Instructor: Nancy Fagley, Ph.D.
Office: Room A355, Psychology Annex, Busch Campus
Office Hours: Wednesday 2:30-4:00, and by appointment
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Classes: Tuesdays, Room A340, 1:45-4:30pm; Psych Bldg.
Labs: ARC Bldg, Room 121

Objectives

This course is designed to provide experience in conducting multiple regression analyses of data using
SPSS computer software. In addition, you will get experience interpreting the results of multiple regression and
correlational analyses. The course also develops an understanding of the strengths and weaknesses of various
research designs and methodologies and develops an understanding of the threats of valid inference and
interpretation of research results. Finally, the course extends understanding of psychometrics and measurement
issues in psychology. The material presented in this course will provide the necessary knowledge and skills for
critically analyzing and evaluating research.

Grading

Grades will be based on two examinations and a project, each worth 1/3 of the grade. In addition, you
must complete the CITI training for conducting research involving Human Subjects and submit a copy of
the official letter certifying this. Lab exercises are designed to enhance conceptual understanding as well as
foster practical data analysis skills. Answer keys for assignments will be posted on their due dates. I strongly
urge you to complete each assignment on time, even though they do not “count” in your grade. Past experience
suggests that thoughtful completion of the assignments is related to exam performance, especially if you
carefully go over the answer key and compare your responses to those on the key. I encourage you to ask me
any questions that may be raised by the answer key. Students are encouraged to work together on assignments
(although you should practice composing your answers yourself, since precise wording is often an issue). The
exams will be open book/open notes. Letter grades will be assigned for the Data Analysis Project and each
exam, and then these three grades will be averaged to yield your final letter grade.

Rutgers University welcomes students with disabilities into all of the University’s educational programs. In order
to receive consideration for reasonable accommodations, a student with a disability must contact the
appropriate disability services office at the campus where you are officially enrolled, participate in an intake
interview, and provide documentation: https://ods.rutgers.edu/students/documentation-guidelines. If the
documentation supports your request for reasonable accommodations, your campus’s disability services office
will provide you with a Letter of Accommodations. Please share this letter with your instructors and discuss the
accommodations with them as early in your courses as possible. To begin this process, please complete the
Registration form (https://webapps.rutgers.edu/student-ods/forms-registration).

Required Text

2nd ed. Thousand Oaks, CA: Sage. ISBN: 978-1-4129-8811-7. NOTE: the chapters have changed their positions in the 2nd versus the 1st editions (e.g., in the first edition, chapter 4 was on bivariate correlation, but it is now chapter 6 in the second edition). Therefore the second or third editions are preferable.
Class Topics and Assigned Readings* (*subject to change—tentative schedule)

1. Jan. 21  **Introductions; Topics in Bivariate Correlation/Regression**
   CI for $r$; Testing the difference between two independent $r$ values; Cohen & Cohen (henceforth C & C): section 2.8.3. Meyers et al. ch. 3. Skim Meyers et al. ch 2 for a review of basic concepts.

2. Jan. 28  **Data Screening; Multiple Regression Analysis; Significance test of $R$; shrunken $R$ sq.**
   Meyers et al. ch 3 and ch 7; LAB–ARC Room 121
   Skim Meyers et al. ch 2 for a review of basic concepts.

3. Feb. 4  **Multiple Regression Analysis: Significance of individual IVs; Assessing their relative importance; ballantines;**
   Meyers et al. ch 7A & B [review ch. 6A on bivariate, which was assigned last semester]; Wampold & Freund (1987). [Supplemental: Budescu, Dominance Analysis, first 5 pages] LAB-ARC Rm 121

4. Feb. 11  **Factors Affecting $r$ or $R$: outliers, reliability, restricted range, combining groups, etc. and Power/Sample size issues.**

5. Feb. 18  **Three kinds of multiple regression analysis: Simultaneous, hierarchical, stepwise. Moderation vs. Mediation.**

6. Feb. 25  **Validity across populations; Differential Prediction for Subgroups--consistency across subgroups and detecting bias in prediction.**
   Keppel & Zedeck (1989) Differential Prediction (437-444); Bond: Bias in Mental Tests/Prediction. LAB–ARC Rm. 121

7. Mar. 3  Project Presentations

8. Mar. 10 Exam I (remember to read the assigned readings for March 24)

9. Mar. 17  **spring break** no class [but please read the assigned readings for next week]

    **Four types of validity--Overview.** Readings: Judd & Kenny, ch. on validity [or Cook & Campbell chapter on validity]; Kazdin (1998) Control Groups; Boot (2013) Pervasive problem with placebos in psychology.

11. Mar. 31  **Construct validity and Measurement (classical test theory, modern test theory, construct validation, SEM approaches; instrument development)**
    Readings: Murphy & Davidshofer -- Validity of Measurement: Content & Construct Validity; John & Benet-Martinez - Measurement: Reliability, construct validation, and scale construction [Supplemental: Giles ch. 8, Scale Construction].
11. April 7 **Statistical Conclusion Validity and Internal Validity**.
   Observation. [supplemental: Cohen- Things I Have Learned, So Far;
   Kaplan: Reliability and Validity. Critique Assign due

12. April 14 **Internal Validity continued; External Validity**
   Turlik (2009) Evaluating the Internal Validity of a Randomized
   Controlled Trial. Locke: Generalizing from lab to field (chl);
   Anderson (1999) Res.in the Psych Lab: Truth or Triviality;
   Campbell: Labs, Fields, & Straw Issues (ch14); Stone (1984).
   Critique Assign due

13. April 21 **Treatment Outcome Research**—Group and Single Case Approaches--
    chapter by Spokas, Rodebaugh, & Heimberg (2008) Treatment
    Outcome Research;
    **Single Case Designs** -- Kendall & Nay;
    **Qualitative Research** -- Dooley ch.13 Qualitative Research; Sommer &
    Sommer (1991) Content Analysis. Critique Assign due

14. April 28 **RCTs and CONSORT Diagrams; Other Analyses and Issues**;
    Tinsley & Tinsley: Factor Analysis in Counseling Research. Item
    analysis and factor analysis in scale development [supplemental:
    Baumeister- Writing Narrative Literature Reviews. Meyers et al. ch
    10A.1-10A.6: Logistic Regression] Critique Assign due

15. May 5 Exam II – critique of an empirical article(ARC, Rm 121)

**References**

Anderson (1999) Res.in the Psych Lab: Truth or Triviality;
Budescu, Dominance Analysis, first 5 pages
Bond: Bias in Mental Tests/Prediction
Campbell: Labs, Fields, & Straw Issues (ch14);
   for the behavioral sciences* (2nd ed.). Hillsdale, NJ: Erlbaum. (portion of
   chapter 2)
Cook & Campbell ch. 10 True Experiments;
Dooley-Social Research and Theory;
Dooley ch.13 Qualitative Research
Fagley (1985). Applied statistical power analysis and the interpretation of
nonsignificant results by research consumers. *Journal of Counseling
Psychology*, 32, 391-396.
validation, and scale construction (chapter 13). In H. T. Reis, & C. M. Judd (Eds.), Handbook of research methods in social and personality psychology. New York: Cambridge University Press.


Locke: Generalizing from lab to field (ch1); Maxwell (2000) Sample Size and Multiple Regression Analysis, Psychological Methods.


Wasik & Loven, 1980 Observation.

Supplemental
Baumeister- Writing Narrative Literature Reviews.
Cohen- Things I Have Learned, So Far; Kaplan: Reliability and Validity.
Kraemer et al. (2002) Mediators & Moderators in RCTs

Other good resources or supplemental books
Giles, D. C. (2002). Advanced research methods in psychology. New York: Routledge. (you will have access to pdf files of chapters 5 and 8)

On scale and instrument/measure construction:
Giles (see previous section) ch. 8, Scale Construction.