

HOK CHIO (MARK) LAI

638P Teachers College/Dyer Hall ♦ College of Education, Criminal Justice, and Human Services
 ♦ School of Education ♦ University of Cincinnati ♦ Cincinnati, OH 45221-0022
 (513) 556-1031 ♦ mark.lai@uc.edu

EDUCATION

Ph.D. in Educational Psychology <i>Texas A&M University</i> , College Station, TX	2011–2015
Bachelor of Social Science in Psychology <i>University of Macau</i> , Macau	2007–2011

PROFESSIONAL EXPERIENCE

Assistant Professor (Tenure-Track) School of Education, <i>University of Cincinnati</i> , Cincinnati, OH	2015 Aug–Present
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RESEARCH INTERESTS

Effect size calculation for multilevel data
 Robust methods for multilevel modeling
 Multilevel structural equation modeling
 Measurement invariance and its impact on statistical modeling
 Meta-analysis of studies with different data structures

PUBLICATIONS

Methodological/Quantitative Related Journal Publications

23. **Lai, M. H. C.**, & Zhang, J. (accepted). Evaluating fit indices for multivariate *t*-based structural equation modeling with data contamination. *Frontiers in Psychology*. Advance online publication. <https://doi.org/10.3389/fpsyg.2017.01286>

22. Hsiao, Y., Kwok, O., **Lai, M. H. C.** (2017). Evaluation of two methods for modeling measurement errors when testing interaction effects with observed composite scores. *Educational and Psychological Measurement*. Advance online publication. <https://doi.org/10.1177/0013164416679877>

21. **Lai, M. H. C.**, Kwok, O., Yoon, M., & Hsiao, Y. (2017). Understanding the impact of partial factorial invariance on selection accuracy: An R script. *Structural Equation Modeling: A Multidisciplinary Journal*. Advance online publication. <https://doi.org/10.1080/10705511.2017.1318703>

20. **Lai, M. H. C.**, Kwok, O., Hsiao, Y., & Qian, C. (2017). Finite population correction for two-level hierarchical linear modeling. *Psychological Methods*. Advance online publication. <https://doi.org/10.1037/met0000137>
19. **Lai, M. H. C.**, & Kwok, O. (2016). Estimating standardized effect sizes for two-and three-level partially nested data. *Multivariate Behavioral Research*, 51, 740–756. <https://doi.org/10.1080/00273171.2016.1231606>
18. Kim, M., Kwok, O., Yoon, M., Willson, V. L., & **Lai, M. H. C.** (2016). Specification search for identifying the correct mean trajectory in latent growth models: A Monte Carlo study. *Journal of Experimental Education*, 307–329. <https://doi.org/10.1080/00220973.2014.984831>
17. **Lai, M. H. C.** & Kwok, O. (2015). Examining the rule of thumb of not using multilevel modeling: The “design effect smaller than two rule”. *Journal of Experimental Education*, 83, 423–438. <https://doi.org/10.1080/00220973.2014.907229>
16. **Lai, M. H. C.**, Wu, A. M. S., & Tong, K. (2015). Validation of the Gambling Refusal Self-Efficacy Questionnaire for Chinese undergraduate students. *Journal of Gambling Studies*, 31, 243–256. <https://doi.org/10.1007/s10899-013-9412-7>
15. **Lai, M. H. C.** & Yoon, M. (2015). A modified comparative fit index for factorial invariance studies. *Structural Equation Modeling: A Multidisciplinary Journal*, 22, 236–248. <https://doi.org/10.1080/10705511.2014.935928>
14. **Lai, M. H. C.** & Kwok, O. (2014). Standardized mean differences in two-level cross-classified random effect models. *Journal of Educational and Behavioral Statistics*, 39, 282–302. <http://dx.doi.org/10.3102/1076998614532950>
13. Chu, Y., **Lai, M. H. C.**, Xu, Y., & Zhou, Y. (2012). Test review: Advanced Clinical Solutions for the WAIS-IV and WMS-IV. *Journal of Psychoeducational Assessment*, 30, 520–524. <https://doi.org/10.1177/0734282912442868>

Journal Publications in Substantive Research Areas

12. Clemens, N. H., **Lai, M. H. C.**, Burke, M. D., & Wu, J. (accepted). Interrelationships of growth in letter-name and sound fluency in kindergarten and implications for subsequent reading fluency. *School Psychology Review*.
11. Richardson, G. B., Dariotis, J. K., & **Lai, M. H. C.** (2017). From environment to mating competition and Super-K in a predominantly urban sample of young adults. *Evolutionary Psychology*. Advance online publication. <https://doi.org/10.1177/1474704916670165>
10. Richardson, G. B., Sanning, B. K., **Lai, M. H. C.**, Copping, L., Hardesty, P. H., & Kruger, D. J. (2017). On the psychometric study of human life history strategies: State of the science

and evidence of two independent dimensions. *Evolutionary Psychology*. Advance online publication. <https://doi.org/10.1177/1474704916666840>

9. Wu, A. M. S., **Lai, M. H. C.**, Yu, S., Lau, J. T. F., & Lei, M.-w. (2017). Motives for Online Gaming Questionnaire: Its psychometric properties and correlation with Internet gaming disorder symptoms among Chinese people. *Journal of Behavioral Addictions*, 6, 11–20. <https://doi.org/10.1556/2006.6.2017.007>
8. McCord, C. E., Elliott, T. R., Berry, J. W., Underhill, A. T., Fine, P. R., & **Lai, M. H. C.** (2016). Trajectories of happiness five years following medical discharge for traumatic disability: Differences between insider and outsider perspectives. *Journal of Happiness Studies*, 17, 553–567. <https://doi.org/10.1007/s10902-014-9610-8>
7. Wu, A. M. S., & **Lai, M. H. C.**, Tong, K., & Yu, M. S. (2016). Psychological correlates of disordered gambling tendencies among Chinese high school and undergraduate students. *International Journal of Mental Health and Addiction*, 14, 322–336. <https://doi.org/10.1007/s11469-016-9632-z>
6. Wu, A. M. S., **Lai, M. H. C.**, & Tong, K. (2015). Internet gambling among community adults and university students in Macao. *Journal of Gambling Studies*, 31, 643–657. <https://doi.org/10.1007/s10899-014-9451-8>
5. Hernandez, C. L., Elliott, T. R., Berry, J. W., Underhill, A. T., Fine, P. R., & **Lai, M. H. C.** (2014). Trajectories of life satisfaction: Five years after medical discharge for traumatically acquired disability. *Rehabilitation Psychology*, 59, 183–192. <https://doi.org/10.1037/a0035887>
4. Wu, A. M. S., **Lai, M. H. C.**, & Chan, I. T. (2014). Coaching behaviors, satisfaction of needs, and intrinsic motivation among Chinese university athletes. *Journal of Applied Sport Psychology*, 26, 334–348. <https://doi.org/10.1080/10413200.2014.888107>
3. Wu, A. M. S., **Lai, M. H. C.**, & Tong, K. (2014). Gambling Disorder: Estimated prevalence rates and risk factors in Macao. *Psychology of Addictive Behaviors*, 28, 1190–1197. <https://doi.org/10.1037/a0037603>
2. **Lai, M. H. C.**, Ren, M. Y. W., Wu, A. M. S., & Hung, E. P. W. (2013). Motivation as mediator between national identity and intention to volunteer. *Journal of Community and Applied Social Psychology*, 23, 128–142. <https://doi.org/10.1002/casp.2108>
1. Wu, A. M. S., **Lai, M. H. C.**, Tong, K., & Tao, V. Y. K. (2013). Chinese attitudes, norms, behavioral control and gambling involvement in Macao. *Journal of Gambling Studies*, 29, 749–763. <https://doi.org/10.1007/s10899-012-9344-7>

1. **Lai, M. H. C.** & Tong, K. K. (2011). 媒體使用與評價 [Media usage and evaluation]. In F. M. Cheung, S. L. Wong, P. S. Wan, & V. Zheng (Eds.), *The new face of Macau: Ten years of development and changes* (pp. 285–308). Hong Kong, China: Hong Kong Institute of Asia-Pacific Studies, The Chinese University of Hong Kong.

CONFERENCE PRESENTATIONS

25. **Lai, M. H. C.**, & Zhang, J. (2017, April). *Evaluating fit-indexes for multivariate t-based structural equation modeling*. Paper to be presented at the annual meeting of the American Educational Research Association, San Antonio, TX.
24. **Lai, M. H. C.**, & Kwok, O. (2017, April). *Standardized mean difference for three-level partially nested data*. Paper to be presented at the annual meeting of the American Educational Research Association, San Antonio, TX.
23. **Lai, M. H. C.**, & Zhang, J. (2016, June). *The use of multivariate-t-based maximum likelihood for robust SEM*. Paper presented at the 4th Institute of Mathematical Statistics Asia Pacific Rim Meeting, Hong Kong.
22. Yoon, M., & **Lai, M. H. C.** (2016, June). *Testing factorial invariance with severely unbalanced samples*. Paper presented at the 4th Institute of Mathematical Statistics Asia Pacific Rim Meeting, Hong Kong.
21. Hsiao, Y. Y., Kwok, O., & **Lai, M. H. C.** (2016, April). *Modeling measurement error on interaction effect with items mean scores using structural equation modeling*. Paper presented at the annual meeting of the American Educational Research Association, Washington, DC.
20. **Lai, M. H. C.**, & Kwok, O. (2016, April). *Using design effects to determine the necessity of applying cross-classified random effects models*. Paper presented at the annual meeting of the American Educational Research Association, Washington, DC.
19. **Lai, M. H. C.**, & Kwok, O. (2016, March). *Design effects in cross-classified random effects models*. Paper presented at the Texas Universities' Educational Statistics and Psychometrics Meeting, College Station, TX.
18. Kwok, O., Yoon, M., **Lai, M. H. C.**, & Hsiao, Y. Y. (2015, July). *Partial measurement invariance then and now: Methodological aspects and practical implications*. Paper presented at the annual meeting of the Psychometric Society, Beijing, China.
17. **Lai, M. H. C.**, Kwok, O., Hsiao, Y. Y., & Cao, Q. (2015, April). *Finite population correction for two-level hierarchical linear modeling*. Paper presented at the annual meeting of the American Educational Research Association, Chicago, IL.

16. Wu, A. M. S., **Lai, M. H. C.**, & Tong, K. K. (2015, April). *Gambling refusal self-efficacy, attitude, injunctive norm and youth gambling in Macao*. Paper presented in The Third Asia Pacific Conference on Gambling & Commercial Gaming Research, Beijing, China.
15. Lara-Alecio, R., Tong, F., Irby, B. J., Guerrero, C. L., Lopez, T., **Lai, M. H. C.**, & Jimenez, D. D. (2015, April). *Third grade bilingual teachers' pedagogical differences during ESL block in a randomized control trial study*. Paper presented at the annual meeting of the American Educational Research Association, Chicago, IL.
14. **Lai, M. H. C.**, Kwok, O., Hsiao, Y. Y., & Cao, Q. (2015, March). *Finite population correction for two-level hierarchical linear modeling*. Paper presented at the Texas Universities' Educational Statistics and Psychometrics Meeting, Austin, TX.
13. **Lai, M. H. C.** (2014, November). *Bootstrap Confidence Intervals for Multilevel Effect Size*. Poster presented at the Conference "Advances in Multilevel Modeling for Educational Research", College Park, MD.
12. Cao, Q. & **Lai, M. H. C.** (2014, July). *Sensitivity of fit indices to test for cluster bias in multilevel data*. Paper presented at the 79th Annual Meeting of the Psychometric Society, Madison, WI.
11. Hsiao, Y. Y. & **Lai, M. H. C.** (2014, April). *The impact of partial measurement invariance on tests of moderation for single and multi-level data*. Paper presented at the annual meeting of the American Educational Research Association, Philadelphia, PA.
10. **Lai, M. H. C.** & Kwok, O. (2014, April). *Standardized mean difference in partially nested data*. Paper presented at the annual meeting of the American Educational Research Association, Philadelphia, PA.
9. **Lai, M. H. C.**, Tong, F., Yoon, M., Lara-Alecio, R., Irby, B. J., & Kwok, O. (2014, April). *Modeling cross-classified data with adequate within-subject variance-covariance structures: A lesson from the Project ELLA data*. Poster presented at the annual meeting of the American Educational Research Association, Philadelphia, PA.
8. Wu, A. M. S., **Lai, M. H. C.**, & Tong, K.-k. (2014, February). *Internet gambling: Participation and addiction in Macao*. Paper presented at the 5th International Gambling Conference (IGC2014), Auckland, New Zealand.
7. Wu, A. M. S., **Lai, M. H. C.**, & Tong, K. (2013, December). *Prevalence of gambling involvement and gambling disorder in Macao*. Paper presented at the Second Asia Pacific Conference on Gambling & Commercial Gaming Research (APCG2013), Kaohsiung, Taiwan.
6. **Lai, M. H. C.** & Kwok, O. (2013a, August). *Standardized mean difference in cross-classified random effect models*. Poster presented at the American Psychological Association annual convention, Honolulu, HI.

5. Wu, A. M. S., **Lai, M. H. C.**, Tong, K. K., & Tao, V. Y. K. (2013, July). *Application of the theory of planned behavior on gambling involvement among Chinese people*. Paper presented at the 13th European Congress of Psychology, Stockholm, Sweden.
4. **Lai, M. H. C.** & Kwok, O. (2013b, May). *The excuse of not using multilevel modeling: An investigation of the “design effect larger than two” rule*. Poster presented at the annual meeting of the American Educational Research Association, San Francisco, CA.
3. **Lai, M. H. C.** (2013, April). *Comparing Pearl’s partial coefficient test with the other global- and local-fit measures in SEM*. Paper presented at the Texas Universities’ Educational Statistics and Psychometrics Meeting, Austin, TX.
2. **Lai, M. H. C.** (2012, February). *A review of the panoply of univariate and multivariate effect size choices*. Paper presented at the annual meeting of the Southwest Educational Research Association, New Orleans, LA.
1. **Lai, M. H. C.** & Tong, K. (2010, June). 澳門市民的媒體使用及對傳媒公信力的評價 [Macao citizen’s habit of using mass media and evaluation on media credibility]. Paper presented at the Conference on Macau’s Ten-Year Development, Macau, China.

INVITED PRESENTATIONS

Introduction to Bayesian data analysis,

Texas A&M University, TX

2017 May

Practical understanding on application of structural equation modeling,

City University of Hong Kong, Hong Kong

2016 June

- A 2.5-hour workshop invited by the Hong Kong Society of Behavioral Health

DEPARTMENTAL TALKS

Standardized mean difference in partially nested data 2016 Nov

- Presentation at the Data Analytics Showcase & Networking Event, University of Cincinnati, OH

Quantitative methods for interdisciplinary research 2016 April

- Presentation at the Best Practices in Research Meeting, University of Cincinnati, OH

Standardized mean difference in partially nested data 2015 Oct

- Research presentation at the Quantitative and Mixed Methods Research Methodologies (QMRM) Brown Bag, University of Cincinnati, OH

Doing Monte Carlo simulation studies with Mplus

2013 Jan & 2014 Jan

- Presentation at Texas A&M University, TX

HONORS AND AWARDS

University Research Council AHSS Faculty Research and Scholarship Stipend Awards

2017

University of Cincinnati, \$10,000

“Impact of Measurement Bias on the Validity of Intervention Studies”

Role: PI

Vice President for Research Award

2016–2018

University of Cincinnati, \$30,500

Distinguished Honor Graduate

2015

College of Education and Human Development, Texas A&M University

Travel Award to present at the Conference “Advances in Multilevel Modeling for Educational Research” at University of Maryland

2014

The Society for Multivariate Experimental Psychology

Graduate Research Grant

2014

College of Education and Human Development, Texas A&M University, for the project

“Bootstrap Confidence Intervals for Multilevel Effect Size”

Graduate Travel Grant

2013, 2014, & 2015

College of Education and Human Development, Texas A&M University

Outstanding Academic Paper Award

2011

University of Macau

Jorge Alvares Foundation Academic Prize

2011

University of Macau

Rector’s Honor List

2011

University of Macau

TEACHING INTERESTS

Multilevel modeling, Research methods in the social sciences, Regression analysis, Statistical computing with R, Structural equation modeling, Theories of psychological measurement

TEACHING EXPERIENCE

University of Cincinnati, Cincinnati, OH

Instructor (Instructor evaluation: 4.65 / 5)
 EDST 8075 – Bayesian Data Analysis
 EDST 7082 – Getting Started With Multilevel Modeling
 EDST 7011 – Statistical Data Analysis II
 EDST 7010 – Statistical Data Analysis I

MENTORSHIP

Current Ph.D. Students, Committee Chair

Liu, Yuanfang, University of Cincinnati
 Sunny, Cijy, University of Cincinnati

Current Ph.D. Students, Committee Member

Derickson, Ryan, University of Cincinnati
 Hsiao, Yu-Yu, Texas A&M University
 Ji, Yuhong, Texas A&M University
 Zen, Weng, University of Cincinnati
 Zhang, Jiaqi, University of Cincinnati

Past Ph.D. Students, Committee Member

Chen, Ching-Chen, University of Cincinnati (Assistant Professor, University of Nevada, Las Vegas, 2016)

Current Master Students, Committee Member

McGee, Nathan, University of Cincinnati

COMPUTER SKILLS

Statistics:	R, SAS, SPSS, Stata
SEM:	AMOS, LISREL, Mplus, R (lavaan, OpenMx, xxM)
Multilevel:	HLM, R (lme4, nlme), SAS (PROC MIXED), SPSS (MIXED), Stata (xtmixed)
Psychometrics:	IRTPRO, R (mirt), WinSteps
Bayesian:	JAGS, RStan, WinBUGS
Others:	Ci3 CATI, C++, HTML & CSS, LaTeX, Linux, Markdown, Mathematica, Octave, Python, SQL, TeleForm, Visual Basic

PROFESSIONAL SERVICE

Ad hoc Reviewer

Educational and Psychological Measurement
 Evaluation Review
 Evolutionary Psychology
 Journal of Experimental Education

Journal of Mixed Methods Research
Journal of Modern Applied Statistical Methods
Journal of Personality
Journal of School Psychology
Multivariate Behavioral Research
Psychological Methods
School Psychology Review
Sociological Methods & Research
Structural Equation Modeling: A Multidisciplinary Journal

PROFESSIONAL MEMBERSHIPS

American Educational Research Association (Member)
American Psychological Association Division 5 (Member)
American Statistical Association (Member)
Hong Kong Society of Behavioral Health (Advisor, Methodology Advisor Group)
Psychometric Society (Member)