Michael K. and J. Joseph Cronin, Jr. (2001), "Some New Thoughts on Conceptualizing Perceived Service Quality: A Hierarchical Approach," *Journal of Marketing*, Vol. 65, No. 3, pp. 34-49.

Daholkar, Pratiba, Dayle Thorpe, and Joseph O. Rentz (1996), "A Measure of Service Quality for Retail Stores: Scale Development and Validation," *Journal of the Academy of Marketing Science*, Vol. 24, No.1, pp. 3-16.

Hinkin, Timothy R. (1995), "A Review of Scale Development Practices in the Study of Organizations," *Journal of Management*, Vol. 21, No. 5, pp. 967-988.

Churchill, Gilbert A. (1979), "A Paradigm for Developing Better Measures of Marketing Constructs," *Journal of Marketing Research*, Vol. 16, No. 1, pp. 64-73.

Mullen, Michael R. (1995), "Diagnosing Measurement Equivalence in Cross-National Research," *Journal of International Business Studies*, Vol. 26, No. 3, pp. 573-596.



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Steenkamp, J-B. and H. Baumgartner (1998), "Assessing measurement invariance in cross-national consumer research," *Journal of Consumer Research*, Vol. 25, pp. 78-90.

Assignment 5 due

**4/10 Cluster Analysis, Multidimensional Scaling, and Correspondence Analysis**

Hair et al. Ch. 8 and 9

**4/17 Cluster Analysis, Multidimensional Scaling, and Correspondence Analysis**

Sharma Ch. 7

Arnold, Mark J. and Kristy E. Reynolds (2003), "Hedonic shopping motivations," *Journal of Retailing*, Vol. 79, pp. 77-95.

Zhang, Chun, Hu, Zuohao, and Gu, Flora F. (2008), "Intra- and Interfirm Coordination of Export Manufacturers: A Cluster Analysis of Indigenous Chinese Exporters," *Journal of International Marketing*, Vol. 16, No. 3, pp.108-135.

Chabowski, Brian R. Jeannette A. Mena, and Tracy L. Gonzalez-Padron (2011), "The structure of sustainability research in marketing, 1958–2008: a basis for future research opportunities," *Journal of the Academy of Marketing Science*, Vol. 39, No. 1, pp. 55-70.

Assignment 6 due

**4/24 Network Analysis**

Scott Ch. 1 through 8

**5/1 Network Analysis con't.**

<http://faculty.ucr.edu/~hanneman/nettext/> (Read the entire online book and do each analysis)

Assignment 7 due

**5/5 FINAL EXAM**