

## HOK CHIO (MARK) LAI

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### EDUCATION

Ph.D. in Educational Psychology 2011–2015  
*Texas A&M University, College Station, TX*

Bachelor of Social Science in Psychology 2007–2011  
*University of Macau, Macau*

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### PROFESSIONAL APPOINTMENTS

Assistant Professor (Tenure-Track) 2018 Aug–Present  
Department of Psychology, *University of Southern California*, Los Angeles, CA

Assistant Professor (Tenure-Track) 2015 Aug–2018 Aug  
School of Education, *University of Cincinnati*, Cincinnati, OH

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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

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### GRANT ACTIVITY

#### *Current Funding*

**NIH/NICHD, Research on biopsychosocial factors of social connectedness and isolation  
on health, wellbeing, illness, and recovery** 2021 Jun 1–2026 Jan 31

"Prenatal Social Connection and Disruption During the COVID-19 Pandemic: Effects on  
Maternal and Infant Health" (PI Saxbe, R01HD104801, \$2,079,921)

Role: Co-I

**NIH/NIAAA, Epidemiology and Prevention in Alcohol Research**

2021 May 1–2023 April 30

"Alcohol metabolism and disease risk in Asians: Examining the impact of personalized  
phenotypic/genotypic feedback and motivational processes on early drinking trajectories" (PI  
Luczak, R21AA028365, \$278,438)

Role: Co-I

<b>Spencer Foundation</b>	2021 Jan 1–2022 June 30
"The Impact of Ignoring Parameter Uncertainty on Sample-Size Planning for Cluster-Randomized and Multisite Randomized Trials" (PI Lai, \$49,796)	
<b>Department of Health and Human Services, Office of Population Affairs (Pregnancy Prevention Research Grants)</b>	2020 Sep 30–2021 Sep 29
"Secondary Data Analysis of Effective TPP Programs: Setting, Youth Context, and Characteristics" (PI Clark, PHEPA000003, \$2,200,490)	
Role: PI of Subcontract (\$66,049)	
<b>Department of Defense, Army Research Institute</b>	2020 Aug 7–2022 Aug 6
"Developing a Multidimensional Psychometric Framework on the Impact of Item Bias on Classification" (PI Lai, \$104,382)	
<b>National Institutes of Health, Promoting Research on Music and Health: Fundamentals and Applications (R21)</b>	2019 Sep 15–2021 Aug 31
"Music Training, Bilingualism and Executive Functioning" (PI Assal Habibi, 1R21NS114592-01, \$247,500)	
Role: Co-I	
<i>Prior Funding</i>	
<b>McRel International</b>	2018 Aug 1–2021 Jun 30
Evaluation of "Identity-Based Motivation Journey to Academic Success." (Original grant funded by Department of Education, Investing in Innovation Fund [i3] Development Grants, Co-PIs: Katie Anderson and Daphna Oyserman, Award No. U411C150011)	
Role: PI (External Evaluator; Subaward \$176,418)	
<b>National Science Foundation, Research on Learning in Formal and Informal Settings (1908630)</b>	2019 July 15–2020 July 14
"Developing and Validating Early Assessments of College Readiness: Differential Effects for Underrepresented Groups, Optimal Timing of Assessments, and STEM-specific Indicators" (PI: Gregory Palardy)	
Role: PI for subaward	Status: Funded (Subaward \$6,000)
<b>University Research Council</b>	
<b>AHSS Faculty Research and Scholarship Stipend Awards</b>	2017
University of Cincinnati	
"Impact of Measurement Bias on the Validity of Intervention Studies" (\$10,000)	
Role: PI	Status: Funded
<b>Vice President for Research Award</b>	2016–2018
University of Cincinnati, \$30,500	

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## PUBLICATIONS

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(\* indicates student author)

46. **Lai, M. H. C.** (accepted, 2021 June 3). Adjusting for measurement noninvariance with alignment optimization in growth modeling. *Multivariate Behavioral Research*. Manuscript accepted for publication.

45. **Lai, M. H. C.**, & \*Hsiao, Y.-Y. (accepted, 2021 April 12). Two-stage path analysis with definition variables. *Psychological Methods*. Manuscript accepted for publication.
44. **Lai, M. H. C.**, \*Liu, Y., & \*Tse, W. W. (accepted, 2021 February 5). Adjusting for partial invariance in latent parameter estimation: Comparing forward specification search and approximate invariance methods. *Behavior Research Methods*. Manuscript accepted for publication. <https://doi.org/10.3758/s13428-021-01560-2>
43. Guo, Y., Dynia, J. M., & **Lai, M. H. C.** (2021). Early childhood special education teachers' self-efficacy: Links to children's literacy learning. *Early Childhood Research Quarterly*, 54(1), 153–163. <https://doi.org/10.1016/j.ecresq.2020.09.002>
42. \*Hsiao, Y.-Y., Kwok, O., & **Lai, M. H. C.** (2021). Modeling measurement errors of the exogenous composites from congeneric measures in interaction models. *Structural Equation Modeling*, 28(2), 250–260. <https://doi.org/10.1080/10705511.2020.1782206>
41. Ji, Y.\*, Luo, W., **Lai, M. H. C.**, Yoon, M., Chen, L.-S., & Kwok. (2021). Model-selection-based approaches to identifying the optimal number of factors in multilevel exploratory factor analysis. *Structural Equation Modeling*. Advance online publication. <https://doi.org/10.1080/10705511.2021.1916394>
40. **Lai, M. H. C.** (2021). Composite reliability of multilevel data: It's about observed scores and construct meanings. *Psychological Methods*, 26(1), 90–102. <https://doi.org/10.1037/met0000287>
39. \*Tilley, J. L., Huey, S. J., Jr., Farver, J. M., **Lai, M. H. C.**, & \*Wang, C. X., & (2021). The immigrant paradox in the problem behaviors of youth in the United States: A meta-analysis. *Child Development*, 92(2), 502–516. <https://doi.org/10.1111/cdev.13542>
38. Zhao, A., Guo, Y., Sun, S., **Lai, M. H. C.**, Breit-Smith, A., & Li, M. (2021). The contributions of language skills and comprehension monitoring to Chinese reading comprehension: A longitudinal investigation. *Frontiers in Psychology*, 12. <https://doi.org/10.3389/fpsyg.2021.625555>
37. \*Atari, M., **Lai, M. H. C.**, & Dehghani, M. (2020). Sex differences in moral judgements across 67 countries. *Proceedings of the Royal Society B*, 287(1937). <https://doi.org/10.1098/rspb.2020.1201>
36. Bae, C., & **Lai, M. H. C.** (2020). Opportunities to participate in science learning and student engagement: A mixed methods approach to examining person and context factors. *Journal of Educational Psychology*, 112(6), 1128–1153. <https://doi.org/10.1037/edu0000410>
35. Li, N., Yong, J., Tsai, M.-H., **Lai, M. H. C.**, Lim, A. Y. Y., & Ackerman, J. M. (2020). Confidence is sexy and it can be trained: Examining male social confidence in initial, opposite-sex interactions. *Journal of Personality*, 88(6), 1235–1251. <https://doi.org/10.1111/jopy.12568>
34. **Lai, M. H. C.** (2020). Bootstrap confidence interval for multilevel standardized effect size. *Multivariate Behavioral Research*. Advance online publication. <https://doi.org/10.1080/00273171.2020.1746902>
33. Landmark, L. J., Ju, S., Greene, G., & **Lai, M. H. C.** (2020). Evaluating special educator and transition personnel knowledge and skills for working with diverse families and students during the transition process: Preliminary development and validation of an assessment instrument. *Journal of Vocational Rehabilitation*, 52, 317–331. <https://doi.org/10.3233/JVR-201080>

32. Wu, A. M. S., **Lai, M. H. C.**, Lau, J. T. F., & Walden, D. L. (2020). Incidence of probable depression and its predictors among Chinese secondary school students. *International Journal of Mental Health and Addiction*. Advance online publication. <https://doi.org/10.1007/s11469-020-00379-w>
31. **Lai, M. H. C.** (2019). The effect of omitting a crossed factor for balanced and unbalanced crossed-classified data. *Journal of Educational and Behavioral Statistics*, 48, 448–472. <https://doi.org/10.3102/1076998619843168>
30. **Lai, M. H. C.**, Richardson, G. B., & Mak, H. W. (2019). Quantifying the impact of partial measurement invariance for addiction research. *Addictive Behaviors*, 94, 50–56. <https://doi.org/10.1016/j.addbeh.2018.11.029>
29. Nation, D. A., \*Ho, J. K., Dutt, S., Han, S. D., & **Lai, M. H. C.** (2019). Neuropsychological decline improves prediction of dementia beyond AD biomarker and MCI diagnoses. *Journal of Alzheimer's Disease*, 69, 1171–1182. <https://doi.org/10.3233/JAD-180525>
28. \*Chen, C.-C., Richardson, G. B., **Lai, M. H. C.**, Dai, C.-L., & Hays, D. (2018). Development and cross-cultural validity of a Brief Measure of Separation-Individuation. *Journal of Child and Family Studies*, 27, 2797–2810. <https://doi.org/10.1007/s10826-018-1140-2>
27. Chio, F. H. N., **Lai, M. H. C.**, & Mak, W. W. S. (2018). Development of Nonattachment Scale—Short Form (NAS-SF) using item response theory. *Mindfulness*, 9, 1299–1308. <https://doi.org/10.1007/s12671-017-0874-z>
26. \*Hsiao, Y., & **Lai, M. H. C.** (2018). The impact of partial measurement invariance on testing moderation for single and multi-level data. *Frontiers in Psychology*, 9. <https://doi.org/10.3389/fpsyg.2018.00740>
25. \*Hsiao, Y., Kwok, O., & **Lai, M. H. C.** (2018). Evaluation of two methods for modeling measurement errors when testing interaction effects with observed composite scores. *Educational and Psychological Measurement*, 78, 181–202. <https://doi.org/10.1177/0013164416679877>
24. Kwok, O., **Lai, M. H. C.**, Tong, F., Lara-Alecio, R., Irby, B. J., Yoon, M., & Yeh, Y.-C. (2018). Analyzing complex longitudinal data in educational research: A demonstration with Project English Language and Literacy Acquisition (ELLA) data using xxM. *Frontiers in Psychology*, 9. <https://doi.org/10.3389/fpsyg.2018.00790>
23. **Lai, M. H. C.**, Kwok, O., \*Hsiao, Y., & Qian, C. (2018). Finite population correction for two-level hierarchical linear modeling. *Psychological Methods*, 23, 94–112. <https://doi.org/10.1037/met0000137>
22. Yoon, M., & **Lai, M. H. C.** (2018). Testing factorial invariance with unbalanced samples. *Structural Equation Modeling: A Multidisciplinary Journal*, 25, 201–213. <https://doi.org/10.1080/10705511.2017.1387859>
21. 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>
20. **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>

19. **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>
18. 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>
17. 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>
16. 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>
15. Kim, M., Kwok, O., Yoon, M., Willson, V. L., & **Lai, M. H. C.** (2016). Specification search for identifying the correct mean trajectory in polynomial latent growth models. *Journal of Experimental Education*, 84, 307–329. <https://doi.org/10.1080/00220973.2014.984831>
14. **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>
13. 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>
12. 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>
11. **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>
10. **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>
9. **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>
8. 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>
7. 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>

6. **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>
5. 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>
4. 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>
3. **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>
2. 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. 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>

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## 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.

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## CONFERENCE PRESENTATIONS

51. \*Zhang, G., \*Yue, H., & **Lai, M. H. C.** (2021, July 19-23). *A systematic review of measurement invariance research of the CES-D across gender* [Poster presentation]. Virtual conference of the Psychometric Society (IMPS) due to covid-19. [https://www.psychometricsociety.org/sites/main/files/file-attachments/imps\\_2021\\_virtual\\_schedule.pdf](https://www.psychometricsociety.org/sites/main/files/file-attachments/imps_2021_virtual_schedule.pdf)
50. \*Zhang, Y. & **Lai, M. H. C.** (2021, July 19-23). *Classification Accuracy of multidimensional tests: Quantifying the impact of noninvariance* [Oral presentation]. Virtual conference of the Psychometric Society (IMPS) due to covid-19. [https://www.psychometricsociety.org/sites/main/files/file-attachments/imps\\_2021\\_virtual\\_schedule.pdf](https://www.psychometricsociety.org/sites/main/files/file-attachments/imps_2021_virtual_schedule.pdf)
49. \*Tse, W. W. & **Lai, M. H. C.** (2021, July 19-23). *Incorporating uncertainty in design parameters: A hybrid classical-Bayesian power analysis approach for two-level cluster randomized trials* [Oral presentation]. Virtual conference of the Psychometric Society (IMPS) due to covid-19. [https://www.psychometricsociety.org/sites/main/files/file-attachments/imps\\_2021\\_virtual\\_schedule.pdf](https://www.psychometricsociety.org/sites/main/files/file-attachments/imps_2021_virtual_schedule.pdf)

48. **Lai, M. H. C.**, Ji, F., & Chen, S. (2021, July 19-23). *Obtaining reliability for daily diary data using multilevel factor analysis* [Oral presentation]. Virtual conference of the Psychometric Society (IMPS) due to covid-19. [https://www.psychometricsociety.org/sites/main/files/file-attachments/imps\\_2021\\_virtual\\_schedule.pdf](https://www.psychometricsociety.org/sites/main/files/file-attachments/imps_2021_virtual_schedule.pdf)
47. Lopez, N. V., **Lai, M. H. C.**, Yang C.-H., Dunton G. F., Belcher B. R. (2021, April 12-16). *Associations of maternal and paternal parenting practices with children's fruit/vegetable intake and physical activity* [oral presentation/research talk]. Society of Behavioral Medicine 2021. Virtual conference due to covid-19.
46. \*Hsiao, Y., Kwok, O., & **Lai, M. H. C.** (2021, April 8-12). *Improving estimation accuracy of the interaction effects in models with composite scores* [Structured poster session]. AERA Annual Meeting, Orlando, FL, United States. <https://convention2.allacademic.com/one/aera/aera21>
45. **Lai, M. H. C.** & \*Hsiao, Y. (2021, April 8-12). *Two-stage path analysis with definition variables: A general framework for modeling with categorical indicators* [Structured poster session]. AERA Annual Meeting, Orlando, FL, United States. <https://convention2.allacademic.com/one/aera/aera21>
44. Wen, L., & **Lai, M. H. C.** (2021, April 8-12). *A multilevel weighted bootstrap procedure to handle sampling weights* [Paper session]. AERA Annual Meeting, Orlando, FL, United States. <https://convention2.allacademic.com/one/aera/aera21>
43. **Lai, M. H. C.** (2020, July 14-17). *Multilevel bootstrap confidence intervals for standardized effect size* [Paper session]. Annual Meeting of the Psychometric Society (IMPS), College Park, MD, United States. [https://www.psychometricsociety.org/sites/main/files/file-attachments/imps\\_2020\\_virtual\\_schedule\\_g1.pdf](https://www.psychometricsociety.org/sites/main/files/file-attachments/imps_2020_virtual_schedule_g1.pdf)
42. \*Tse, W. W. & **Lai, M. H. C.** (2020, July 14-17). *Measurement invariance for ordered categorical variables: The necessity of strict invariance for valid group comparisons* [Poster session]. Annual Meeting of the Psychometric Society (IMPS), College Park, MD, United States. [https://www.psychometricsociety.org/sites/main/files/file-attachments/imps\\_2020\\_virtual\\_schedule\\_g1.pdf](https://www.psychometricsociety.org/sites/main/files/file-attachments/imps_2020_virtual_schedule_g1.pdf)
41. \*Zhang, Y. & **Lai, M. H. C.** (2020, July 14-17). *A Bayesian framework for establishing measurement invariance for observed test scores* [Poster session]. Annual Meeting of the Psychometric Society (IMPS), College Park, MD, United States. [https://www.psychometricsociety.org/sites/main/files/file-attachments/imps\\_2020\\_virtual\\_schedule\\_g1.pdf](https://www.psychometricsociety.org/sites/main/files/file-attachments/imps_2020_virtual_schedule_g1.pdf)
40. \*Tse, W. W. & **Lai, M. H. C.** (2020, June 25-26). *Measurement invariance for ordered categorical variables: The necessity of strict invariance for valid group comparisons* [Conference Session]. A Meeting of Methodologies (AMOM), Vancouver, BC, Canada. [http://www.sfu.ca/content/dam/sfu/psychology/research/mml/AMOM\\_2020\\_program.pdf](http://www.sfu.ca/content/dam/sfu/psychology/research/mml/AMOM_2020_program.pdf)
39. **Lai, M. H. C.** (2020, June). *Constructing bootstrap confidence intervals for standardized effect size in cluster-randomized trials* [Poster session]. Modern Modeling Methods Conference, Storrs, CT. [https://modeling.uconn.edu/wp-content/uploads/sites/1188/2020/02/M3\\_2020\\_Preliminary\\_Schedule.pdf](https://modeling.uconn.edu/wp-content/uploads/sites/1188/2020/02/M3_2020_Preliminary_Schedule.pdf) (Conference canceled)

38. \*Tse, W. W., & **Lai, M. H. C.** (2020, June). *Path to valid means comparisons: The necessity of strict measurement invariance for ordered categorical variables* [Paper session]. Modern Modeling Methods Conference, Storrs, CT, United States. (Conference canceled)
37. \*Zhang, Y., & **Lai, M. H. C.** (2020, June). *A Bayesian framework for establishing measurement invariance for observed test scores* [Poster session]. Modern Modeling Methods Conference, Storrs, CT, United States. (Conference canceled)
36. \*Liu, Y., **Lai, M. H. C.**, & Kelcey, B. (2020, April 17 - 21). *Comparing multiple indicators multiple causes (MIMIC) and alignment method for investigating measurement invariance with respect to a continuous variable* [Paper Session]. AERA Annual Meeting San Francisco, CA, United States. <http://tinyurl.com/u5mhnmn> (Conference Canceled)
35. \*Gold, A.I., **Lai, M. H. C.**, \*Tureson, K., & Thames, A.D. (2020, February). *Analysis of educational bias of the Montreal Cognitive Assessment (MoCA) using differential item functioning* [Conference presentation]. Annual meeting of the International Neuropsychological Society, Denver, CO, United States. <https://www.the-ins.org/meetings/denver2020/>
34. Hsiao, Y., Kwok, O., & **Lai, M. H. C.** (2019, April). *Comparisons of reliability estimates for correcting measurement errors of the exogenous composites in interaction models*. Paper presented at the annual meeting of the American Educational Research Association, Toronto, ON.
33. Wu, A. M. S., **Lai, M. H. C.**, Yogo, M., & Yu, S. (2018, Nov). Being mindful or flexible? Investigation of associated factors with problematic online gaming among Asian university students. Paper presented at the International Congress of Behavioral Medicine, Santiago, Chile.
32. \*Liu, Y, & **Lai, M. H. C.** (2018, July). *Examining Bayesian approaches for investigating measurement invariance across two groups*. Poster presented at the annual meeting of the Psychometric Society, New York, NY.
31. Atari, M., Dehghani, M., Lai, M. H. C., & Graham, J. (2018, May). *Sex Differences in Moral Foundations: Evidence from 67 Countries*. Poster presented at the Association for Psychological Science Annual Convention, San Francisco, CA.
30. Kwok, O., **Lai, M. H. C.**, Tong, F., Lara-Alecio, R., Irby, B. J., Yoon, M., & Yeh, Y. (2018, April). *Analyzing complex longitudinal data in educational research: A demonstration with the project English language and literacy acquisition (ELLA) data using xxM*. Paper presented at the annual meeting of the American Educational Research Association, New York, NY.
29. **Lai, M. H. C.** (2018, April). *Confidence interval for standardized effect size in cluster-randomized trials: Comparing analytic and bootstrap methods*. Paper presented at the annual meeting of the American Educational Research Association, New York, NY.
28. **Lai, M. H. C.** & Kwok, O. (2018, March). *Growth models for time-varying cumulative classroom/teacher effects*. Paper presented at the Texas Universities' Educational Statistics and Psychometrics Meeting, College Station, TX.
27. **Lai, M. H. C.** & Kwok, O. (2018, March). *A Model for Time-Varying Cumulative Classroom/Teacher Effects on Students' Growth*. Paper presented at the Spring Conference of the Society for Research on Educational Effectiveness, Washington, DC.



26. Wu, A. M. S., Lai, M. H. C., & Yu, S. (2017, September). *Psychological need satisfaction, gaming motives, and Internet gaming disorder*. Paper presented at the 31st Conference of the European Health Psychology Society, Padova, Italy.
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.

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## INVITED PRESENTATIONS

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### Advancing Quantitative Science with Monte Carlo Simulation

Simulation Summer School, Psychology Postgraduate Affairs Group, the British Psychological Society  
2021 June

### Reliability of Composite Scores With Multilevel Data

Fordham University, NY	2021 May
<b>Internal Consistency of Multilevel Data: Cluster Means, Centering, and Construct Meanings</b>	
Arizona State University, AZ	2020 Nov
<b>Measurement Invariance Does Not Hold. Then What?</b>	
University of California at Davis, CA	2020 Mar
<b>Advancing Quantitative Science with Monte Carlo Simulation</b>	
Texas A&M University, TX	2019 May
<b>Using multilevel modeling with R</b>	
University of Macau, Macau SAR	2018 Dec
<b>Multilevel modeling: Introduction and recent advances for behavioral research,</b>	
University of Macau, Macau SAR	2018 Dec
<b>Introduction to Bayesian data analysis,</b>	
Texas A&M University, TX	2017 May
<b>Practical understanding on application of structural equation modeling,</b>	
City University of Hong Kong, Hong Kong	2016 Jun
● A 2.5-hour workshop invited by the Hong Kong Society of Behavioral Health	

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## DEPARTMENTAL TALKS

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<b>Can we trust test scores? A methodological discussion on the impact of measurement invariance</b>	2017 Nov
● Presentation at Power Friday, University of Cincinnati, OH	
<b>Standardized mean difference in partially nested data</b>	2016 Nov
● Presentation at the Data Analytics Showcase & Networking Event, University of Cincinnati, OH	
<b>Quantitative methods for interdisciplinary research</b>	2016 April
● Presentation at the Best Practices in Research Meeting, University of Cincinnati, OH	
<b>Standardized mean difference in partially nested data</b>	2015 Oct
● Research presentation at the Quantitative and Mixed Methods Research Methodologies (QMRM) Brown Bag, University of Cincinnati, OH	
<b>Doing Monte Carlo simulation studies with Mplus</b>	2013 Jan & 2014 Jan
● Presentation at Texas A&M University, TX	

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## HONORS AND AWARDS

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<b>Outstanding Reviewer</b>	2020
Journal of Educational and Behavioral Statistics	
<b>American Educational Research Association, Division D</b>	2019
Nominated for Early Career Award	
<b>Distinguished Honor Graduate</b>	2015
College of Education and Human Development, Texas A&M University	
<b>Travel Award to present at the Conference "Advances in Multilevel Modeling for Educational Research" at University of Maryland</b>	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

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## TEACHING EXPERIENCE

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**University of Southern California**, Los Angeles, CA

*Instructor*

PSYC 314L – Experimental Research Methods (Evaluation: 3.45 / 4)

PSYC 621L – Seminar in Quantitative Psychology (Multilevel Modeling) (Evaluation: 3.93 / 4)

PSYC 621L – Seminar in Quantitative Psychology (Bayesian Data Analysis) (Evaluation: 3.84 / 4)

PSYC 575L – Multilevel Modeling (Evaluation: 3.93 / 4)

**University of Cincinnati**, Cincinnati, OH

*Instructor* (Instructor evaluation: 4.61 / 5)

EDST 8087 – Multilevel Models for Educational Studies

EDST 8075 – Bayesian Data Analysis

EDST 7082 – Getting Started With Multilevel Modeling

EDST 7011 – Statistical Data Analysis II

EDST 7010 – Statistical Data Analysis I

**Texas A&M University**, College Station, TX

*Teaching Assistant*

EPSY 635 - Educational Statistics (Online)

EPSY 651 - Theory of Structural Equation Modeling

● Teaching Evaluation: 4.83 / 5.00

EPSY 652 - Hierarchical Linear Modeling

EPSY 653 - Advanced Structural Equation Modeling

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## MENTORING EXPERIENCE

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*Current Ph.D. Students, Committee Chair*

Liu, Yuanfang, University of Cincinnati

Tse, Wing Yee (Winnie), University of Southern California

Zhang, Yichi, University of Southern California

Zhang, Gengrui (Jimmy), University of Southern California

*Current Ph.D. Students, Committee Member*

Atari, Mohammad, University of Southern California

Bello, Mariel, University of Southern California

Byrd, Katie, University of Southern California

Christie, Nina, University of Southern California

Gold, Alaina, University of Southern California

Jhaveri, Nina, University of Southern California

Kennedy, Branden, University of Southern California

Khaled, Mona, University of Southern California

Lai, Xu, University of Southern California

O'Donnell, S. Casey, University of Southern California

Zhang, Lin (Lynn), University of Southern California

*Past Ph.D. Students, Committee Chair (Initial job placement)*

Sunny, Cijy, University of Cincinnati (Lecturer [equivalent to Assistant Professor in US],  
Murdoch University, Murdoch, Western Australia)

*Past Ph.D. Students, Committee Member*

Chen, Ching-Chen, University of Cincinnati

Ho, Jean, University of Southern California

Hoover, Joe, University of Southern California

Hsiao, Yu-Yu, Texas A&M University

Ji, Yuhong, Texas A&M University

Zhao, Mengtian (Jessica), University of Southern California

*Past Master Students, Committee Member*

McGee, Nathan, University of Cincinnati

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## COMPUTER SKILLS

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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, Julia, LaTeX, Linux, Markdown, Mathematica,  
Octave, Python, SQL, TeleForm, Visual Basic

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## PROFESSIONAL SERVICE

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*Editorial Board/Consulting Editor*

Behavior Research Methods

2020–Present

*Ad Hoc Reviewer*

Alcohol and Alcoholism

Asian American Journal of Psychology

Assessment

Behavior Research Methods

Educational and Psychological Measurement

Evaluation Review

Evolutionary Psychology

Frontiers in Psychology

Journal of Consulting and Clinical Psychology

Journal of Educational and Behavioral Statistics

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

Research Synthesis Methods

Reviews of Educational Research

School Psychology Review

Sociological Methods & Research

Structural Equation Modeling: A Multidisciplinary Journal

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## **PROFESSIONAL MEMBERSHIPS**

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American Educational Research Association (Member; Chair for the multilevel SIG for 2020/2021)

American Psychological Association Division 5 (Member)

American Statistical Association (Member)

Hong Kong Society of Behavioral Health (Advisor, Methodology Advisor Group)

Psychometric Society (Member)

Society for Research in Educational Effectiveness (Member)