**QUANTITATIVE RESEARCH METHODS: SELECTED REFERENCES**

**(Last updated 12 September 2022)**

American Educational Research Association. (2006). Standards for reporting on empirical social science research in AERA publications. *Educational Researcher, 35*, 33–40.

Arnon, I. (2020). Do current statistical learning tasks capture stable individual differences in children? An investigation of task reliability across modality. *Behavior Research Methods*, *52*(1), 68-81.

Aron, A., Coups, E., & Aron, E. N. (2013). *Statistics for the behavioral and social sciences: A brief course*. Pearson Higher Education.

Bachman, L. F. (2004). *Statistical analyses for language assessment*. Cambridge University Press.

Barnes, B., & Lock, G. (2013). Student perceptions of effective foreign language teachers: A quantitative investigation from a Korean university. *Australian Journal of Teacher Education*, *38*(2), 18-36.

Bohrn, I. C., Altmann, U., & Jacobs, A. M. (2012). Looking at the brains behind figurative language—A quantitative meta-analysis of neuroimaging studies on metaphor, idiom, and irony processing. *Neuropsychologia*, *50*(11), 2669-2683.

Bond, T. G., & Fox, C. M. (2007). *Applying the Rasch model: Fundamental measurement in the human sciences* (2nd ed.). Lawrence Erlbaum.

Borg, W. R., & Gall, M. D. (1989). *Educational research: An introduction*. Longman.

Brantmeier, C. (2004). Statistical procedures for research on L2 reading comprehension: An examination of ANOVA and regression models. *Reading in a Foreign Language*, *16*(2), 51.

Brown, J. D. (1988). *Understanding research in second language learning: A teacher's guide to statistics and research design*. Cambridge University Press.

Brown, J. D. (1991). Statistics as a foreign language: What to look for in reading statistical language studies. *TESOL Quarterly*, *25*(4), 569–586.

Brown, J. D. (1992). Statistics as a foreign language: More things to consider in reading statistical language studies. *TESOL Quarterly*, *26*(4), 629–664.

Brown, J. D. (2001). Can we use the Spearman-Brown prophecy formula to defend low reliability? *JALT Testing & Evaluation SIG Newsletter, 4*(3), 7–11. <http://jalt.org/test/bro_9.htm>

Brown, J. D. (2001). Point bi-serial correlation coefficients. *JALT Testing & Evaluation SIG Newsletter, 5*(3), 12–16. <http://jalt.org/test/bro_12.htm>

Brown, J. D. (2011). Quantitative research in second language studies. In E. Hinkel (Ed.), *Handbook of research in second language teaching and learning* (pp. 190-206). Routledge.

Brown, J. D., & Crookes, G. (1990). Research issues: The use of multiple t-tests in language research. *TESOL Quarterly*, *24*(4), 770-773.

Browne, M. W., & Cudeck, R. (1993). Alternative ways of assessing model fit. In K. A. Bollen & J. S. Long (Eds.), *Testing structural equation models* (pp. 136-162). Sage.

Bulut, O., Quo, Q., & Gierl, M. J. (2017). A structural equation modeling approach for examining position effects in large-scale assessments. *Large-Scale Assessments in Education, 5*(1), 1–20. [https://doi.org/10.1186/s40536-017-0042-x](https://nam02.safelinks.protection.outlook.com/?url=https%3A%2F%2Fdoi.org%2F10.1186%2Fs40536-017-0042-x&data=02%7C01%7Ckb%40MIIS.EDU%7Cf7918393be6243a981d408d85600d4e9%7Ca1bb0a191576421dbe93b3a7d4b6dcaa%7C1%7C0%7C637353908894422496&sdata=wBYrxKln2mkN5NB2JTbgJ7pqGiOMHIUTCVd87tBRHbk%3D&reserved=0)

Butler, C. (1985). *Statistics in linguistics*. Blackwell.

Cirocki, A. (2013). Descriptive statistics for EFL classroom research: Plain and simple. Modern English Teacher, *22*(3), 73-77.

Cohen, J. (1988). *Statistical power analysis for the behavioral sciences* (2nd ed.). Lawrence Erlbaum.

Cole, D. A. (1987). Utility of confirmatory factor analysis in test validation research. *Journal of Consulting and Clinical Psychology*, *55*(4), 584.

Conover, W. J. (1980). *Practical nonparametric statistics* (2nd ed.). Wiley.

Corder, G. W., & Foreman, D. I. (2009). *Non-parametric statistics for non-statisticians.* John Wiley & Sons, Inc.

Creswell, J. (2002). *Educational research: Planning, conducting, and evaluating quantitative* *and qualitative research.* Upper Saddle River, New Jersey: Prentice-Hall International.

Cresswell, J. (2003). *Research Design: Qualitative, quantitative, and mixed methods approaches* (2nd ed.). Sage.

Creswell, J. W. (2014). *Research design: Qualitative, quantitative, and mixed methods approaches* (4th ed.). Sage.

Cronbach, L. J. (1951). Coefficient alpha and the internal structures of tests. *Psychometrika*, *16,* 292–334.

Cronbach’s alpha. (n.d.). <https://explorable.com/cronbachs-alpha>

Cumming, G. (2014). The new statistics: Why and how. *Psychological Science, 25*, 7–29.

Cunnings, I. (2012). An overview of mixed-effects statistical models for second language researchers. *Second Language Research*, *28*(3), 369-382.

Davidson, F. (1996). *Principles of statistical data handling*. Sage.

Dietz, T., & Kalof, L. (2009). *Introduction to social statistics: The logic of statistical reasoning*. Wiley-Blackwell Publishers.

Dörnyei, Z. (2007). *Research methods in applied linguistics: Quantitative, qualitative, and mixed methodologies*. Oxford University Press.

Eckes, T. (2011). *Introduction to many-facet Rasch measurement: Analyzing and evaluating rater-mediated assessments*. Peter Lang.

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*(3), 272.

Field, A. (2013). *Discovering statistics using SPSS* (4th ed.). Sage.

Fleiss, J. L., Levin, B., & Paik, M. C. (2003). *Statistical methods for rates and proportions* (3rd ed.). John Wiley & Sons.

Gönülal, T., Loewen, S., & Plonsky, L. (2017). The development of statistical literacy in applied linguistics graduate students. *International Journal of Applied Linguistics, 168*(1), 4–32.

Hamp-Lyons, L. (1989). Recent publications on statistics, language testing and quantitative research methods: I. *TESOL Quarterly*, *23*(1), 127-132.

Hamp-Lyons, L. (1990). Recent publications on statistics, language testing and quantitative research methods: II. *TESOL Quarterly*, *24*(2), 293-300.

Hancock, G. R., & Mueller, R. O. (Eds.). (2010). *The reviewer's guide to quantitative methods in the social sciences*. Routledge.

Harzing, A. W., Baldueza, J., Barner-Rasmussen, W., Barzantny, C., Canabal, A., Davila, A., ... & Liang, Y. K. (2009). Rating versus ranking: What is the best way to reduce response and language bias in cross-national research?. *International Business Review*, *18*(4), 417-432.

Hatch, E., & Farhady, H. (1982). *Research design and statistics for applied linguistics*. Newbury House.

Hatch, E., & Lazaraton, A. (1991). *The research manual: Design and statistics for applied linguistics.* Newbury House Publishers.

He, Q. (2018). Quantitative research in systemic functional linguistics. *English Language Teaching*, *11*(1), 110-119.

Henning, G. (1986). Quantitative methods in language acquisition research. *TESOL Quarterly*, *20*(4), 701-708.

Henson, R. K., & Roberts, J. K. (2006). Use of exploratory factor analysis in published research common errors and some comment on improved practice. *Educational and Psychological Measurement*, *66*(3), 393-416.

Hojat, M., & Xu, G. (2004). A visitor's guide to effect sizes–statistical significance versus practical (clinical) importance of research findings. *Advances in Health Sciences Education*, *9*(3), 241-249.

Horowitz, G. (1981). *Sadistic statistics*. Avery Publishing Group.

How2stats. (2011, September 25). *Kendall’s tau - Explained Simply + Examples* (part 1). [Video file]. <https://www.youtube.com/watch?v=oXVxaSoY94k>

Howell, D. C. (1989). *Fundamental statistics for the behavioral sciences* (2nd ed.). Kent.

Hsiao, T. Y., & Oxford, R. L. (2002). Comparing theories of language learning strategies: A confirmatory factor analysis. *Modern Language Journal*, *86*(3), 368-383.

Hu, L.-T., & Bentler, P. M. (1999). Cutoff criteria for fit indexes in covariance structure analysis: Conventional criteria versus new alternatives. *Structural Equation Modeling, 6*, 1-55.

Huang, Y., & Hashim, A. (2020). Quantitative study of Chinese learners’ identities as reflected in their attitudes toward English accents. *GEMA Online® Journal of Language Studies*, *20*(1), 151-168.

Huberty, C. J., & Olejnik, S. (2006). *Applied MANOVA and discriminant analysis* (2nd ed.). John Wiley and Sons.

Israel, M., & Hay, I. (2006). *Research ethics for social statistics: Between ethical conduct and regulatory compliance.* Sage.

Jaeger, R. M. (1990). *Statistics: A spectator sport* (2nd ed.). Sage.

Journal Article Reporting Standards Working Group. (2008). Reporting standards for research in psychology: Why do we need them? What might they be? *American Psychologist, 63*, 839–851.

Kabacoff, R. (2015). *R in action: data analysis and graphics with R*. Manning Publications Co.

Karbakhsh, R., & Ahmadi Safa, M. (2020). Basic psychological needs satisfaction, goal orientation, willingness to communicate, self-efficacy, and learning strategy use as predictors of second language achievement: A structural equation modeling approach. *Journal of Psycholinguistic Research*, *49*(5), 803-822.

Kenny, D. A. (1987). *Statistics for the social and behavioral sciences*. Little, Brown and Company.

Kline, R. B. (2011). *Principles and practice of structural equation modeling* (3rd ed.). Guilford Press.

Kline, R. B. (2012). Assumptions in structural equation modeling. In R. Hoyle (Ed.), *Handbook of structural equation modeling* (pp. 111-125). Guilford Press.

Kline, R. B. (2015). *Principles and practice of structural equation modelling* (4th ed.). Guilford Press.

Koizumi, R., Kaneko, E., Setoguchi, E., Innami, Y., & Naganuma, N. (2019). Examination of CEFR-J spoken interaction tasks using many-facet Rasch measurement and generalizability theory. *Papers in Language Testing and Assessment*, *8*(2), 1-33.

Kothari, C. R. (2003). *Research methodology: Methods and techniques*. Wisha Prakashan.

Kunnan, A. J. (1998). An introduction to structural equation modelling for language assessment research. *Language Testing*, *15*(3), 295-332.

LaFlair, G. T., Egbert, J., & Plonsky, L. (2015). A practical guide to bootstrapping descriptive statistics, correlations, t tests, and ANOVAs. In L. Plonsky (Ed.), *Advancing quantitative methods in second language research* (pp. 46–77). Routledge.

Larson-Hall, J. (2015). *A guide to doing statistics in second language research using SPSS and R*. Routledge.

Larson-Hall, J., & Plonsky, L. (2015). Reporting and interpreting quantitative research findings: What gets reported and recommendations for the field. *Language Learning, 65, Supp. 1*, 127–159.

Lazaraton, A. (2000). Current trends in research methodology and statistics in applied linguistics. *TESOL Quarterly*, *34*(1), 175-181.

Linacre, J. M. (2014). Facets computer program for many-facet Rasch measurement, version 3.71.4. Winsteps.

Mackey, A., & Gass, S. M. (2015). *Second language research: Methodology and design*. Routledge.

Masters, G. (1982). A Rasch model for partial credit scoring. *Psychometrika, 47*, 149–174.

Max, L., & Onghena, P. (1999). Some issues in the statistical analysis of completely randomized and repeated measures designs for speech, language, and hearing research. *Journal of Speech, Language, and Hearing Research*, *42*(2), 261-270.

Ministry of Education. (2015). *Estadísticas de la educación 2015* [Statistics in education 2015]. Research Centre, Ministry of Education of Chile. <https://centroestudios.mineduc.cl/wp-content/uploads/sites/100/2017/08/Anuario_2015.pdf>

Mizumoto, A., & Plonsky, L. (2016). R as a lingua franca: Advantages of using R for quantitative research in applied linguistics. *Applied Linguistics, 37*(2), 284–291.

Myford, C. M. & Wolfe, E. W. (2003). Detecting and measuring rater effects using many-facet Rasch measurement: Part I. *Journal of Applied Measurement, 4*, 386–422.

Neter, J., Wasserman, W., & Kutner, M. H. (1985). *Applied linear statistical models: Regression, analysis of variance, and experimental designs*. Richard D. Irwin.

Norman, G. (2010). Likert scales, levels of measurement and the “laws” of statistics. *Advances in Health Sciences Education, 15*(5), 625-632.

Norouzian, R., & Plonsky, L. (2018). Correlation and simple linear regression in applied linguistics. In A. Phakiti, P. I. De Costa, L. Plonsky & S. Starfield (Eds.), *The Palgrave handbook of applied linguistics research methodology* (pp. 395–421). Palgrave.

Norouzian, R., de Miranda, M. A., & Plonsky, L. (2019). A Bayesian approach to measuring evidence in L2 research: An empirical investigation. *Modern Language Journal, 103*(1), 248–261.

Norouzian, R., & Plonsky, L. (2018). Eta- and partial eta-squared in L2 research: A cautionary review and guide to more appropriate usage. *Second Language Research, 34*(2), 257–271.

Norris, J. M., & Ortega, L. (2000). Effectiveness of L2 instruction: A research synthesis and quantitative meta‐analysis. *Language Learning*, *50*(3), 417-528.

Norris, J. M., Plonsky, L., Ross, S. J., & Schoonen, R. (2015). Guidelines for reporting quantitative methods and results in primary research. *Language Learning*, *65*(2), 470-476.

Norusis, M. J. (2006). *SPSS 15.0 guide to data analysis*. Prentice Hall.

Osborne, J. W., & Costello, A. B. (2009). Best practices in exploratory factor analysis: Four recommendations for getting the most from your analysis. *Pan-Pacific Management Review*, *12*(2), 131-146.

Papageorgiou, S. (2009). *Statistical analysis for the Certificate of Attainment in Greek 2009 administration.* (Final project report). Thessaloniki, Greece: Center for the Greek Language. Available from <http://www.greek-language.gr/greekLang/files/document/certification/statanalysis2009.pdf>.

Paquot, M., & Plonsky, L. (2017). Quantitative research methods and study quality in learner corpus research. *International Journal of Learner Corpus Research, 3*(1), 61–94. doi 10.1075/ijlcr.3.1.03paq

Phakiti, A. (2008). Strategic competence as a four-order factor model: A structural equation modeling approach. *Language Assessment Quarterly, 5*(1), 20–42.

Phakiti, A. (2015). Quantitative research and analysis. In Paltridge, B., & Phakiti, A. (Eds.), *Research methods in applied linguistic: A practical approach* (pp. 27-47). Bloomsbury Academic.

Pishghadam, R. (2009). A quantitative analysis of the relationship between emotional intelligence and foreign language learning. *Electronic Journal of Foreign Language Teaching*, *6*(1), 31-41.

Plonsky, L. (2012). Effect size. In P. Robinson (Ed.), *The Routledge encyclopedia of second language acquisition* (pp. 200–202). Routledge.

Plonsky, L. (2013). Study quality in SLA: An assessment of designs, analyses, and reporting practices in quantitative L2 research. *Studies in Second Language Acquisition, 35*(4), 655–687. doi:10.1017/S0272263113000399

Plonsky, L. (2014). Study quality in quantitative L2 research (1990-2010): A methodological synthesis and call for reform. *Modern Language Journal, 98*(1), 450-470. DOI: 10.1111/j.1540-4781.2014.12058.x

Plonsky, L. (2015). Statistical power, p values, descriptive statistics, and effect sizes: A “back-to-basics” approach to advancing quantitative methods in L2 research. In L. Plonsky (Ed.), *Advancing quantitative methods in second language research* (pp. 23–45). Routledge.

Plonsky, L. (2015). Introduction. In L. Plonsky (Ed.), *Advancing quantitative methods in second language research* (pp. 3–8). Routledge.

Plonsky, L. (Ed.). (2015). *Advancing quantitative methods in second language research.*  Routledge.

Plonsky, L. (2015). Quantitative considerations for improving replicability in CALL and applied linguistics. *CALICO Journal, 32*(2), 232–244.

Plonsky, L. (2016). *Advanced quantitative methods in second language research*. Routledge.

Plonsky, L. (2017). Quantitative research methods in instructed SLA. In S. Loewen & M. Sato (Eds.), *The Routledge handbook of instructed second language acquisition* (pp. 505–521). Routledge.

Plonsky, L., & Derrick, D. J. (2016). A meta-analysis of reliability coefficients in second language research. *Modern Language Journal, 100*(2), 538–553.

Plonsky, L., & Gass, S. (2011). Quantitative research methods, study quality, and outcomes: The case of interaction research. *Language Learning, 61*(2), 325–366.

Plonsky, L., & Ghanbar, H. (2018). Multiple regression in L2 research: A methodological synthesis and guide to interpreting R2 values. *Modern Language Journal, 102*(4), 713–731.

Plonsky, L., & Gönülal, T. (2015). Methodological synthesis in quantitative L2 research: A review of reviews and a case study of exploratory factor analysis. *Language Learning, 65, Supp. 1*, 9–36.

Plonsky, L., & Oswald, F. L. (2014). How big is ‘big’? Interpreting effect sizes in L2 research. *Language Learning, 64*(5), 878–912.

Plonsky, L., & Oswald, F. L. (2017). Multiple regression as a flexible alternative to ANOVA in L2 research. *Studies in Second Language Acquisition, 39*(3), 579–592.

Purpura, J. E. (2011). Quantitative research methods in assessment and testing. In E. Hinkel (Ed.), *Handbook of research in second language teaching and learning* (Vol. 2, pp. 731-751). Routledge.

Rahman, M. S. (2020). The advantages and disadvantages of using qualitative and quantitative approaches and methods in language “testing and assessment” research: A literature review. *Journal of Education and Learning, 6*(1), 102-112. <https://pearl.plymouth.ac.uk/bitstream/handle/10026.1/16598/EJ1120221.pdf?sequence=1>

Reid, J. M. (1990). Responding to different topic types: A quantitative analysis from a contrastive rhetoric perspective. In B. Kroll (Ed.), *Second language writing: Research insights for the classroom* (pp. 191-211). Cambridge University Press.

Rietveld, T., & Van Hout, R. (1993). *Statistical techniques for the study of language and language behaviour*. Berlin, Germany: Walter de Gruyter.

Rietveld, T., & Van Hout, R. (2005). *Statistics in language research: Analysis of variance*. Walter de Gruyter.

Rivas, L. I., & Germani, M. P. (2016). Analyzing correlations between generic patterns and prosodic realizations in interviews in English. *International Journal of Language Studies, 10*(2), 103-126

Rosnow, R. L., & Rosenthal, R. (1996). Computing contrasts, effect sizes, and counternulls on other people's published data: General procedures for research consumers. *Psychological Methods*, *1*(4), 331.

Shavelson, R. J. (1981). *Statistical reasoning for the behavioral sciences*. Allyn and Bacon.

Siegel, S. (1956). *Nonparametric statistics for the behavioral sciences*. McGraw-Hill.

Tabachnick, B. G., & Fidell, L. S. (2007). *Using multivariate statistics* (5th ed.). Allyn & Bacon.

Tabachnick, B. G., & Fidell, L. S. (2013). *Using multivariate statistics* (6th ed.). Pearson.

Teng, L. S., Sun, P. P., & Xu, L. (2018). Conceptualizing writing self-efficacy in English as a foreign language contexts: Scale validation through structural equation modeling. *TESOL Quarterly, 52*(4), 911-942.

Tigchelaar, M., Bowles, R. P., Winke, P., & Gass, S. (2017). Assessing the validity of ACTFL can-do statements for spoken proficiency: A Rasch analysis. *Foreign Language Annals, 50*(3), 584-600.

Trusty, J., Thompson, B., & Petrocelli, J. V. (2004). Practical guide for reporting effect size in quantitative research in the Journal of Counseling & Development. *Journal of Counseling and Development: JCD*, *82*(1), 107.

Turner, J. (2014). *Using statistics in small-scale language education research: Focus on non-parametric data.* Routledge Taylor Francis.

Van der Lans, R. M., Van de Grift, W. J., & van Veen, K. (2018). Developing an instrument for teacher feedback: Using the Rasch Model to explore teachers' development of effective teaching strategies and behaviors. *The Journal of Experimental Education*, *86*(2), 247-264.

Van Gelderen, A., Schoonen, R., De Glopper, K., Hulstijn, J., Snellings, P., Simis, A., & Stevenson, M. (2003). Roles of linguistic knowledge, metacognitive knowledge and processing speed in L3, L2 and L1 reading comprehension: A structural equation modeling approach. *The International Journal of Bilingualism, 7,* 7–25.

Viera, A. J., & Garett, J. M. (2005). Understanding interobserver agreement: The kappa statistic. *Family Medicine, 37,* 360-363.

Wessa, P. (2012). Kendall tau Rank Correlation (Version 1.0.11) [Software v1.1.23-r7]. Available from <http://www.wessa.net/rwasp_kendall.wasp/>

Wilkinson, L., & Task Force on Statistical Inference. (1999). Statistical methods in psychology journals: Guidelines and explanations. *American Psychologist, 54*, 594-604.

Williams, F. (2001). *Reasoning with statistics: How to read quantitative research* (3rd ed.). Holt, Rinehart and Winston.

Wilson, T. C. (1980). *Researcher's guide to statistics: Glossary and decision map*. University Press of America.

Witte, R. S. (1989). *Statistics* (3rd ed.). Holt, Rinehart and Winston.

Wolf, F. M. (1986). *Meta-analysis: Quantitative methods for research synthesis* (Vol. 59). Sage.

Woods, A., Fletcher, P., & Hughes, A. (1986). *Statistics in language studies*. Cambridge University Press.

Wright, B. D., & Linacre, J. M. (1994). Reasonable mean-square fit values. *Rasch Measurement Transactions, 8*, 370.