

Your Multivariate “Text” Spring 2009

Introduction

Notes

Conceptual Review
Analytical Review

Chapter 1 The Modern Approach

Readings

Modern Robust Statistical Methods. Erceg-Hurn & Mirosevich, 2008

Notes

The Modern Perspective

Chapter 2 Multiple Regression Review

Readings

Multiple Regression, from 'Statistical Methods for Psychology'. Howell, 2007

Supplemental Readings

Various articles provided on moderation and mediation
Multiple Regression as a General Data-Analytic System. Cohen, 1968

Notes

Multiple Regression: Basics

Supplemental Notes

Variable Importance
General Linear Model

Recommended Texts

Multiple Regression in Behavioral Research, Pedhazur
Applied Regression Analysis, Linear Models, and Related Methods, Fox
Multiple Regression and Beyond, Keith

Chapter 3 Dealing with problems: Robust regression and Validation

Readings

Four assumptions of multiple regression that researchers should always test. Osborne & Waters, 2002
'Measures of Association'. In *Fundamentals of Modern Statistical Methods*. Wilcox, 2002
'Robust Regression'. In *Fundamentals of Modern Statistical Methods*. Wilcox, 2002
'Resampling, Validating, Describing, and Simplifying the Model', in *Regression Modeling Strategies*. Harrell, 2001

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More on Regression: Basics

Recommended Texts

Regression Modeling Strategies, Harrell
Fundamentals of Modern Statistical Methods, Wilcox

Chapter 4 Advanced Regression

Supplemental Readings

Gentle introduction to Quantile Regression. Cade & Noon, 2003

Quantile Regression. Koenker & Hallock, 2001

Bayesian Model Averaging: A Tutorial. Hoeting et al. 1999

Assessment of Response Bias in Mild Head Injury: Beyond Malingering Tests. Millis and Volinsky, 2001

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Expanding Your Regression Vocabulary

Supplemental Notes

Regression summary/overview

Geometric interpretation of regression (supplemental)

Recommended Texts

Applied Regression Analysis, Linear Models, and Related Methods, Fox

Regression Modeling Strategies, Harrell

Elements of Statistical Learning, Hastie, Tibshirani, Friedman (advanced)

Chapter 5 Analysis of Covariance

Supplemental Readings

'Analysis of Variance and Covariance as General Linear Models', from *Statistical Methods for Psychology.* Howell, 2007

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ANCOVA

Recommended Texts

Introducing Anova and Ancova: A GLM Approach, Rutherford

Chapter 6 The Multivariate Approach

Notes

Thinking Multivariately

Supplemental Notes

A Bit About Matrices

Recommended Texts

The Essence of Multivariate Thinking, Harlow

Mathematical Tools for Applied Multivariate Analysis, Carroll & Green

Chapter 7 Principal Components Analysis

Readings

'Principal Components', from *Analyzing Multivariate Data.* Lattin, Carroll, and Green, 2003

Supplemental Readings

Posttraumatic Growth in Adolescence: Examining Its Components and Relationship With PTSD. Levine, Laufer, Hamama-Raz, Stein, Solomon, 2008

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Principal Components

Supplemental Notes

PCA Mechanics

Recommended Texts

Principal Component Analysis, Dunteman

Analyzing Multivariate Data. Lattin, Carroll, and Green

Chapter 8 Canonical Correlation

Readings

A primer on the logic and use of canonical correlation analysis. Thompson, 1991

Supplemental Readings

Academic procrastination and statistics anxiety. Onwuegbuzie, 2004

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Canonical Correlation

Supplemental Notes

Canonical Correlation mechanics

Recommended Texts

Canonical Correlation Analysis, Thompson

Analyzing Multivariate Data. Lattin, Carroll, and Green

Chapter 9 Introduction to Partial Least Squares

Supplemental Readings

An Introduction to Partial Least Squares Regression, Tobias

Supplemental Notes

Partial Least Squares

Chapter 10 Multivariate Analysis of Variance

Readings

'Multivariate Analysis of Variance and Covariance'. In *Using Multivariate Statistics*,
Tabachnick and Fidell, 2007

Supplemental Readings

*Self-Efficacy, Attribution, and Outcome Expectancy Mechanisms in Reading and Writing
Achievement: Grade-Level and Achievement-Level Differences.* Shell, Colvin, and
Bruning, 1995

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MANOVA

MANOVA 2

Supplemental Notes

MANOVA Mechanics

MANOVA Mechanics 2

Recommended Texts

Using Multivariate Statistics, Tabachnick and Fidell

Analyzing Multivariate Data. Lattin, Carroll, and Green

Chapter 11 The Classification Problem

Readings

'Discriminant Function Analysis'. In *The Essence of Multivariate Thinking*, Harlow, 2005

'Logistic Regression'. In *The Essence of Multivariate Thinking*, Harlow, 2005

'Cluster Analysis'. In *The Analysis and Interpretation of Multivariate Data for Social Scientists*, Bartholomew Steele, Moustaki, and Galbraith, 2002

Supplemental Readings

Predictors of Early Termination in a University Counseling Training Clinic, Lampropoulos, Schneider, and Spengler, 2009

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Classification

Supplemental Notes

DFA

DFA Mechanics

Recommended Texts

Logistic Regression: A Primer, Pampel

Discriminant Analysis, Klecka

The Analysis and Interpretation of Multivariate Data for Social Scientists, Bartholomew Steele, Moustaki, and Galbraith

Elements of Statistical Learning, Hastie, Tibshirani, Friedman (advanced)

Data Mining, Witten and Frank

Chapter 12 Path Analysis

Readings

'Path Modeling: Structural Equation Modeling with Measured Variables'. In *Multiple Regression and Beyond*, Keith, 2006

Supplemental Readings

Proactive Coping, Positive Affect, and Well-Being, Greenglass and Lisa Fiksenbaum, 2009

Coping Style Use Predicts Posttraumatic Stress and Complicated Grief Symptom

Severity Among College Students Reporting a Traumatic Loss, Schnider, Elhai, and Gray

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Path Analysis

Recommended Texts

Principals and Practice of Structural Equation Modeling, Kline

Multiple Regression in Behavioral Research, Pedhazur

Multiple Regression and Beyond, Keith

Chapter 13 Factor Analysis

Readings

Factor Analysis, Darlington

Supplemental Readings

The Authentic Personality, Wood, Linley, Maltby, Baliouisis, Joseph

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Factor Analysis

Recommended Texts

Analyzing Multivariate Data, Lattin, Carroll, and Green

Introduction to Factor Analysis, Kim and Mueller

Factor Analysis, Kim and Mueller

Factor Analysis and Related Methods, McDonald

Chapter 14 Advanced Techniques: Confirmatory Factor Analysis, Structural Equation Modeling, Multilevel Modeling

Supplemental Notes

Advanced Approaches

Recommended Texts

Confirmatory Factor Analysis for Applied Research, Brown

Principals and Practice of Structural Equation Modeling, Kline

A First Course in Structural Equation Modeling, Raykov and Marcoulides

Data Analysis Using Regression and Multilevel/Hierarchical Models, Gelman and Hill

Introducing Multilevel Modeling, Kreft and de Leeuw

Hierarchical Linear Models, Bryk and Raudenbush

Epilogue: The Big Picture

Supplemental Notes

Screw the trees, here's the forest: Relationships between modeling techniques