

HOK CHIO (MARK) LAI

638P Teachers College ◊ College of Education, Criminal Justice, and Human Services ◊ School
of Education ◊ University of Cincinnati ◊ Cincinnati, OH 45221-0022
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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 APPOINTMENTS

| | |
|---|------------------|
| 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
Growth modeling of complex longitudinal data
Measurement invariance and its impact on statistical modeling

PUBLICATIONS

(* indicates student author)

Methodological/Quantitative Related Journal Publications

24. *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>
23. **Lai, M. H. C.**, & *Zhang, J. (2017). Evaluating fit indices for multivariate *t*-based structural equation modeling with data contamination. *Frontiers in Psychology*, 8. <https://doi.org/10.3389/fpsyg.2017.01286>
22. **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>

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*, 24, 783–799. <https://doi.org/10.1080/10705511.2017.1318703>
- 20 Yoon, M., & **Lai, M. H. C.** (2017). Testing factorial invariance with unbalanced samples. *Structural Equation Modeling: A Multidisciplinary Journal*. Advance online publication. <https://doi.org/10.1080/10705511.2017.1387859>
19. 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*, 84, 307–329. <https://doi.org/10.1080/00220973.2014.984831>
18. **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>
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.** & 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>
15. **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. <https://doi.org/10.3102/1076998614532950>
14. 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

13. Clemens, N. H., **Lai, M. H. C.**, Burke, M. D., & Wu, J. (2017). Interrelations of growth in letter naming and sound fluency in kindergarten and implications for subsequent reading fluency. *School Psychology Review*, 46, 272–287. <https://doi.org/10.17105/SPR-2017-0032.V46-3>
12. 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*, 15. <https://doi.org/10.1177/1474704916670165>

11. 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, 15*.
<https://doi.org/10.1177/1474704916666840>
10. 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>
9. 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>
8. 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>
7. **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>
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>

BOOK CHAPTERS

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

27. Kwok, O., **Lai, M. H. C.**, Tong, F., Lara-Alecio, R., Irby, B. J., Yoon, M., & Yeh, Y. (2018). *Analyzing complex longitudinal data in educational research: A demonstration with the project English language and literacy acquisition (ELLA) data using xxM*. Paper to be presented at the annual meeting of the American Educational Research Association, New York, NY.
26. **Lai, M. H. C.** (2018, April). *Confidence interval for standardized effect size in cluster-randomized trials: Comparing analytic and bootstrap methods*. Paper to be presented at the annual meeting of the American Educational Research Association, New York, NY.
25. **Lai, M. H. C.**, & Zhang, J. (2017, April). *Evaluating fit-indexes for multivariate t-based structural equation modeling*. Paper 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 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

Can we trust test scores? A methodological discussion on the impact of measurement invariance

2017 Nov

- Presentation at Power Friday, University of Cincinnati, OH

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

Status: Funded

National Institutes of Health, Education and Health: New Frontiers (R03)

2017

“Career and technical education and health-behavior disparities”

Role: Co-PI

Status: Not funded

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 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

Derickson, Ryan, University of Cincinnati

Sunny, Cijy, University of Cincinnati

Current Ph.D. Students, Committee Member

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)

Hsiao, Yu-Yu, Texas A&M University (Post doctoral fellow, University of New Mexico, Albuquerque, 2017)

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, brms), SAS (PROC MIXED), SPSS (MIXED), Stata (xtmixed) |
| Psychometrics: | IRTPRO, R (ltm, mirt), WinSteps |
| Bayesian: | JAGS, Stan, WinBUGS |
| Others: | Ci3 CATI, C++, HTML & CSS, LaTeX, Linux, Markdown, Mathematica, Octave, Python, SQL, TeleForm, Visual Basic |

PROFESSIONAL SERVICE

Ad hoc Reviewer

Behavior Research Methods

Educational and Psychological Measurement

Evaluation Review

Evolutionary Psychology

Frontiers in 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)