## betaDelta: References

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## References

- Andrews, D. W. K. (1991). Heteroskedasticity and autocorrelation consistent covariance matrix estimation. *Econometrica*, 59(3), 817. https://doi.org/10.2307/2938229
- Andrews, D. W. K. (2000). Inconsistency of the bootstrap when a parameter is on the boundary of the parameter space. *Econometrica*, 68(2), 399–405. https://doi.org/10.1111/1468-0262.00114
- Andrews, D. W. K., & Monahan, J. C. (1992). An improved heteroskedasticity and autocorrelation consistent covariance matrix estimator. *Econometrica*, 60(4), 953. https://doi.org/10.2307/2951574
- Arbuckle, J. L. (1996). Full information estimation in the presence of incomplete data. In G. A. Marcoulides & R. E. Schumacker (Eds.), Advanced structural equation modeling. https://doi.org/10.4324/9781315827414
- Arbuckle, J. L. (2020). Amos 27.0 user's guide. Chicago, IBM SPSS.
- Arbuckle, J. L. (2021). Amos 28.0 user's guide. Chicago, IBM SPSS.
- Aroian, L. A. (1947). The probability function of the product of two normally distributed variables.

  The Annals of Mathematical Statistics, 18(2), 265–271. https://doi.org/10.1214/aoms/
  1177730442
- Asparouhov, T., Hamaker, E. L., & Muthén, B. (2017). Dynamic structural equation models. Structural Equation Modeling: A Multidisciplinary Journal, 25(3), 359–388. https://doi.org/10.1080/10705511.2017.1406803

- Asparouhov, T., & Muthén, B. O. (2022). *Multiple imputation with Mplus* (tech. rep.). http://www.statmodel.com/download/Imputations7.pdf
- Baltes, P. B., & Nesselroade, J. R. (1979). History and rationale of longitudinal research. In J. R. Nesselroade & P. B. Baltes (Eds.), Longitudinal research in the study of behavior and development. New York, NY, Academic Press.
- Barnard, G. A., Collins, J. R., Farewell, V. T., Field, C. A., Kalbfleisch, J. D., Nash, S. W., Parzen, E., Prentice, R. L., Reid, N., Sprott, D. A., Switzer, P., Warren, W. G., & Weldon, K. L. (1981). Nonparametric standard errors and confidence intervals: Discussion. The Canadian Journal of Statistics / La Revue Canadienne de Statistique, 9(2), 158–170. https://doi.org/10.2307/3314609
- Baron, R. M., & 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. https://doi.org/10.1037/0022-3514.51.6.1173
- Bauer, D. J., Preacher, K. J., & Gil, K. M. (2006). Conceptualizing and testing random indirect effects and moderated mediation in multilevel models: New procedures and recommendations. *Psychological Methods*, 11(2), 142–163. https://doi.org/10.1037/1082-989x.11.2.142
- Beran, R. (2003). The impact of the bootstrap on statistical algorithms and theory. *Statistical Science*, 18(2). https://doi.org/10.1214/ss/1063994972
- Biesanz, J. C., Falk, C. F., & Savalei, V. (2010). Assessing mediational models: Testing and interval estimation for indirect effects. *Multivariate Behavioral Research*, 45(4), 661–701. https://doi.org/10.1080/00273171.2010.498292
- Blanca, M. J., Arnau, J., López-Montiel, D., Bono, R., & Bendayan, R. (2013). Skewness and kurtosis in real data samples. *Methodology*, 9(2), 78–84. https://doi.org/10.1027/1614-2241/a000057
- Boettiger, C., & Eddelbuettel, D. (2017). An introduction to Rocker: Docker containers for R. *The R Journal*, 9(2), 527. https://doi.org/10.32614/rj-2017-065
- Bollen, K. A., & Stine, R. (1990). Direct and indirect effects: Classical and bootstrap estimates of variability. *Sociological Methodology*, 20, 115. https://doi.org/10.2307/271084

- Boos, D. D. (2003). Introduction to the bootstrap world. Statistical Science, 18(2). https://doi.org/10.1214/ss/1063994971
- Bradley, J. V. (1978). Robustness? British Journal of Mathematical and Statistical Psychology, 31(2), 144–152. https://doi.org/10.1111/j.2044-8317.1978.tb00581.x
- Browne, M. W. (1984). Asymptotically distribution-free methods for the analysis of covariance structures. *British Journal of Mathematical and Statistical Psychology*, 37(1), 62–83. https://doi.org/10.1111/j.2044-8317.1984.tb00789.x
- Casella, G. (2003). Introduction to the silver anniversary of the bootstrap. Statistical Science, 18(2). https://doi.org/10.1214/ss/1063994967
- Chen, G., Glen, D. R., Saad, Z. S., Hamilton, J. P., Thomason, M. E., Gotlib, I. H., & Cox, R. W. (2011). Vector autoregression, structural equation modeling, and their synthesis in neuroimaging data analysis. Computers in Biology and Medicine, 41(12), 1142–1155. https://doi.org/10.1016/j.compbiomed.2011.09.004
- Cheong, J., MacKinnon, D. P., & Khoo, S. T. (2003). Investigation of mediational processes using parallel process latent growth curve modeling. Structural Equation Modeling: A Multidisciplinary Journal, 10(2), 238–262. https://doi.org/10.1207/s15328007sem1002\_5
- Chesher, A., & Jewitt, I. (1987). The bias of a heteroskedasticity consistent covariance matrix estimator. *Econometrica*, 55(5), 1217. https://doi.org/10.2307/1911269
- Cheung, G. W., & Lau, R. S. (2007). Testing mediation and suppression effects of latent variables. Organizational Research Methods, 11(2), 296–325. https://doi.org/10.1177/1094428107300343
- Cheung, M. W.-L. (2007). Comparison of approaches to constructing confidence intervals for mediating effects using structural equation models. Structural Equation Modeling: A Multidisciplinary Journal, 14(2), 227–246. https://doi.org/10.1080/10705510709336745
- Cheung, M. W.-L. (2009a). Comparison of methods for constructing confidence intervals of standardized indirect effects. *Behavior Research Methods*, 41(2), 425–438. https://doi.org/10. 3758/brm.41.2.425

- Cheung, M. W.-L. (2009b). Constructing approximate confidence intervals for parameters with structural equation models. *Structural Equation Modeling: A Multidisciplinary Journal*, 16(2), 267–294. https://doi.org/10.1080/10705510902751291
- Cheung, M. W.-L. (2021). Synthesizing indirect effects in mediation models with meta-analytic methods. *Alcohol and Alcoholism*, 57(1), 5–15. https://doi.org/10.1093/alcalc/agab044
- Cheung, S. F., & Pesigan, I. J. A. (2023a). FINDOUT: Using either SPSS commands or graphical user interface to identify influential cases in structural equation modeling in AMOS.

  Multivariate Behavioral Research, 1–5. https://doi.org/10.1080/00273171.2022.2148089
- Cheung, S. F., & Pesigan, I. J. A. (2023b). semlbci: An R package for forming likelihood-based confidence intervals for parameter estimates, correlations, indirect effects, and other derived parameters. Structural Equation Modeling: A Multidisciplinary Journal, 1–15. https://doi.org/10.1080/10705511.2023.2183860
- Cheung, S. F., Pesigan, I. J. A., & Vong, W. N. (2022). DIY bootstrapping: Getting the non-parametric bootstrap confidence interval in SPSS for any statistics or function of statistics (when this bootstrapping is appropriate). Behavior Research Methods, 55(2), 474–490. https://doi.org/10.3758/s13428-022-01808-5
- Chow, S.-M., Ho, M.-h. R., Hamaker, E. L., & Dolan, C. V. (2010). Equivalence and differences between structural equation modeling and state-space modeling techniques. Structural Equation Modeling: A Multidisciplinary Journal, 17(2), 303–332. https://doi.org/10.1080/10705511003661553
- Chow, S.-M., Losardo, D., Park, J., & Molenaar, P. C. M. (2023). Continuous-time dynamic models:

  Connections to structural equation models and other discrete-time models. In R. H. Hoyle

  (Ed.), Handbook of structural equation modeling (2nd ed.). New York, The Guilford Press.
- Cochran, W. G. (1952). The  $\chi^2$  test of goodness of fit. The Annals of Mathematical Statistics, 23(3), 315–345. https://doi.org/10.1214/aoms/1177729380
- Cohen, J. (1988). Statistical power analysis for the behavioral sciences (2nd ed.). Routledge. https://doi.org/10.4324/9780203771587

- Cole, D. A., & Maxwell, S. E. (2003). Testing mediational models with longitudinal data: Questions and tips in the use of structural equation modeling. *Journal of Abnormal Psychology*, 112(4), 558–577. https://doi.org/10.1037/0021-843x.112.4.558
- Craig, C. C. (1936). On the frequency function of xy. The Annals of Mathematical Statistics, 7(1), 1–15. https://doi.org/10.1214/aoms/1177732541
- Cribari-Neto, F. (2004). Asymptotic inference under heteroskedasticity of unknown form. Computational Statistics & Data Analysis, 45(2), 215–233. https://doi.org/10.1016/s0167-9473(02)00366-3
- Cribari-Neto, F., & da Silva, W. B. (2010). A new heteroskedasticity-consistent covariance matrix estimator for the linear regression model. *AStA Advances in Statistical Analysis*, 95(2), 129–146. https://doi.org/10.1007/s10182-010-0141-2
- Cribari-Neto, F., Souza, T. C., & Vasconcellos, K. L. P. (2007). Inference under heteroskedasticity and leveraged data. Communications in Statistics Theory and Methods, 36 (10), 1877–1888. https://doi.org/10.1080/03610920601126589
- Cribari-Neto, F., Souza, T. C., & Vasconcellos, K. L. P. (2008). Errata: Inference under heteroskedasticity and leveraged data, Communications in Statistics, Theory and Methods, 36, 1877–1888, 2007. Communications in Statistics Theory and Methods, 37(20), 3329–3330. https://doi.org/10.1080/03610920802109210
- Cronbach, L. J., & Furby, L. (1970). How we should measure "change": Or should we? *Psychological Bulletin*, 74(1), 68–80. https://doi.org/10.1037/h0029382
- Curran, P. J., & Bauer, D. J. (2011). The disaggregation of within-person and between-person effects in longitudinal models of change. Annual Review of Psychology, 62(1), 583–619. https://doi.org/10.1146/annurev.psych.093008.100356
- Davidson, R., & MacKinnon, J. G. (1993). Estimation and inference in econometrics. New York, NY, Oxford University Press.
- Davison, A. C., & Hinkley, D. V. (1997). Bootstrap methods and their application. Cambridge, New York, NY, USA, Cambridge University Press. https://doi.org/10.1017/CBO9780511802843

- Davison, A. C., Hinkley, D. V., & Young, G. A. (2003). Recent developments in bootstrap methodology. Statistical Science, 18(2). https://doi.org/10.1214/ss/1063994969
- Deboeck, P. R., & Preacher, K. J. (2015). No need to be discrete: A method for continuous time mediation analysis. Structural Equation Modeling: A Multidisciplinary Journal, 23(1), 61– 75. https://doi.org/10.1080/10705511.2014.973960
- Demeshko, M., Washio, T., Kawahara, Y., & Pepyolyshev, Y. (2015). A novel continuous and structural VAR modeling approach and its application to reactor noise analysis. *ACM Transactions on Intelligent Systems and Technology*, 7(2), 1–22. https://doi.org/10.1145/2710025
- Dudgeon, P. (2017). Some improvements in confidence intervals for standardized regression coefficients. *Psychometrika*, 82(4), 928–951. https://doi.org/10.1007/s11336-017-9563-z
- Eddelbuettel, D. (2013). Seamless R and C++ integration with Rcpp. Springer New York. https://doi.org/10.1007/978-1-4614-6868-4
- Eddelbuettel, D., & Balamuta, J. J. (2017). Extending R with C++: A brief introduction to Rcpp.

  PeerJ Preprints, 3188v1(3). https://doi.org/10.7287/peerj.preprints.3188v1
- Eddelbuettel, D., Francois, R., Allaire, J., Ushey, K., Kou, Q., Russell, N., Ucar, I., Bates, D., & Chambers, J. (2023). Rcpp: Seamless R and C++ integration. https://CRAN.R-project.org/package=Rcpp
- Eddelbuettel, D., & François, R. (2011). Rcpp: Seamless R and C++ integration. *Journal of Statistical Software*, 40(8). https://doi.org/10.18637/jss.v040.i08
- Eddelbuettel, D., & Sanderson, C. (2014). RcppArmadillo: Accelerating R with high-performance C++ linear algebra. Computational Statistics & Data Analysis, 71, 1054–1063. https://doi.org/10.1016/j.csda.2013.02.005
- Efron, B. (1979a). Bootstrap methods: Another look at the jackknife. *The Annals of Statistics*, 7(1). https://doi.org/10.1214/aos/1176344552
- Efron, B. (1979b). Computers and the theory of statistics: Thinking the unthinkable. SIAM Review, 21(4), 460–480. https://doi.org/10.1137/1021092

- Efron, B. (1981a). Nonparametric standard errors and confidence intervals. Canadian Journal of Statistics / La Revue Canadienne de Statistique, 9(2), 139–158. https://doi.org/10.2307/3314608
- Efron, B. (1981b). Nonparametric standard errors and confidence intervals: Rejoinder. The Canadian Journal of Statistics / La Revue Canadianne de Statistique, 9(2), 170–172. https://doi.org/10.2307/3314610
- Efron, B. (1987). Better bootstrap confidence intervals. Journal of the American Statistical Association, 82(397), 171–185. https://doi.org/10.1080/01621459.1987.10478410
- Efron, B. (1988). Bootstrap confidence intervals: Good or bad? *Psychological Bulletin*, 104(2), 293–296. https://doi.org/10.1037/0033-2909.104.2.293
- Efron, B. (2003). Second thoughts on the bootstrap. Statistical Science, 18(2). https://doi.org/10. 1214/ss/1063994968
- Efron, B. (2012). Bayesian inference and the parametric bootstrap. The Annals of Applied Statistics, 6(4). https://doi.org/10.1214/12-aoas571
- Efron, B., & Tibshirani, R. J. (1993). An introduction to the bootstrap. New York, Chapman & Hall. https://doi.org/10.1201/9780429246593
- Enders, C. K. (2010). Applied missing data analysis. Guilford Publications.
- Epskamp, S., Waldorp, L. J., M ottus, R., & Borsboom, D. (2018). The Gaussian graphical model in cross-sectional and time-series data. *Multivariate Behavioral Research*, 53(4), 453–480. https://doi.org/10.1080/00273171.2018.1454823
- Ernst, M. D., & Hutson, A. D. (2003). Utilizing a quantile function approach to obtain exact bootstrap solutions. *Statistical Science*, 18(2). https://doi.org/10.1214/ss/1063994978
- Fairchild, A. J., & MacKinnon, D. P. (2014). Using mediation and moderation analyses to enhance prevention research. In *Defining prevention science* (pp. 537–555). Springer US. https://doi.org/10.1007/978-1-4899-7424-2\_23
- Ferrer, E., & McArdle, J. (2003). Alternative structural models for multivariate longitudinal data analysis. Structural Equation Modeling: A Multidisciplinary Journal, 10(4), 493–524. https://doi.org/10.1207/s15328007sem1004\_1

- Fritz, M. S., & MacKinnon, D. P. (2007). Required sample size to detect the mediated effect.

  \*Psychological Science\*, 18(3), 233–239. https://doi.org/10.1111/j.1467-9280.2007.01882.x
- Fritz, M. S., Taylor, A. B., & MacKinnon, D. P. (2012). Explanation of two anomalous results in statistical mediation analysis. *Multivariate Behavioral Research*, 47(1), 61–87. https://doi.org/10.1080/00273171.2012.640596
- Gates, K. M., Molenaar, P. C., Hillary, F. G., Ram, N., & Rovine, M. J. (2010). Automatic search for fMRI connectivity mapping: An alternative to Granger causality testing using formal equivalences among SEM path modeling, VAR, and unified SEM. *NeuroImage*, 50(3), 1118–1125. https://doi.org/10.1016/j.neuroimage.2009.12.117
- Goodman, L. A. (1960). On the exact variance of products. Journal of the American Statistical Association, 55(292), 708–713. https://doi.org/10.1080/01621459.1960.10483369
- Graham, J. W., Olchowski, A. E., & Gilreath, T. D. (2007). How many imputations are really needed? some practical clarifications of multiple imputation theory. *Prevention Science*, 8(3), 206–213. https://doi.org/10.1007/s11121-007-0070-9
- Hall, P. (2003). A short prehistory of the bootstrap. Statistical Science, 18(2). https://doi.org/10. 1214/ss/1063994970
- Hamaker, E. L., Kuiper, R. M., & Grasman, R. P. P. P. (2015). A critique of the cross-lagged panel model. *Psychological Methods*, 20(1), 102–116. https://doi.org/10.1037/a0038889
- Harvey, A. C. (1990). Forecasting, structural time series models and the Kalman filter. Cambridge University Press. https://doi.org/10.1017/cbo9781107049994
- Hatemi-J, A. (2003). A new method to choose optimal lag order in stable and unstable VAR models.

  Applied Economics Letters, 10(3), 135–137. https://doi.org/10.1080/1350485022000041050
- Hatemi-J, A. (2004). Multivariate tests for autocorrelation in the stable and unstable VAR models.

  Economic Modelling, 21(4), 661–683. https://doi.org/10.1016/j.econmod.2003.09.005
- Hayes, A. F. (2009). Beyond Baron and Kenny: Statistical mediation analysis in the new millennium.

  Communication Monographs, 76(4), 408–420. https://doi.org/10.1080/03637750903310360
- Hayes, A. F. (2022). Introduction to mediation, moderation, and conditional process analysis: A regression-based approach (3rd ed.). Guilford Publications.

- Hayes, A. F., & Cai, L. (2007). Using heteroskedasticity-consistent standard error estimators in OLS regression: An introduction and software implementation. Behavior Research Methods, 39(4), 709–722. https://doi.org/10.3758/bf03192961
- Hayes, A. F., & Scharkow, M. (2013). The relative trustworthiness of inferential tests of the indirect effect in statistical mediation analysis. *Psychological Science*, 24(10), 1918–1927. https://doi.org/10.1177/0956797613480187
- Hesterberg, T. C. (2014). What teachers should know about the bootstrap: Resampling in the undergraduate statistics curriculum. https://arxiv.org/abs/1411.5279
- Hesterberg, T. C. (2015). What teachers should know about the bootstrap: Resampling in the undergraduate statistics curriculum. *The American Statistician*, 69(4), 371–386. https://doi.org/10.1080/00031305.2015.1089789
- Hinkley, D. V. (1977). Jackknifing in unbalanced situations. *Technometrics*, 19(3), 285–292. https://doi.org/10.1080/00401706.1977.10489550
- Holmes, S. (2003a). Bootstrapping phylogenetic trees: Theory and methods. *Statistical Science*, 18(2). https://doi.org/10.1214/ss/1063994979
- Holmes, S. (2003b). Bradley Efron: A conversation with good friends. Statistical Science, 18(2). https://doi.org/10.1214/ss/1063994981
- Horn, S. D., Horn, R. A., & Duncan, D. B. (1975). Estimating heteroscedastic variances in linear models. Journal of the American Statistical Association, 70(350), 380–385. https://doi. org/10.1080/01621459.1975.10479877
- Horowitz, J. L. (2003). The bootstrap in econometrics. Statistical Science, 18(2). https://doi.org/ 10.1214/ss/1063994976
- Hunter, M. D. (2017). State space modeling in an open source, modular, structural equation modeling environment. Structural Equation Modeling: A Multidisciplinary Journal, 25(2), 307–324. https://doi.org/10.1080/10705511.2017.1369354
- Iacus, S. M. (2008). Simulation and inference for stochastic differential equations. Springer New York. https://doi.org/10.1007/978-0-387-75839-8

- James, L. R., & Brett, J. M. (1984). Mediators, moderators, and tests for mediation. *Journal of Applied Psychology*, 69(2), 307–321. https://doi.org/10.1037/0021-9010.69.2.307
- Jones, J. A., & Waller, N. G. (2013a). Computing confidence intervals for standardized regression coefficients. Psychological Methods, 18(4), 435–453. https://doi.org/10.1037/a0033269
- Jones, J. A., & Waller, N. G. (2013b). The normal-theory and asymptotic distribution-free (ADF) covariance matrix of standardized regression coefficients: Theoretical extensions and finite sample behavior (tech. rep.). University of Minnesota-Twin Cities. Retrieved July 22, 2022, from http://users.cla.umn.edu/~nwaller/downloads/techreports/TR052913.pdf
- Jones, J. A., & Waller, N. G. (2015). The normal-theory and asymptotic distribution-free (ADF) covariance matrix of standardized regression coefficients: Theoretical extensions and finite sample behavior. *Psychometrika*, 80(2), 365–378. https://doi.org/10.1007/s11336-013-9380-y
- Jorgensen, T. D., Pornprasertmanit, S., Schoemann, A. M., & Rosseel, Y. (2022). semTools: Useful tools for structural equation modeling. https://CRAN.R-project.org/package=semTools
- Judd, C. M., & Kenny, D. A. (1981). Process analysis. Evaluation Review, 5(5), 602–619. https://doi.org/10.1177/0193841x8100500502
- Kalman, R. E. (1960). A new approach to linear filtering and prediction problems. *Journal of Basic Engineering*, 82(1), 35–45. https://doi.org/10.1115/1.3662552
- Kauermann, G., & Carroll, R. J. (2001). A note on the efficiency of sandwich covariance matrix estimation. *Journal of the American Statistical Association*, 96(456), 1387–1396. https://doi.org/10.1198/016214501753382309
- Kim, C.-J., & Nelson, C. R. (1999). State-space models with regime switching: Classical and Gibbssampling approaches with applications. The MIT Press. https://doi.org/10.7551/mitpress/ 6444.001.0001
- Kisbu-Sakarya, Y., MacKinnon, D. P., & Miočević, M. (2014). The distribution of the product explains normal theory mediation confidence interval estimation. *Multivariate Behavioral Research*, 49(3), 261–268. https://doi.org/10.1080/00273171.2014.903162

- Koopman, J., Howe, M., & Hollenbeck, J. R. (2014). Pulling the Sobel test up by its bootstraps. In More statistical and methodological myths and urban legends: Doctrine, verity and fable in organizational and social sciences (pp. 224–243). Routledge/Taylor & Francis Group. https://doi.org/10.4324/9780203775851
- Koopman, J., Howe, M., Hollenbeck, J. R., & Sin, H.-P. (2015). Small sample mediation testing: Misplaced confidence in bootstrapped confidence intervals. *Journal of Applied Psychology*, 100(1), 194–202. https://doi.org/10.1037/a0036635
- Kuiper, R. M., & Ryan, O. (2018). Drawing conclusions from cross-lagged relationships: Re-considering the role of the time-interval. Structural Equation Modeling: A Multidisciplinary Journal, 25(5), 809–823. https://doi.org/10.1080/10705511.2018.1431046
- Kurtzer, G. M., cclerget, Bauer, M., Kaneshiro, I., Trudgian, D., & Godlove, D. (2021). hpcng/singularity: Singularity 3.7.3. Zenodo. https://doi.org/10.5281/ZENODO.1310023
- Kurtzer, G. M., Sochat, V., & Bauer, M. W. (2017). Singularity: Scientific containers for mobility of compute (A. Gursoy, Ed.). PLOS ONE, 12(5), e0177459. https://doi.org/10.1371/journal. pone.0177459
- Kwan, J. L. Y., & Chan, W. (2011). Comparing standardized coefficients in structural equation modeling: A model reparameterization approach. Behavior Research Methods, 43(3), 730– 745. https://doi.org/10.3758/s13428-011-0088-6
- Kwan, J. L. Y., & Chan, W. (2014). Comparing squared multiple correlation coefficients using structural equation modeling. Structural Equation Modeling: A Multidisciplinary Journal, 21(2), 225–238. https://doi.org/10.1080/10705511.2014.882673
- Lahiri, P. (2003). On the impact of bootstrap in survey sampling and small-area estimation. Statistical Science, 18(2). https://doi.org/10.1214/ss/1063994975
- Lele, S. R. (2003). Impact of bootstrap on the estimating functions. Statistical Science, 18(2). https://doi.org/10.1214/ss/1063994973
- Li, K. H., Raghunathan, T. E., & Rubin, D. B. (1991). Large-sample significance levels from multiply imputed data using moment-based statistics and an F reference distribution. Journal of the

- $American\ Statistical\ Association,\ 86 (416),\ 1065-1073.\ https://doi.org/10.1080/01621459.$  1991.10475152
- Li, Y., Oravecz, Z., Zhou, S., Bodovski, Y., Barnett, I. J., Chi, G., Zhou, Y., Friedman, N. P., Vrieze, S. I., & Chow, S.-M. (2022). Bayesian forecasting with a regime-switching zero-inflated multilevel poisson regression model: An application to adolescent alcohol use with spatial covariates. *Psychometrika*, 87(2), 376–402. https://doi.org/10.1007/s11336-021-09831-9
- Li, Y., Wood, J., Ji, L., Chow, S.-M., & Oravecz, Z. (2021). Fitting multilevel vector autoregressive models in Stan, JAGS, and Mplus. *Structural Equation Modeling: A Multidisciplinary Journal*, 29(3), 452–475. https://doi.org/10.1080/10705511.2021.1911657
- Little, R. J. A., & Rubin, D. B. (2019). Statistical analysis with missing data (3rd ed.). Wiley. https://doi.org/10.1002/9781119482260
- Long, J. S., & Ervin, L. H. (2000). Using heteroscedasticity consistent standard errors in the linear regression model. The American Statistician, 54(3), 217–224. https://doi.org/10.1080/ 00031305.2000.10474549
- Lütkepohl, H. (2005). New introduction to multiple time series analysis. Berlin, Springer Berlin Heidelberg. https://doi.org/10.1007/978-3-540-27752-1
- MacKinnon, D. P. (1994). Analysis of mediating variables in prevention and intervention research.

  NIDA research monograph, 139, 127–153.
- MacKinnon, D. P. (2008). *Introduction to statistical mediation analysis*. Hoboken, Erlbaum Psych Press. https://doi.org/10.4324/9780203809556
- Mackinnon, D. P., & Dwyer, J. H. (1993). Estimating mediated effects in prevention studies. *Evaluation Review*, 17(2), 144–158. https://doi.org/10.1177/0193841x9301700202
- MacKinnon, D. P., Fritz, M. S., Williams, J., & Lockwood, C. M. (2007). Distribution of the product confidence limits for the indirect effect: Program PRODCLIN. *Behavior Research Methods*, 39(3), 384–389. https://doi.org/10.3758/bf03193007
- MacKinnon, D. P., Lockwood, C. M., Hoffman, J. M., West, S. G., & Sheets, V. (2002). A comparison of methods to test mediation and other intervening variable effects. *Psychological Methods*, 7(1), 83–104. https://doi.org/10.1037/1082-989x.7.1.83

- MacKinnon, D. P., Lockwood, C. M., & Williams, J. (2004). Confidence limits for the indirect effect:

  Distribution of the product and resampling methods. *Multivariate Behavioral Research*,

  39(1), 99–128. https://doi.org/10.1207/s15327906mbr3901\_4
- MacKinnon, J. G., & White, H. (1985). Some heteroskedasticity-consistent covariance matrix estimators with improved finite sample properties. *Journal of Econometrics*, 29(3), 305–325. https://doi.org/10.1016/0304-4076(85)90158-7
- Maxwell, S. E., & Cole, D. A. (2007). Bias in cross-sectional analyses of longitudinal mediation.

  Psychological Methods, 12(1), 23–44. https://doi.org/10.1037/1082-989x.12.1.23
- Maxwell, S. E., Cole, D. A., & Mitchell, M. A. (2011). Bias in cross-sectional analyses of longitudinal mediation: Partial and complete mediation under an autoregressive model. *Multivariate Behavioral Research*, 46(5), 816–841. https://doi.org/10.1080/00273171.2011.606716
- McArdle, J. J. (2009). Latent variable modeling of differences and changes with longitudinal data.

  Annual Review of Psychology, 60(1), 577–605. https://doi.org/10.1146/annurev.psych.60.

  110707.163612
- McNeish, D., & Hamaker, E. L. (2020). A primer on two-level dynamic structural equation models for intensive longitudinal data in Mplus. *Psychological Methods*, 25(5), 610–635. https://doi.org/10.1037/met0000250
- McNeish, D., & MacKinnon, D. P. (2022). Intensive longitudinal mediation in Mplus. *Psychological Methods*. https://doi.org/10.1037/met0000536
- Merkel, D. (2014). Docker: Lightweight Linux containers for consistent development and deployment. Linux Journal, 2014 (239), 2. https://www.linuxjournal.com/content/docker-lightweight-linux-containers-consistent-development-and-deployment
- Micceri, T. (1989). The unicorn, the normal curve, and other improbable creatures. *Psychological Bulletin*, 105(1), 156–166. https://doi.org/10.1037/0033-2909.105.1.156
- Millsap, R. E. (2011). Statistical approaches to measurement invariance. Routledge. https://doi.org/10.4324/9780203821961

- Muthén, B. O., & Curran, P. J. (1997). General longitudinal modeling of individual differences in experimental designs: A latent variable framework for analysis and power estimation. *Psychological Methods*, 2(4), 371–402. https://doi.org/10.1037/1082-989x.2.4.371
- Muthén, L. K., & Muthén, B. O. (2017). Mplus user's guide. Eighth edition. Los Angeles, CA, Muthén.
- National Research Council. (1982). An assessment of research-doctorate programs in the United States: Social and behavioral sciences. Washington, D.C., National Academies Press. https://doi.org/10.17226/9781
- Neale, M. C., Hunter, M. D., Pritikin, J. N., Zahery, M., Brick, T. R., Kirkpatrick, R. M., Estabrook, R., Bates, T. C., Maes, H. H., & Boker, S. M. (2015). OpenMx 2.0: Extended structural equation and statistical modeling. *Psychometrika*, 81(2), 535–549. https://doi.org/10.1007/s11336-014-9435-8
- Nesselroade, J. R., & Cable, D. G. (1974). Sometimes, it's okay to factor difference scores" the separation of state and trait anxiety. *Multivariate Behavioral Research*, 9(3), 273–284. https://doi.org/10.1207/s15327906mbr0903\_3
- Newey, W. K., & West, K. D. (1987). A simple, positive semi-definite, heteroskedasticity and autocorrelation consistent covariance matrix. *Econometrica*, 55(3), 703. https://doi.org/10.2307/1913610
- Nüst, D., Eddelbuettel, D., Bennett, D., Cannoodt, R., Clark, D., Daróczi, G., Edmondson, M., Fay, C., Hughes, E., Kjeldgaard, L., Lopp, S., Marwick, B., Nolis, H., Nolis, J., Ooi, H., Ram, K., Ross, N., Shepherd, L., Sólymos, P., ... Xiao, N. (2020). The Rockerverse: Packages and applications for containerisation with R. The R Journal, 12(1), 437. https://doi.org/10.32614/rj-2020-007
- Oravecz, Z., Tuerlinckx, F., & Vandekerckhove, J. (2011). A hierarchical latent stochastic differential equation model for affective dynamics. *Psychological Methods*, 16(4), 468–490. https://doi.org/10.1037/a0024375
- O'Rourke, H. P., & MacKinnon, D. P. (2018). Reasons for testing mediation in the absence of an intervention effect: A research imperative in prevention and intervention research. *Journal*

- of Studies on Alcohol and Drugs, 79(2), 171–181. https://doi.org/10.15288/jsad.2018.79.
- O'Rourke, H. P., & MacKinnon, D. P. (2019). The importance of mediation analysis in substanceuse prevention. In *Advances in prevention science* (pp. 233–246). Springer International Publishing. https://doi.org/10.1007/978-3-030-00627-3\_15
- Osborne, R. T., & Suddick, D. E. (1972). A longitudinal investigation of the intellectual differentiation hypothesis. *The Journal of Genetic Psychology*, 121(1), 83–89. https://doi.org/10.1080/00221325.1972.10533131
- Ou, L., Hunter, M. D., & Chow, S.-M. (2019). What's for dynr: A package for linear and nonlinear dynamic modeling in R. The R Journal, 11(1), 91. https://doi.org/10.32614/rj-2019-012
- Oud, J. H., van den Bercken, J. H., & Essers, R. J. (1990). Longitudinal factor score estimation using the Kalman filter. Applied Psychological Measurement, 14(4), 395–418. https://doi. org/10.1177/014662169001400406
- Oud, J. H. L., & Jansen, R. A. R. G. (2000). Continuous time state space modeling of panel data by means of SEM. *Psychometrika*, 65(2), 199–215. https://doi.org/10.1007/bf02294374
- Pawitan, Y. (2013). In all likelihood: Statistical modelling and inference using likelihood. Oxford University Press.
- Pesigan, I. J. A. (2022). Confidence intervals for standardized coefficients: Applied to regression coefficients in primary studies and indirect effects in meta-analytic structural equation modeling (Doctoral dissertation). University of Macau.
- Pesigan, I. J. A., & Cheung, S. F. (2020). SEM-based methods to form confidence intervals for indirect effect: Still applicable given nonnormality, under certain conditions. Frontiers in Psychology, 11. https://doi.org/10.3389/fpsyg.2020.571928
- Pesigan, I. J. A., & Cheung, S. F. (2023). Monte Carlo confidence intervals for the indirect effect with missing data. *Behavior Research Methods*. https://doi.org/10.3758/s13428-023-02114-4
- Pesigan, I. J. A., Sun, R. W., & Cheung, S. F. (2023). betaDelta and betaSandwich: Confidence intervals for standardized regression coefficients in R. Multivariate Behavioral Research, 1–4. https://doi.org/10.1080/00273171.2023.2201277

- Peugh, J. L., & Enders, C. K. (2004). Missing data in educational research: A review of reporting practices and suggestions for improvement. Review of Educational Research, 74(4), 525– 556. https://doi.org/10.3102/00346543074004525
- Politis, D. N. (2003). The impact of bootstrap methods on time series analysis. *Statistical Science*, 18(2). https://doi.org/10.1214/ss/1063994977
- Preacher, K. J., & Hayes, A. F. (2004). SPSS and SAS procedures for estimating indirect effects in simple mediation models. *Behavior Research Methods, Instruments, & Computers*, 36(4), 717–731. https://doi.org/10.3758/bf03206553
- Preacher, K. J., & Hayes, A. F. (2008). Asymptotic and resampling strategies for assessing and comparing indirect effects in multiple mediator models. *Behavior Research Methods*, 40(3), 879–891. https://doi.org/10.3758/brm.40.3.879
- Preacher, K. J., & Selig, J. P. (2012). Advantages of monte carlo confidence intervals for indirect effects. Communication Methods and Measures, 6(2), 77–98. https://doi.org/10.1080/19312458.2012.679848
- R Core Team. (2021). R: A language and environment for statistical computing. R Foundation for Statistical Computing. Vienna, Austria. https://www.R-project.org/
- R Core Team. (2022). R: A language and environment for statistical computing. R Foundation for Statistical Computing. Vienna, Austria. https://www.R-project.org/
- R Core Team. (2023). R: A language and environment for statistical computing. R Foundation for Statistical Computing. Vienna, Austria. https://www.R-project.org/
- Raghunathan, T. E., Lepkowski, J. M., Hoewyk, J. V., & Solenberger, P. (2001). A multivariate technique for multiply imputing missing values using a sequence of regression models.

  Survey Methodology, 27(1), 85–95.
- Rasmussen, J. L. (1987). Estimating correlation coefficients: Bootstrap and parametric approaches.

  Psychological Bulletin, 101(1), 136–139. https://doi.org/10.1037/0033-2909.101.1.136
- Robey, R. R., & Barcikowski, R. S. (1992). Type I error and the number of iterations in Monte Carlo studies of robustness. *British Journal of Mathematical and Statistical Psychology*, 45(2), 283–288. https://doi.org/10.1111/j.2044-8317.1992.tb00993.x

- Rosseel, Y. (2012). lavaan: An R package for structural equation modeling. *Journal of Statistical Software*, 48(2). https://doi.org/10.18637/jss.v048.i02
- Rousselet, G. A., Pernet, C. R., & Wilcox, R. R. (2021). The percentile bootstrap: A primer with step-by-step instructions in R. Advances in Methods and Practices in Psychological Science, 4(1), 1–10. https://doi.org/10.1177/2515245920911881
- Rubin, D. B. (1976). Inference and missing data. Biometrika, 63(3), 581-592. https://doi.org/10. 1093/biomet/63.3.581
- Rubin, D. B. (1987). Multiple imputation for nonresponse in surveys. New York, John Wiley & Sons, Inc. https://doi.org/10.1002/9780470316696
- Ryan, O., & Hamaker, E. L. (2021). Time to intervene: A continuous-time approach to network analysis and centrality. *Psychometrika*, 87(1), 214–252. https://doi.org/10.1007/s11336-021-09767-0
- Savalei, V., & Rosseel, Y. (2021). Computational options for standard errors and test statistics with incomplete normal and nonnormal data in SEM. Structural Equation Modeling: A Multidisciplinary Journal, 29(2), 163–181. https://doi.org/10.1080/10705511.2021.1877548
- Schafer, J. L. (1997). Analysis of incomplete multivariate data. Chapman; Hall/CRC. https://doi.org/10.1201/9780367803025
- Schafer, J. L., & Graham, J. W. (2002). Missing data: Our view of the state of the art. *Psychological Methods*, 7(2), 147–177. https://doi.org/10.1037/1082-989x.7.2.147
- Schenker, N. (1987). Better bootstrap confidence intervals: Comment. Journal of the American Statistical Association, 82(397), 192. https://doi.org/10.2307/2289150
- Schouten, R. M., Lugtig, P., & Vink, G. (2018). Generating missing values for simulation purposes:

  A multivariate amputation procedure. *Journal of Statistical Computation and Simulation*,

  88(15), 2909–2930. https://doi.org/10.1080/00949655.2018.1491577
- Selig, J. P., & Preacher, K. J. (2009). Mediation models for longitudinal data in developmental research. Research in Human Development, 6(2-3), 144–164. https://doi.org/10.1080/ 15427600902911247

- Serlin, R. C. (2000). Testing for robustness in Monte Carlo studies. *Psychological Methods*, 5(2), 230–240. https://doi.org/10.1037/1082-989x.5.2.230
- Serlin, R. C., & Lapsley, D. K. (1985). Rationality in psychological research: The good-enough principle. *American Psychologist*, 40(1), 73–83. https://doi.org/10.1037/0003-066x.40.1.73
- Shao, J. (2003). Impact of the bootstrap on sample surveys. Statistical Science, 18(2). https://doi.org/10.1214/ss/1063994974
- Shiffman, S. (2009). Ecological momentary assessment (EMA) in studies of substance use. *Psychological Assessment*, 21(4), 486–497. https://doi.org/10.1037/a0017074
- Shiffman, S., Stone, A. A., & Hufford, M. R. (2008). Ecological momentary assessment. *Annual Review of Clinical Psychology*, 4(1), 1–32. https://doi.org/10.1146/annurev.clinpsy.3. 022806.091415
- Shrout, P. E. (2011). Commentary: Mediation analysis, causal process, and cross-sectional data.

  \*Multivariate Behavioral Research, 46(5), 852–860. https://doi.org/10.1080/00273171.2011.

  606718
- Shrout, P. E., & Bolger, N. (2002). Mediation in experimental and nonexperimental studies: New procedures and recommendations. *Psychological Methods*, 7(4), 422–445. https://doi.org/10.1037/1082-989x.7.4.422
- Shumway, R. H., & Stoffer, D. S. (2017). Time series analysis and its applications: With R examples.

  Springer International Publishing. https://doi.org/10.1007/978-3-319-52452-8
- Smith, K. E., & Juarascio, A. (2019). From ecological momentary assessment (EMA) to ecological momentary intervention (EMI): Past and future directions for ambulatory assessment and interventions in eating disorders. Current Psychiatry Reports, 21(7). https://doi.org/10. 1007/s11920-019-1046-8
- Sobel, M. E. (1982). Asymptotic confidence intervals for indirect effects in structural equation models. Sociological Methodology, 13, 290. https://doi.org/10.2307/270723
- Sobel, M. E. (1986). Some new results on indirect effects and their standard errors in covariance structure models. *Sociological Methodology*, 16, 159. https://doi.org/10.2307/270922

- Sobel, M. E. (1987). Direct and indirect effects in linear structural equation models. Sociological Methods & Research, 16(1), 155–176. https://doi.org/10.1177/0049124187016001006
- Soltis, P. S., & Soltis, D. E. (2003). Applying the bootstrap in phylogeny reconstruction. *Statistical Science*, 18(2). https://doi.org/10.1214/ss/1063994980
- Stoffer, D. S., & Wall, K. D. (1991). Bootstrapping state-space models: Gaussian maximum likelihood estimation and the Kalman filter. Journal of the American Statistical Association, 86(416), 1024–1033. https://doi.org/10.1080/01621459.1991.10475148
- Taylor, A. B., & MacKinnon, D. P. (2012). Four applications of permutation methods to testing a single-mediator model. *Behavior Research Methods*, 44(3), 806–844. https://doi.org/10.3758/s13428-011-0181-x
- Taylor, A. B., MacKinnon, D. P., & Tein, J.-Y. (2007). Tests of the three-path mediated effect. Organizational Research Methods, 11(2), 241–269. https://doi.org/10.1177/1094428107300344
- Tofighi, D., & Kelley, K. (2019). Indirect effects in sequential mediation models: Evaluating methods for hypothesis testing and confidence interval formation. *Multivariate Behavioral Research*, 55(2), 188–210. https://doi.org/10.1080/00273171.2019.1618545
- Tofighi, D., & Kelley, K. (2020). Improved inference in mediation analysis: Introducing the model-based constrained optimization procedure. *Psychological Methods*, 25, 496–515. https://doi.org/10.1037/met0000259
- Tofighi, D., & MacKinnon, D. P. (2015). Monte Carlo confidence intervals for complex functions of indirect effects. Structural Equation Modeling: A Multidisciplinary Journal, 23(2), 194–205. https://doi.org/10.1080/10705511.2015.1057284
- Uhlenbeck, G. E., & Ornstein, L. S. (1930). On the theory of the brownian motion. *Physical Review*, 36(5), 823–841. https://doi.org/10.1103/physrev.36.823
- van Buuren, S. (2018). Flexible imputation of missing data (2nd ed.). Chapman; Hall/CRC. https://doi.org/10.1201/9780429492259
- van Buuren, S., Brand, J. P. L., Groothuis-Oudshoorn, C. G. M., & Rubin, D. B. (2006). Fully conditional specification in multivariate imputation. *Journal of Statistical Computation and Simulation*, 76(12), 1049–1064. https://doi.org/10.1080/10629360600810434

- van Buuren, S., & Groothuis-Oudshoorn, K. (2011). mice: Multivariate imputation by chained equations in R. *Journal of Statistical Software*, 45(3). https://doi.org/10.18637/jss.v045.i03
- van Montfort, K., Oud, J. H. L., & Voelkle, M. C. (Eds.). (2018). Continuous time modeling in the behavioral and related sciences. Springer International Publishing. https://doi.org/10. 1007/978-3-319-77219-6
- Venables, W. N., & Ripley, B. D. (2002). Modern applied statistics with S. Springer New York. https://doi.org/10.1007/978-0-387-21706-2
- Venzon, D. J., & Moolgavkar, S. H. (1988). A method for computing profile-likelihood-based confidence intervals. Applied Statistics, 37(1), 87. https://doi.org/10.2307/2347496
- Voelkle, M. C., & Oud, J. H. L. (2012). Continuous time modelling with individually varying time intervals for oscillating and non-oscillating processes. British Journal of Mathematical and Statistical Psychology, 66(1), 103–126. https://doi.org/10.1111/j.2044-8317.2012.02043.x
- Voelkle, M. C., Oud, J. H. L., Davidov, E., & Schmidt, P. (2012). An SEM approach to continuous time modeling of panel data: Relating authoritarianism and anomia. *Psychological Methods*, 17(2), 176–192. https://doi.org/10.1037/a0027543
- Waller, N. G. (2022). fungible: Psychometric functions from the Waller Lab. The R Foundation. https://CRAN.R-project.org/package=fungible
- Wang, L., & Zhang, Q. (2020). Investigating the impact of the time interval selection on autoregressive mediation modeling: Result interpretations, effect reporting, and temporal designs. Psychological Methods, 25(3), 271–291. https://doi.org/10.1037/met0000235
- White, H. (1980). A heteroskedasticity-consistent covariance matrix estimator and a direct test for heteroskedasticity. *Econometrica*, 48(4), 817–838. https://doi.org/10.2307/1912934
- Wright, S. (1918). On the nature of size factors. Genetics, 3(4), 367–374. https://doi.org/10.1093/genetics/3.4.367
- Wright, S. (1934). The method of path coefficients. The Annals of Mathematical Statistics, 5(3), 161–215. https://doi.org/10.1214/aoms/1177732676

- Wu, W., & Jia, F. (2013). A new procedure to test mediation with missing data through nonparametric bootstrapping and multiple imputation. *Multivariate Behavioral Research*, 48(5), 663–691. https://doi.org/10.1080/00273171.2013.816235
- Yuan, K.-H., & Bentler, P. M. (2000). Three likelihood-based methods for mean and covariance structure analysis with nonnormal missing data. Sociological Methodology, 30(1), 165–200. https://doi.org/10.1111/0081-1750.00078
- Yuan, K.-H., & Chan, W. (2011). Biases and standard errors of standardized regression coefficients.

  Psychometrika, 76(4), 670–690. https://doi.org/10.1007/s11336-011-9224-6
- Yzerbyt, V., Muller, D., Batailler, C., & Judd, C. M. (2018). New recommendations for testing indirect effects in mediational models: The need to report and test component paths. *Journal of Personality and Social Psychology*, 115(6), 929–943. https://doi.org/10.1037/pspa0000132
- Zeileis, A. (2004). Econometric computing with HC and HAC covariance matrix estimators. *Journal* of Statistical Software, 11(10). https://doi.org/10.18637/jss.v011.i10
- Zeileis, A. (2006). Object-oriented computation of sandwich estimators. *Journal of Statistical Software*, 16(9). https://doi.org/10.18637/jss.v016.i09
- Zeileis, A., Köll, S., & Graham, N. (2020). Various versatile variances: An object-oriented implementation of clustered covariances in R. Journal of Statistical Software, 95(1). https://doi.org/10.18637/jss.v095.i01
- Zhang, Z., & Wang, L. (2012). Methods for mediation analysis with missing data. *Psychometrika*, 78(1), 154–184. https://doi.org/10.1007/s11336-012-9301-5
- Zhang, Z., Wang, L., & Tong, X. (2015). Mediation analysis with missing data through multiple imputation and bootstrap. In *Quantitative psychology research* (pp. 341–355). Springer International Publishing. https://doi.org/10.1007/978-3-319-19977-1\_24