

KE-HAI YUAN
CURRICULUM VITAE
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ADDRESS

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EDUCATION

1992-1995 Ph.D. in Mathematics with Concentration in Statistics, UCLA
1985-1988 M.S. in Applied Mathematics with Concentration in Statistics
Beijing Institute of Technology
1981-1985 B.S. in Applied Mathematics, Beijing Institute of Technology

POSITIONS

2008- Professor, Department of Psychology
University of Notre Dame
2018- Visiting Professor, School of Science
Nanjing University of Posts and Telecommunications
2016(09-10) Visiting Professor, Graduate School of Engineering Science
Osaka University
2014(01-04) Visiting Professor, Department of Psychology
The Chinese University of Hong Kong
2005-2008 O'Neill III Associate Professor, Department of Psychology
University of Notre Dame
2001-2005 Associate Professor, Department of Psychology & Lab for Social Research
University of Notre Dame
1998-2001 Assistant Professor, Department of Psychology
University of North Texas
1995-1998 Statistician, Department of Psychology, UCLA
1992-1995 Graduate Student Researcher, Department of Psychology, UCLA
1988-1992 Assistant Professor, Department of Applied Mathematics
Beijing Institute of Technology

PROFESSIONAL SERVICES

- Member of Editorial Board, Educational and Psychological Measurement (2000-).
- Member of Editorial Board, Structural Equation Modeling (2006-).
- Consulting Editor, Multivariate Behavioral Research (2006-).
- Member of Editorial Board, Journal of Educational and Behavioral Statistics (2011-).
- Member of Editorial Board, Educational Researcher (2013-).
- Member of Editorial Board, JSM Mathematics and Statistics (2014-).
- Member of Advisory Board, Behaviormetrika (2016-).

- Consulting Editor, *Psychological Methods* (2016-).
- Member of Editorial Board, *Psicologia: Reflexão e Crítica* (2018-).
- Guest Editor, *Sage Open* (2017-2018).
- Associate Editor, *Journal of Multivariate Analysis* (2008-2016).
- Associate Editor, *Psychological Methods* (2013-2015).
- Member of Editorial Board, *Sociological Methodology* (2007-2009).
- Reviewed grant proposals for NSF, Institute of Education Sciences, Spencer Foundation, Research Council of Canada, The Research Grant Council of Hong Kong, books for Lawrence Erlbaum Associates, Taylor and Francis Group, Guilford Press, and manuscripts for over twenty journals.

PROFESSIONAL HONORS

- The James McKeen Cattell Sabbatical Award (2005).
- The Raymond B. Cattell Award for Early-Career Outstanding Multivariate Research (2002) from the Society of Multivariate Experimental Psychology.
- Elected member of the Society of Multivariate Experimental Psychology (2002-).

GRANTS AND SPONSORED PROGRAMS

- PI, National Science Foundation: Structural equation modeling with small N and large p (\$349,998), 2015–2018.
- Co-PI, Organization for Autism Research (Juhi Kaboski, PI): Comorbidities in ASD: Developmental trajectories and predictors of adult outcomes. (\$30,000), 2016.
- Co-PI, Institute of Education Sciences (Zhiyong Johnny Zhang, PI): A general framework for statistical power analysis with non-normal and missing data through Monte Carlo simulation (\$573,097), 2014–2017.

TOPICS WORKED ON

Mean comparison; regression; factor analysis; structural equation modeling; multilevel modeling; growth curve model; mixture model; item response model; measurement invariance; mediation and moderation analysis; post-hoc power; meta analysis/combining mean differences; asymptotics; statistical computation; estimating equations; bootstrap and cross-validation; nonnormal distribution; robust methods; missing data; big data (data with many variables but limited sample size); and software development.

COURSES TAUGHT

Experimental psychology I: Statistics; Psychometric theory; Multivariate statistics; Factor analysis; Structural equation modeling; Advanced structural equation modeling; Multilevel modeling; Computational statistics; Statistical methods; Exploratory data analysis; Missing data analysis.

DOCTORAL DISSERTATIONS DIRECTED

- Agung Santoso, University of Notre Dame (2018): *Equivalence testing for anchor selection in differential item functioning (DIF) detection.*

- Ge (Gabriella) Jiang, University of Notre Dame (2018): *Ridge methods for confirmatory factor analysis of ordinal variables.*
- Miao (Michelle) Yang, University of Notre Dame (2018): *Optimizing ridge generalized least squares for structural equation modeling.*
- Meghan Cain, University of Notre Dame (2017, co-directed with Zhiyong Zhang): *Fit for a Bayesian: An Evaluation of PPP and DIC.*
- Laura Lu, University of Notre Dame (2011, codirected with Zhiyong Zhang): *Bayesian inference of robust growth mixture models with non-ignorable missing data.*
- Wei Zhang, University of Notre Dame (2010): *Estimating latent variable interactions with missing data.*
- Xiaoling Zhong, University of Notre Dame (2010): *Model selection, evaluation and tests of invariance in finite factor mixture modeling using a two stage approach.*
- Summer Zu, University of Notre Dame (2009): *Robust procedures for mediation analysis.*
- Ken Kelley, University of Notre Dame (2005, codirected with Scott Maxwell): *Estimating nonlinear change models in heterogeneous populations when class membership is unknown: Defining and developing the latent classification differential change model.*
- Richard Herrington, University of North Texas (2001): *Simulating statistical power curves with the bootstrap and robust estimation.*

PAPERS IN PRESS

- Hayashi, K., Yuan, K.-H., & Jiang, G. (in press). On the precision matrix in semi-high dimensional settings. In M. Wiberg, S. Culpepper, R. Janssen, J. González, & D. Molenaar (Eds.), *Quantitative psychology: The 83rd Annual Meeting of the Psychometric Society* (pp. ??). New York: Springer.
- Liu, H., Yuan, K.-H., & Liu, F. (in press). A two-level moderated latent variable model with single level data. *Multivariate Behavioral Research*.
- Yuan, K.-H., Wen, Y., & Tang, J. (in press). Regression analysis with latent variables by partial least squares and four other composite scores: Consistency, bias and correction. *Structural Equation Modeling*

PUBLICATIONS

- Gomer, B., Jiang, G., & Yuan, K.-H. (2019). New effect size measures for structural equation modeling. *Structural Equation Modeling*, 26(3), 371–389. doi: 10.1080/10705511.2018.1545231
- Hayashi, K., Yuan, K.-H., & Jiang*, G. (2019). On extended Guttman condition in high dimensional factor analysis. In M. Wiberg, S. Culpepper, R. Janssen, J. González, & D. Molenaar (Eds.), *Quantitative psychology: The 83rd Annual Meeting of the Psychometric Society* (pp. 221–228). New York: Springer.
- Tian, Y., & Yuan, K.-H. (2019). Mean and variance corrected test statistics for structural equation modeling with many variables. *Structural Equation Modeling*, 26(6), 827–846.
- Yang, M., & Yuan, K.-H. (2019). Optimizing ridge generalized least squares for structural equation modeling. *Structural Equation Modeling*, 26(1), 24–38. doi: 10.1080/10705511.2018.1479853
- Yuan, K.-H., Fan, C., & Zhao, Y. (2019). What causes the mean bias of the likelihood ratio statistic with many variables? *Multivariate Behavioral Research*, 54(6), 840–855.

- Yuan, K.-H., Zhang Z., & Deng, L. (2019). Fit indices for mean structures with growth curve models. *Psychological Methods*, *24*(1), 36–53.
- Zhang, Q., Yuan, K.-H., & Wang, L. (2019). Asymptotic bias of normal-distribution-based maximum likelihood estimates of moderation effects with missing at random data. *British Journal of Mathematical and Statistical Psychology*, *72*, 334–354.
- Hayashi, K., Yuan, K.-H., & Liang, L. (2018). On the bias in eigenvalues of sample covariance matrix. In M. Wiberg, S. Culpepper, R. Janssen, J. González, & D. Molenaar (Eds.), *Quantitative psychology: The 82nd Annual Meeting of the Psychometric Society* (pp. 221–233). Switzerland: Springer.
- Yang, M., Jiang, G., & Yuan, K.-H. (2018). The performance of ten modified rescaled statistics as the number of variables increases. *Structural Equation Modeling*, *25*(3), 414–438.
- Yuan, K.-H., Jamshidian, M., & Kano, Y. (2018). Missing data mechanisms and homogeneity of means and variances-covariances. *Psychometrika*, *83*(2), 425–442.
- Yuan, K.-H., & Kano, Y. (2018). Meta analytical SEM: Equivalence between maximum likelihood and generalized least squares. *Journal of Educational and Behavioral Statistics*, *43*(6), 693–720.
- Yuan, K.-H., Jiang, G., & Yang, M. (2018). Mean and mean-and-variance corrections with big data. *Structural Equation Modeling*, *25*(2), 214–229.
- Zhang, Z., & Yuan, K.-H. (2017 ed.). *Practical statistical power analysis using webpower and R*. Granger, IN: ISDSA Press.
- Cain, M., Zhang Z., & Yuan, K.-H. (2017). Univariate and multivariate skewness and kurtosis for measuring nonnormality: Prevalence, influence and estimation. *Behavior Research Methods*, *49*, 1716–1735.
- Du, H., Zhang, Z., & Yuan, K.-H. (2017). Power analysis for *t*-test with non-normal data and unequal variances. In A. van der Ark, D.M., M.Wiberg, S.A.Culpepper, J. A.Douglas, & W.-C.Wang (Eds.), *Quantitative psychology: The 81th Annual Meeting of the Psychometric Society* (pp. 373–380). Switzerland: Springer.
- Hayashi, K., Yuan, K.-H., & Liang, L. (2017). On the relationship between squared canonical correlation and matrix norm. In A. van der Ark, D.M., M.Wiberg, S.A.Culpepper, J. A.Douglas, & W.-C.Wang (Eds.), *Quantitative psychology: The 81th Annual Meeting of the Psychometric Society* (pp. 141–150). Switzerland: Springer.
- Jiang, G., Mai, Y., & Yuan, K.-H. (2017). Advances in measurement invariance and mean comparison of latent variables: Equivalence testing and a projection-based approach. *Frontiers in Psychology* 8:1823. doi: 10.3389/fpsyg.2017.01823
- Jiang, G., & Yuan, K.-H. (2017). Four new corrected statistics for SEM with small samples and nonnormally distributed data. *Structural Equation Modeling*, *24*, 479–494. doi: 10.1080/10705511.2016.1277726
- Marcoulides, K. M., & Yuan, K.-H. (2017). New ways to evaluate goodness of fit: A note on using equivalence testing to assess structural equation models. *Structural Equation Modeling*, *24*, 148–153.
- Yuan, K.-H., & Bentler, P. M. (2017). Improving the convergence rate and speed of Fisher-scoring algorithm: Ridge and anti-ridge methods in structural equation modeling. *Annals of the Institute of Statistical Mathematics*, *69*, 571–597.
- Yuan, K.-H., Jiang, G., & Cheng, Y. (2017). More efficient parameter estimates for factor analysis of ordinal variables by ridge generalized least squares. *British Journal of Mathematical and Statistical Psychology*, *70*, 525–564. doi: 10.1111/bmsp.12098
- Yuan, K.-H., Yang, M., & Jiang, G. (2017). Empirically corrected rescaled statistics for SEM with small *N* and large *p*. *Multivariate Behavioral Research*, *52*(6), 673–698. doi: 10.1080/00273171.2017.1354759

- Yuan, K.-H., Zhang, Z., & Zhao, Y. (2017). Reliable and more powerful methods for power analysis in structural equation modeling. *Structural Equation Modeling, 24*, 315–330.
- Deng, L., & Yuan, K.-H. (2016). Comparing latent means without mean structure models: A projection-based approach. *Psychometrika, 81*, 802–829.
- Liang, L., Hayashi, K., & Yuan, K.-H. (2016). The goodness of sample loadings of principal component analysis in approximating to factor loadings with high dimensional data. In A. van der Ark, D.M. Bolt, W.-C. Wang, J.A. Douglas, & M. Wiberg (Eds.), *Quantitative psychology research: The 80th Annual Meeting of the Psychometric Society* (pp. 199–211). Switzerland: Springer.
- Yang, M., & Yuan, K.-H. (2016). Robust methods for moderation analysis with a two-level regression model. *Multivariate Behavioral Research, 51*, 757–771.
- Yuan, K.-H. (2016). Meta analytical structural equation modeling: Comments on issues with current methods and viable alternatives. *Research Synthesis Methods, 7*, 215–231.
- Yuan, K.-H., & Chan, W. (2016a). Measurement invariance via multi-group SEM: Issues and solutions with chi-square-difference tests. *Psychological Methods, 21*(3), 405–426.
- Yuan, K.-H., & Chan, W. (2016b). Structural equation modeling with unknown population distributions: Ridge generalized least squares. *Structural Equation Modeling, 23*(2), 163–179.
- Yuan, K.-H., Chan, W., Marcoulides, G. A., & Bentler, P. M. (2016). Assessing structural equation models by equivalence testing with adjusted fit indices. *Structural Equation Modeling, 23*, 319–330.
- Yuan, K.-H., Chan, W., & Tian, Y. (2016). Expectation-robust algorithm and estimating equations for means and dispersion matrix with missing data. *Annals of the Institute of Statistical Mathematics, 68*, 329–351.
- Zhang, Z., & Yuan, K.-H. (2016). Robust coefficients alpha and omega and confidence intervals with outlying observations and missing data: Methods and software. *Educational and Psychological Measurement, 76*(3), 387–411.
- Deng, L., Marcoulides, G., & Yuan, K.-H. (2015). Psychometric properties of measures of team diversity with Likert data. *Educational and Psychological Measurement, 75*, 512–534.
- Deng, L., & Yuan, K.-H. (2015). Multiple group analysis for structural equation modeling with dependent samples. *Structural Equation Modeling, 22*, 552–567.
- Liang, L., Hayashi, K., & Yuan, K.-H. (2015). On closeness between factor analysis and principal component analysis under high-dimensional conditions. In A. van der Ark, D.M. Bolt, W.-C. Wang, J.A. Douglas, & S.-M. Chow (Eds.), *Quantitative psychology research: The 79th Annual Meeting of the Psychometric Society* (pp. 209–221). New York: Springer.
- Yuan, K.-H., & Tian, Y. (2015). Structural equation modeling as a statistical method: An overview. *JSM Mathematics & Statistics 2*(1):1006.
- Yuan, K.-H., Tian, Y., & Yanagihara, H. (2015). Empirical correction to the likelihood ratio statistic for structural equation modeling with many variables. *Psychometrika, 80*, 379–405.
- Yuan, K.-H., Tong, X., & Zhang, Z. (2015). Bias and efficiency for SEM with missing data and auxiliary variables: Two-stage robust method versus two-stage ML. *Structural Equation Modeling, 22*, 178–192.
- Jamshidian, M., & Yuan, K.-H. (2014). Examining missing data mechanisms via homogeneity of parameters, homogeneity of distributions, and multivariate normality. *Wiley Interdisciplinary Reviews: Computational Statistics, 6*, 56–73.
- Patton, J., Cheng, Y., Yuan, K.-H., & Diao, Q. (2014). Bootstrap standard errors for maximum likelihood ability estimates when item parameters are unknown. *Educational*

- and *Psychological Measurement*, 74, 697–712.
- Tong, X., Zhang, Z., & Yuan, K.-H. (2014). Evaluation of test statistics for robust structural equation modeling with nonnormal missing data. *Structural Equation Modeling*, 21, 553–565.
- Yuan, K.-H., Cheng, Y., & Maxwell, S. (2014). Moderation analysis using a two-level regression model. *Psychometrika*, 79(4), 701–732.
- Yuan, K.-H., Cheng, Y., & Patton, J. (2014). Information matrices and standard errors for MLEs of item parameters in IRT. *Psychometrika*, 79, 232–254.
- Yuan, K.-H., & Savalei, V. (2014). Consistency, bias and efficiency of the normal-distribution-based MLE: The role of auxiliary variables. *Journal of Multivariate Analysis*, 124, 353–370.
- Jamshidian, M., & Yuan, K.-H. (2013). Data-driven sensitivity analysis to detect missing data mechanism with applications to structural equation modeling. *Journal of Statistical Computation and Simulation*, 83, 1344–1362.
- Patton, J., Cheng, Y., Yuan, K.-H., & Diao, Q. (2013). The influence of item calibration error on variable-length computerized adaptive testing. *Applied Psychological Measurement*, 37, 24–40.
- Yanagihara, H., Yuan, K.-H., Fujisawa, H., & Hayashi, K. (2013). A class of model selection criteria based on cross-validation method. *Hiroshima Mathematical Journal*, 43, 149–177.
- Yuan, K.-H., & Schuster, C. (2013). Overview of statistical estimation methods. In T. D. Little (Ed.), *The Oxford handbook of quantitative methods, volume 1, foundation* (pp. 361–387). New York: Oxford University Press.
- Yuan, K.-H., & Zhong, X. (2013). Robustness of fit indices to outliers and leverage observations in structural equation modeling. *Psychological Methods*, 18, 121–136.
- Yung, Y.-F., & Yuan, K.-H. (2013). Bartlett factor scores: General formulas and applications to structural equation models. In R. E. Millsap, L. A. van der Ark, D. M. Bolt, & C. M. Woods (Eds.), *New developments in quantitative psychology* (pp. 385–401). New York: Springer.
- Cheng, Y., Yuan, K.-H., & Liu, C. (2012). Comparison of reliability measures under factor analysis and item response theory. *Educational and Psychological Measurement*, 72, 52–67.
- Patton, J., Cheng, Y., Yuan, K.-H., & Diao, Q. (2012). Capitalization on chance in variable-length classification tests employing the sequential probability ratio test. *Psychological Test and Assessment Modeling*, 54, 432–449.
- Yuan, K.-H., Yang-Wallentin, F., & Bentler, P. M. (2012). ML versus MI for missing data with violation of distribution conditions. *Sociological Methods & Research*, 41, 598–629.
- Yuan, K.-H., & Zhang, Z. (2012). Robust structural equation modeling with missing data and auxiliary variables. *Psychometrika*, 77, 803–826.
- Yuan, K.-H., & Zhang, Z. (2012). Structural equation modeling diagnostics using R package semdiag and EQS. *Structural Equation Modeling*, 19, 683–702.
- Zu, J., & Yuan, K.-H. (2012). Standard error of linear observed-score equating for the NEAT design with nonnomrally distributed data. *Journal of Educational Measurement*, 49, 190–213.
- Bentler, P. M., Liang, J., Tang, M.-L., & Yuan, K.-H. (2011). Constrained ML estimation for two-level mean and covariance structure models. *Educational and Psychological Measurement*, 71, 325–345.
- Bentler, P. M., & Yuan, K.-H. (2011). Positive definiteness via offdiagonal scaling of a symmetric indefinite matrix. *Psychometrika*, 76, 119–123.

- Schuster, C., & Yuan, K.-H. (2011). Robust estimation of latent ability in item response models. *Journal of Educational and Behavioral Statistics*, *36*, 720–735.
- Tong, X., Zhang, Z., & Yuan, K.-H. (2011). Abstract: Evaluation of test statistics for robust structural equation modeling with non-normal missing data. *Multivariate Behavioral Research*, *46*, 1016.
- Yuan, K.-H., & Bentler, P. M. (2011). Response to Letter to the Editor by S. K. Sapra. *American Statistician*, *65*, 69.
- Yuan, K.-H., & Chan, W. (2011). Biases and standard errors of standardized regression coefficients. *Psychometrika*, *76*, 670–690.
- Yuan, K.-H., Wu, R., & Bentler, P. M. (2011). Ridge structural equation modeling with correlation matrices for ordinal and continuous data. *British Journal of Mathematical and Statistical Psychology*, *64*, 107–133.
- Zhong, X., & Yuan, K.-H. (2011). Bias and efficiency in structural equation modeling: Maximum likelihood versus robust methods. *Multivariate Behavioral Research*, *46*, 229–265.
- Cheng, Y., & Yuan, K.-H. (2010). The impact of fallible item parameter estimates on latent trait recovery. *Psychometrika*, *75*, 280–291.
- Hayashi, K., & Yuan, K.-H. (2010). Exploratory factor analysis. In N. J. Salkind (Ed.), *Encyclopedia of research design* (pp. 458–465). Thousand Oaks, CA: Sage.
- Lu, Z., & Yuan, K.-H. (2010). Welch's *t* test. In N. J. Salkind (Ed.), *Encyclopedia of research design* (pp. 1620–1623). Thousand Oaks, CA: Sage.
- Yanagihara, H., Himeno, T., & Yuan, K.-H. (2010). GLS discrepancy based information criteria for selecting covariance structure models. *Behaviormetrika*, *37*, 71–86.
- Yuan, K.-H., & Bentler, P. M. (2010). Consistency of normal distribution based pseudo maximum likelihood estimates when data are missing at random. *American Statistician*, *64*, 263–267.
- Yuan, K.-H., & Bentler, P. M. (2010). Two simple approximations to the distributions of quadratic forms. *British Journal of Mathematical and Statistical Psychology*, *63*, 273–291.
- Yuan, K.-H., & Bentler, P. M. (2010). Finite normal mixture SEM analysis by fitting multiple conventional SEM models. *Sociological Methodology*, *40*, 191–245.
- Yuan, K.-H., & Hayashi, K. (2010). Fitting data to model: Structural equation modeling diagnosis using two scatter plots. *Psychological Methods*, *15*, 335–351.
- Yuan, K.-H., Cheng, Y., & Zhang, W. (2010). Determinants of standard errors of MLEs in confirmatory factor analysis. *Psychometrika*, *75*, 633–648.
- Zhong, X., & Yuan, K.-H. (2010). Weights. In N. J. Salkind (Ed.), *Encyclopedia of research design* (pp. 1617–1620). Thousand Oaks, CA: Sage.
- Zu, J., & Yuan, K.-H. (2010). Local influence and robust procedures for mediation analysis. *Multivariate Behavioral Research*, *45*, 1–44.
- Zu, J., & Yuan, K.-H. (2010). Serial correlation. In N. J. Salkind (Ed.), *Encyclopedia of research design* (pp. 1352–1358). Thousand Oaks, CA: Sage.
- Bentler, P. M., Satorra, A., & Yuan, K.-H. (2009). Smoking and cancers: Case-robust analysis of a classic data set. *Structural Equation Modeling*, *16*, 382–390.
- Kelly, A. E., & Yuan, K.-H. (2009). Clients secret-keeping and the working alliance in adult outpatient therapy. *Psychotherapy Theory, Research, Practice, Training*, *46*, 193–202.
- Savalei, V., & Yuan, K.-H. (2009). On the model-based bootstrap with missing data: Obtaining a *p*-value for a test of exact fit. *Multivariate Behavioral Research*, *44*, 741–763.
- Yuan, K.-H. (2009). Normal distribution based pseudo ML for missing data: With

- applications to mean and covariance structure analysis. *Journal of Multivariate Analysis*, *100*, 1900–1918.
- Yuan, K.-H. (2009). Identifying variables responsible for data not missing at random. *Psychometrika*, *74*, 233–256.
- Hayashi, K., Bentler, P. M., & Yuan, K.-H. (2008). Structural equation modeling. In C. R. Rao, J. P. Miller, & D. C. Rao (Eds.), *Handbook of statistics 28: Epidemiology and medical statistics* (pp. 395–428). Amsterdam: North-Holland.
- Yuan, K.-H. (2008). Noncentral chi-square versus normal distributions in describing the likelihood ratio statistic: The univariate case and its multivariate implication. *Multivariate Behavioral Research*, *43*, 109–136.
- Yuan, K.-H. (2008). Effect sizes for testing not missing at random mechanism. In K. Shigemasu, A. Okada, T. Imaizumi, & T. Hoshino (Eds.), *New trends in psychometrics* (pp. 559–583). Tokyo: Universal Academy Press.
- Yuan, K.-H., & Chan, W. (2008). Structural equation modeling with near singular covariance matrices. *Computational Statistics & Data Analysis*, *52*, 4842–4858.
- Yuan, K.-H., Kouros, C. D., & Kelley, K. (2008). Diagnosis for covariance structure models by analyzing the path. *Structural Equation Modeling*, *15*, 564–602.
- Yuan, K.-H., & Lu, L. (2008). SEM with missing data and unknown population using two-stage ML: Theory and its application. *Multivariate Behavioral Research*, *62*, 621–652.
- Yuan, K.-H., & Zhong, X. (2008). Outliers, leverage observations and influential cases in factor analysis: Minimizing their effect using robust procedures. *Sociological Methodology*, *38*, 329–368.
- Zu, J., & Yuan, K.-H. (2008). Abstract: Local influence and robust methods for mediation models. *Multivariate Behavioral Research*, *43*, 661.
- Hayashi, K., Bentler, P. M., & Yuan, K.-H. (2007). On the likelihood ratio test for the number of factors in exploratory factor analysis. *Structural Equation Modeling*, *14*, 505–526.
- Yuan, K.-H., & Bentler, P. M. (2007). Multilevel covariance structure analysis by fitting multiple single-level models. *Sociological Methodology*, *37*, 53–82.
- Yuan, K.-H., & Bentler, P. M. (2007). Robust procedures in structural equation modeling. In S.-Y. Lee (Ed.), *Handbook of latent variable and related models* (pp. 367–397). Neitherland: Elsevier.
- Yuan, K.-H., & Bentler, P. M. (2007). Structural equation modeling. In C. R. Rao & S. Sinharay (Eds.), *Handbook of statistics 26: Psychometrics* (pp. 297–358). Amsterdam: North-Holland.
- Yuan, K.-H., Hayashi, K., & Bentler, P. M. (2007). Normal theory likelihood ratio statistic for mean and covariance structure analysis under alternative hypotheses. *Journal of Multivariate Analysis*, *98*, 1262–1282.
- Yuan, K.-H., Hayashi, K., & Yanagihara, H. (2007). A class of population covariance matrices in the bootstrap approach to covariance structure analysis. *Multivariate Behavioral Research*, *42*, 261–281.
- Zhao, C., Elishaev, E., Yuan, K.-H., Yu, J., & Austin, R. M. (2007). Very low human papillomavirus DNA prevalence in mature women with negative computer-imaged liquid-based pap tests. *Cancer Cytopathology*, *111*, 292–297.
- Yuan, K.-H., & Bentler, P. M. (2006). Asymptotic robustness of standard errors in multilevel structural equation models. *Journal of Multivariate Analysis*, *97*, 1121–1141.
- Yuan, K.-H., & Bentler, P. M. (2006). Mean comparison: Manifest variable versus latent variable. *Psychometrika*, *71*, 139–159.

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- Bentler, P. M., Liang, J., & Yuan, K.-H. (2005). Some recent advances in two-level structural equation models: Estimation, testing and robustness. In J. Fan & G. Li (Eds.), *Contemporary multivariate analysis and design of experiments: In celebration of Prof. Kai-Tai Fang's 65th birthday* (pp. 99–120). NJ: World Scientific.
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- Yanagihara, H., & Yuan, K.-H. (2005a). Four improved statistics for contrasting means by correcting skewness and kurtosis. *British Journal of Mathematical and Statistical Psychology*, *58*, 209–237.
- Yanagihara, H., & Yuan, K.-H. (2005b). Three approximate solutions to the multivariate Behrens-Fisher problem. *Communications in Statistics: Simulation and Computation*, *34*, 975–988.
- Yuan, K.-H. (2005). Fit indices versus test statistics. *Multivariate Behavioral Research*, *40*, 115–148.
- Yuan, K.-H., & Bentler, P. M. (2005). Asymptotic robustness of the normal theory likelihood ratio statistic for two-level covariance structure models. *Journal of Multivariate Analysis*, *94*, 328–343.
- Yuan, K.-H., Bentler, P. M., & Zhang, W. (2005). The effect of skewness and kurtosis on mean and covariance structure analysis: The univariate case and its multivariate implication. *Sociological Methods & Research*, *34*, 249–258.
- Yuan, K.-H., & Chan, W. (2005). On nonequivalence of several procedures of structural equation modeling. *Psychometrika*, *70*, 791–798.
- Yuan, K.-H., & Hayashi, K. (2005). On Muthén's maximum likelihood for two-level covariance structure models. *Psychometrika*, *70*, 147–167.
- Yuan, K.-H., & Maxwell, S. (2005). On the post hoc power in testing mean difference. *Journal of Educational and Behavioral Statistics*, *30*, 141–167.
- Yuan, K.-H., & Bentler, P. M. (2004a). On the asymptotic distributions of two statistics for two-level covariance structure models within the class of elliptical distributions. *Psychometrika*, *69*, 437–457.
- Yuan, K.-H., & Bentler, P. M. (2004b). On chi-square difference and z tests in mean and covariance structure analysis when the base model is misspecified. *Educational and Psychological Measurement*, *64*, 737–757.
- Yuan, K.-H., Bentler, P. M., & Chan, W. (2004). Structural equation modeling with heavy tailed distributions. *Psychometrika*, *69*, 421–436.
- Yuan, K.-H., Fung, W. K., & Reise, S. (2004). Three Mahalanobis-distances and their role in assessing unidimensionality. *British Journal of Mathematical and Statistical Psychology*, *57*, 151–165.
- Yuan, K.-H., Lambert, P. L., & Fouladi, R. T. (2004). Mardia's multivariate kurtosis with missing data. *Multivariate Behavioral Research*, *39*, 413–437.
- Yuan, K.-H., & Marshall, L. L. (2004). A new measure of misfit for covariance structure models. *Behaviormetrika*, *31*, 67–90.
- Hayashi, K., & Yuan, K.-H. (2003). Robust Bayesian factor analysis. *Structural Equation Modeling*, *10*, 525–533.
- Yuan, K.-H., & Bentler, P. M. (2003). Eight test statistics for multilevel structural equation models. *Computational Statistics and Data Analysis*, *44*, 89–107.
- Yuan, K.-H., Guarnaccia, C. A., & Hayslip, B. J. (2003). A study of the distribution of sample coefficient alpha with the Hopkins Symptom Checklist: Bootstrap versus

- asymptotics. *Educational and Psychological Measurement*, 63, 5–23.
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