List of Topics with Key Articles or Chapters

ANCOVA

Miller, G. A., & Chapman, J. P. (2001). Misunderstanding analysis of covariance. *Journal of Abnormal Psychology*, *110*, 40-48. doi: 10.1037//0021-843X.110.1.40

ANOVA

Atkinson, G. (2001). Analysis of repeated measurements in physical therapy research. *Physical Therapy in Sports*, *2*, 194-208. doi: 10.1054/ptsp.2001.0071

Pierce, C. A., Block, R. A., & Aguinis, H. (2004). Cautionary note on reporting eta-squared values from multifactor ANOVA designs. *Educational and Psychological Measurement*, *64*, 916-924.

Sauder, D. C., & DeMars C. E. (2019). An Updated recommendation for multiple comparisons. *Advances in Methods and Practices in Psychological Science*, *2*, 26-44. doi:10.1177/2515245918808784

Smith, E. R. (2000). Research design. In H. T. Reis & C. M. Judd (Eds.), *Handbook of research methods in social and personality psychology* (p. 17–39). Cambridge University Press.

Spinner, B., & Gabriel, R. M. (1981). Factorial analysis of variance with unequal cell frequencies. *Canadian Psychology*, *22*, 260-270.

Bayesian statistics

Kruschke, J. K., & Liddell, T. M. (2017). Bayesian data analysis for newcomers. *Psychonomic Bulletin & Review (published online)*. doi: 10.3758/s13423-017-1272-1

Bootstrapping

Boos, D. D. (2003). Introduction to the bootstrap world. *Statistical Science*, *18*, 168-174.

Hesterberg, T. C. (2015) What teachers should know about the bootstrap: resampling in the undergraduate statistics curriculum. *The American Statistician*, *69*, 371-386. http://dx.doi.org/10.1080/00031305.2015.1089789

Confidence intervals

Cumming G., & Finch, S. (2005). Inference by eye. Confidence intervals and how to read pictures of data. *American Psychologist*, *60*, 170-180. doi: 10.1037/0003-066X.60.2.170

Correlation

de Winter, J. C. F., Gosling, S. D., & Potter, J. (2016). Comparing the Pearson and Spearman correlation coefficients across distributions and sample sizes: A tutorial using simulations and empirical data. *Psychological Methods*, *21*, 273-290.

Design

Bagley Thompson, C., & Panacek, E. A. (2006). Research study designs: Experimental and quasi-experimental. *Air Medical Journal*, *25*, 242-246.

Smith, E. R. (2000). Research design. In H. T. Reis & C. M. Judd (Eds.), *Handbook of research methods in social and personality psychology* (p. 17–39). Cambridge University Press.

Distributions and properties

DeCarlo, L. T. (1997). On the meaning and use of kurtosis. *Psychological Methods*, *2*, 292-307.

Effect size

Kelley, K., & Preacher, K. J., (2012). On effect size. *Psychological Methods*, *17*, 137-152. doi: 10.1037/a0028086

Lakens, D. (2013). Calculating and reporting effect sizes to facilitate cumulative science: a practical primer for t-tests and ANOVAs. *frontiers in Psychology*. doi: 10.3389/fpsyg.2013.00863

Schäfer T., & Schwarz, M. A. (2019). The Meaningfulness of effect sizes in psychological research: Differences between sub-disciplines and the impact of potential biases. *Frontiers in Psychology*, *10*, 813. doi: 10.3389/fpsyg.2019.00813

Factor analysis

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. doi: 10.1037//1082-989X.4.3.272

Preacher, K. J., & MacCallum, R. C. (2003). Repairing Tom Swift's electric factor analysis machine. *Understanding Statistics*, *2*, 13-43.

Watkins, M. W. (2018). Exploratory factor analysis: A guide to best practice. *Journal of Black Psychology*, *44*, 219-246. doi: 10.1177/0095798418771807

Linear regression

Hoyt, W. T., Leierer, S., & Millington, M. J. (2006). Analysis and interpretation of findings using multiple regression techniques. *Rehabilitation Counseling Bulletin*, *49*, 223-233.

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Lorenz, F. O. (1987). Teaching about influence in simple regression. *Teaching Sociology*, *15*, 173-177. https://www.jstor.org/stable/1318032

Wendorf, C. A. (2004). Primer on multiple regression coding: Common forms and the additional case of repeated contrasts. *Understanding Statistics*, *3*, 47-57.

Williams, M. N., Gomez Grajales, C. A., & Kurkiewicz, D. (2013). Assumptions of multiple regression. Correcting two misconceptions. *Practical Assessment, Research & Evaluation*, *18(11)*. Available online: https://pareonline.net/getvn.asp?v=18&n=11.

Logistic regression analysis

Huang, F. L., & Moon, T. R. (2013). What are the odds of that? A primer on understanding logistic regression. *Gifted Child Quarterly*, *57*, 197-204. doi: 10.1177/0016986213490022

Longitudinal analysis

Gibbons, R. D., Hedeker, D., & DuToit, S. (2010). Advances in analysis of longitudinal data. *Annual Review of Clinical Psychology*, *6*, 79-107. doi: 10.1146/annurev.clinpsy.032408.153550

Measurement: Classical test theory approach

DeVellis, R. F. (2006). Classical test theory. *Medical Care*, *44*, S50 S59. http://www.jstor.org/stable/41219505

Measurement: Item response theory

Toland, M. D. (2014). Practical guide to conducting an item response theory analysis. *Journal of Early Adolescence*, *34*, 120-151. doi: 10.1177/0272431613511332

Measurement: Test construction and validation

Clark, L. A., & Watson, D. (1995). Constructing validity: Basic issues in objective scale development. *Psychological Assessment*, *7*, 309-319. doi: 10.1037/1040-3590.7.3.309

Clark, L. A., & Watson, D. (2019, March 21). Constructing validity: New developments in creating objective measuring instruments. *Psychological Assessment*. Advance online publication. http://dx.doi.org/10.1037/pas0000626

Mediation

Hayes, A. F., & Rockwood, N. J., (2016). Regression based statistical mediation and moderation analysis in clinical research: Observations, recommendations and implementation. *Behaviour Research and Therapy*, 1-19. http://dx.doi.org/10.1016/j.brat.2016.11.001

Meta-Analysis

Cheung, M. W. L., & Vijayakumar, R. (2016). A guide to conducting a meta-analysis. *Neuropsychology Review*, *26*, 121-128. doi: 10.1007/s11065-016-9319-z

Johnson, B. T., & Eagly, A. H. (2014). Meta-analysis of research in social and personality psychology. In H. T. Reis & C. M. Judd (Eds.), *Handbook of research methods in social and personality psychology* (2nd Ed., pp. 675-707). London: Cambridge University Press.

Missing data methods

Baraldi, A. N., & Enders, C. K. (2010). An introduction to modern missing data analyses. *Journal of School Psychology*, *48*, 5–37. doi: 10.1016/j.jsp.2009.10.001

Graham, J. W. (2009). Missing data analysis: Making it work in the real world. *Annual Review of Psychology*, *60*, 549–576. doi: 10.1146/annurev.psych.58.110405.085530

Moderation in multiple regression

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Multilevel modeling

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Nezlek, J. B. (2008). An introduction to multilevel modeling for social and personality psychology. *Social and Personality Psychology Compass*, 2(2), 842-860.

Peugh, J. L. (2010). A practical guide to multilevel modeling. *Journal of School Psychology*, *48*, 85-112. doi:10.1016/j.jsp.2009.09.002

Multiple correlation

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. doi: 10.1177/1094428105278021

New statistics

Morling, B., & Calin-Jageman, R. J. (2020). What psychology teachers should know about open science and the new statistics. *Teaching of Psychology*, *47*, 169-179.

Null Hypothesis Significance Testing (NHST)

Amrhein, V., Greenland, S., & McShane, B. (2019). Retire statistical significance (Comment). *Nature*, *567*, 305-307.

Poisson regression

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. doi: 10.1080/00223890802634175

Power

Faul, F., Erdfelder, E., Buchner, A., & Lang, A.-G. (2009). Statistical power analyses using G*Power 3.1: Tests for correlation and regression analyses. *Behavior Research Methods*, *41*, 1149-1160.

Maxwell, S. E., Kelley, K., & Rausch, J. R. (2008). Sample size planning for statistical power and accuracy in parameter estimation. *Annual Review of Psychology*, *59*, 537-563. doi: 10.1146/annurev.psych.59.103006.093735

Reporting standards

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Sample size estimation for parameter estimate accuracy

Maxwell, S. E., Kelley, K., & Rausch, J. R. (2008). Sample size planning for statistical power and accuracy in parameter estimation. *Annual Review of Psychology*, *59*, 537-563. doi: 10.1146/annurev.psych.59.103006.093735

Structural equation modeling and confirmatory factor analysis

Weston, R. & Gore Jr, P. A. (2006). A brief guide to structural equation modeling. *The Counseling Psychologist*, *34*, 719-751. doi: 10.1177/0011000006286345

Whitley, B. E., & Kite, M. E. (2018). *Principles of Research in Behavioral Science. Fourth Edition*. NY: Routledge. See chapter 12: Factor analysis, path analysis, and structural equation modeling.