



# Sooyong Lee, Ph.D.

Psychometrician

WIDA

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## PROFESSIONAL SUMMARY

As a psychometrician, I specialize in applying contemporary statistical theories and techniques to my work. My research interests center around developing and utilizing statistical models, including structural equation modeling (SEM), multilevel modeling (MLM), item response theory (IRT), and mixture modeling. In my recent work, I have placed particular emphasis on Bayesian estimation as a means of modeling the relationships between variables.

## EDUCATION

- 2017-2023** Ph.D., Major in Quantitative Methods in Educational Psychology  
The University of Texas at Austin, Austin, Texas  
- Dissertation: Development of a Method for Addressing Various Censoring Effects in a Latent Growth Curve Modeling Framework. Advisor: Tiffany Whittaker
- 2014-2017** M.A., Major in Educational Statistics and Measurement  
Korea University, Seoul, Republic of Korea  
- Thesis: Exploration of LCA conditions in Latent Class with Low Proportion. Advisor: Sehee Hong
- 2007-2014** B.A. Major in International Studies  
Hanyang University, Seoul, Republic of Korea  
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## PUBLICATIONS

### In preparation

- Jiwon Kim, Suyoung Kim, **Sooyong Lee**, & Brian Keller (2024). Comparing Blimp vs. Mplus for Bayesian Multi-level Structural Equation Modeling with random slopes. In preparation.
- Kahyun Lee, **Sooyong Lee**, & Allison Master (2024). From Fixed to Growth: An Intensive Longitudinal Study of the Interplay Between Growth Mindset, Emotions, Sense of Belonging, and Experiences in Daily Life Among College Students. In preparation.
- **Sooyong Lee** & Cory L. Cobb (2024). Investigating the Efficacy of Plausible Classes Derived from Mixture Modeling for Secondary Analysis. In preparation.
- **Sooyong Lee** & Kyungsun Bisop (2024). Enhancing Special Education Assessment: Censored Confirmatory Factor Analysis for Non-Normal Likert-Type Data in Language Proficiency Tests. In preparation.
- **Sooyong Lee** & Seung W. Choi (2024). A Comparative Study of Bayesian and Maximum-Likelihood Moderated Nonlinear Factor Analysis for Graded Response Data. In preparation.
- **Sooyong Lee** & Soyoung Kim (2024). Comparing Approaches to Moderated Mediation in Multilevel Structural Equation Modeling. In preparation.

2024

- Gianopoulos, G., Lee, J., Lim, S., Niu, L., **Sooyong Lee**, & Choi, S. W. (2024). The impact of item pool size and item pool distribution on student ability estimates for a hybrid interim-summative CAT. *Journal of Computerized Adaptive Testing*. In print.
- **Sooyong Lee**, Adam Sales, Hyeon-Ah Kang, & Tiffany A. Whittaker (2024). Model Estimation Approaches for Fully-latent Principal Stratification with Small Samples. *Structural Equation Modeling: A Multidisciplinary Journal*. DOI:https://doi.org/10.1080/10705511.2024.2402331. In print.
- **Sooyong Lee**, Adam Sales, Hyeon-Ah Kang, & Tiffany A. Whittaker (2024). Fully Latent Principal Stratification With Measurement Models. *Journal of Educational and Behavioral Statistics*. Under review.
- Rene M. Dailey, ..., & **Sooyong Lee** (2024). Testing A Comprehensive Model of Post-Dissolution Distress: Predicting Initial and Over Time Changes in Distress Following Romantic Dissolution among U.S. Adults. *Journal of Social and Personal Relationships*. Under review.
- **Sooyong Lee** & Tiffany A. Whittaker (2024). Development of a Method for Addressing Doubly-Censored Effects in a Latent Growth Curve Modeling Framework. *Multivariate Behavioral Research*. Under review.
- **Sooyong Lee**, Kahyun Lee, & Hanjo Kim (2024). Mediation Analysis with an Event-history Mediator: A Simulation Study and Empirical Data Illustration. *Psychological Methods*. Under review.
- **Sooyong Lee**, Kahyun Lee, & Kejin Lee (2024). Discrete-time Survival Analysis Incorporating Time Structure in Developmental Research. *Structural Equation Modeling: A Multidisciplinary Journal*. Under review.
- **Sooyong Lee**, Suhwa Han, & Seung W. Choi (2024). A Bayesian Moderated Nonlinear Factor Analysis Approach for DIF Detection under Violation of the Equal Variance Assumption. *Journal of Educational Measurement*. 62(2), 303-324. DOI:https://doi.org/10.1111/jedm.12388.
- Suyoung Kim, **Sooyong Lee**, Jiwon Kim, & Tiffany A. Whittaker (2024). Investigating Latent Interaction Effects in Multiple-Group Analysis in the Structural Equation Modeling Framework. *Structural Equation Modeling: A Multidisciplinary Journal*. p. 1-13. DOI:https://doi.org/10.1080/10705511.2024.2363827.

## 2023

- Jonghwan Lee, Christina Schneider, Garron Gianopoulos, Luping Niu, **Sooyong Lee**, Sangdon Lim, & Seung W Choi (2023). The Impact of Item Bank Transition Rules on Student Ability Estimates and Achievement Level Classifications. *Journal of Computerized Adaptive Testing*. In print.
- **Sooyong Lee** & Tiffany A. Whittaker (2023). Parallel Process Latent Growth Modeling with Multivariate Confounders/Suppressors. *Structural Equation Modeling: A Multidisciplinary Journal*. 30(2), 284-295. DOI:10.1080/10705511.2022.2133774.
- **Sooyong Lee**, Kahyun Lee, & Tiffany A. Whittaker (2023). Application of Associative Discrete-Time Survival Analysis Using Latent Transition Specification. *Structural Equation Modeling: A Multidisciplinary Journal*. 1-12. DOI:10.1080/10705511.2022.2138892.
- **Sooyong Lee**, Adam Sales, Hyeon-Ah Kang, & Tiffany A. Whittaker (2023). Fully Latent Principal Stratification: Combining PS with Model-Based Measurement Models.. *The Annual Meeting of the Psychometric Society*. pp. 287-298. DOI:https://doi.org/10.1007/978-3-031-27781-8.

## 2022

- Seung Choi, Sangdon Lim, Luping Niu, **Sooyong Lee**, Christina M. Schneider, Jay Lee, & Garron J. (2022). maat: An R Package for Multiple Administrations Adaptive Testing. *Applied Psychological Measurement*. 46-1, 73-74. DOI:10.1177/01466216211049212.
- **Sooyong Lee**, Suhwa Han, & Seung W. Choi (2022). DIF Detection With Zero-Inflation Under the Factor Mixture Modeling Framework. *Educational and Psychological Measurement*. 82-4, 678-704. DOI:10.1177/00131644211028995.
- **Sooyong Lee** & Tiffany A. Whittaker (2022). Comparison of Three Approaches to Class Enumeration in Growth Mixture Modeling when Time Structures are Variant Across Latent Classes. *Structural Equation Modeling: A Multidisciplinary Journal*. 29, 23-35. DOI:10.1080/10705511.2021.1956320.

## 2021

- Cory L. Cobb, Charles R. Martínez, Jr., **Sooyong Lee**, Tae Kyoung Lee, & Elma I. Lorenzo-Blanco (2021). Acculturation trajectories differ by youth age at arrival and time in residency among Latino immigrant families in a US emerging immigrant context. *International Journal of Intercultural Relations*. 81, 79-93. DOI:10.1016/j.ijintrel.2021.01.005.

**2020 and earlier**

- **Sooyong Lee**, Eun Soo Lee, & Sehee Hong (2016). Effects of adolescent's career development on labor market outcomes: Applying the two-part growth mixture model. *Journal of Vocational Education & Training*. 19(3), 137-162.
- Eun Soo Lee, **Sooyong Lee**, & Sehee Hong (2016). The Effects of Community Child-Center Service on School Adjustment Change Trajectory. *Korean Journal of Social Welfare Research*. 50, 59-85.

## NATIONAL AND INTERNATIONAL PRESENTATIONS

### Presentations

1. Syed Abdul Hadi, Kei Bishop, Hacer Karamese, & **Sooyong Lee** (2024-09). Automated Essay Scoring: Syntactic and Semantic Feature Engineering for Interpretable and Content Aware System. International Association for Computerized Adaptive Testing (IACAT), Seoul, South Korea.
2. Kei Bishop, Hacer Karamese, **Sooyong Lee**, & Syed Abdul Hadi (2024-09). Comparing Vertical Scaling Methods in Multistage Adaptive Testing using Simulation and Operational Data on WIDA's Language Assessments. International Association for Computerized Adaptive Testing (IACAT), Seoul, South Korea.
3. **Sooyong Lee**, Adam Sales, Hyeon-Ah Kang, & Tiffany A. Whittaker (2024-04). Multidimensional Fully Latent Principal Stratification. American Educational Research Association (AERA), Philadelphia, USA.
4. Tiffany Whittaker, Hyeon-Ah Kang, **Sooyong Lee**, Adam Sales (2023-04). Bayesian and Maximum Likelihood Estimation in Fully Latent Principal Stratification. National Council on Measurement in Education (NCME), Chicago, USA.
5. **Sooyong Lee**, Adam Sales, Hyeon-Ah Kang, & Tiffany A. Whittaker (2022-07). Fully-Latent Principal Stratification. International Meeting of the Psychometric Society (IMPS), Bologna, Italy.
6. Garron Gianopulos, Jay Lee, Sangdon Lim, Luping Niu, **Sooyong Lee**, & Seung W. Choi (2022-04). The Impact of Item Pool Size and Item Pool Distribution on Student Ability Estimates for a Hybrid Interim-Summative CAT. National Council on Measurement in Education (NCME), San Diego, USA.
7. Jay Lee, M. Christina Schneider, Garron Gia, Luping Niu, **Sooyong Lee**, Sangdon Lim, & Seung W. Choi (2022-04). The Impact of item bank transition rules on student ability estimates and achievement level classifications. National Council on Measurement in Education (NCME), San Diego, USA.
8. Daniel Lewis & **Sooyong Lee** (2021-04). A Comparison of Two ESS Cut Score Estimation Algorithms. National Council on Measurement in Education (NCME), Baltimore, MD, USA.

### Posters

1. **Sooyong Lee**, Kahyun Lee, & Allison Master (2024-04). Exploring the dynamics of daily experiences, emotions, and depression among Asian American students: The moderating role of growth mindsets.. American Educational Research Association (AERA), Philadelphia, USA.
2. **Sooyong Lee**, Suhwa Han, & Seung W. Choi (2021-04). DIF Detection with Zero-Inflation under the Mixture Modeling Framework. American Educational Research Association (AERA), Virtual.

3. **Sooyong Lee** & Suhwa Han (2020-07). Item selection and trait estimation methods in CAT with item leakage. International Meeting of the Psychometric Society (IMPS), Maryland, USA.
4. **Sooyong Lee** & Tiffany A. Whittaker (2020-04). Comparison of Three Approaches to Class Enumeration in Growth Mixture Modeling when Time Structures are Variant Across Latent Classes. American Educational Research Association (AERA), Virtual.
5. **Sooyong Lee** & Sehee Hong (2018-07). Exploration of LCA conditions in Latent Class with Low Proportion. International Meeting of the Psychometric Society (IMPS), New York, USA.
6. Kejin Lee, **Sooyong Lee**, & Youngri Lee (2018-05). An Alternative Approach to Discrete-Time Survival Analysis for Meaningful Interpretation. Modern Modeling Methods conference (MMM), Connecticut, USA.

## RESEARCH

Psychometrician	WIDA - Psychometrics for K-12 students Language tests	2024/4-present
Post-doc Fellow	FLPS project - Development of ‘flps’ package for Fully-latent Principal Stratification	2023/9-2024/3
Research Assistant	FLPS project - Development of ‘flps’ package for Fully-latent Principal Stratification	2021/9-2023/8
Intern	Embedded Standard Setting (ESS) - Internship for developing ESS package for Embedded Standard Setting	2021/6-2021/8
Intern	Embedded Standard Setting (ESS) - Internship for developing Shiny app for Embedded Standard Setting	2020/6-2020/8
Research Assistant	‘maat’ package development project - Development of MAAT package for Computerized Adaptive Testing for North-west Evaluation Association (NWEA)	2019/9-2020/5
Research Assistant	Survey of COE Full-Time Tenured and Tenure-Track Faculty - Data analysis for surveys of graduate programs of education at the University of Texas at Austin	2019/9-2019/12
Research Assistant	President’s Award for Global Learning (PAGL) - Designing a culturally appropriate mobile application to increase mental health literacy and self-care habits among South Korean young adults	2019/1-2019/8
Research Assistant	CGS PhD Career Pathways project - Data analysis for surveys to collect data on the career pathways of past and present STEM and humanities PhD students.	2018/9-2019/5

## TEACHING

### Teaching Assistant

University of Texas at Austin

EDP 380C: Structural Equation Modeling  
Professor Tiffany Whittaker

2021/1-2021/5

## PROGRAMS

R package	GRshiny package <a href="https://sooyongl.github.io/GRShiny/">https://sooyongl.github.io/GRShiny/</a>	2023
R package	clavaan package <a href="https://github.com/sooyongl/clavaan">https://github.com/sooyongl/clavaan</a>	2023
Shiny application	GRshiny: Graded response model <a href="https://sooyonglee.shinyapps.io/GRShiny/">https://sooyonglee.shinyapps.io/GRShiny/</a>	2022
R package	Embeded Standard Setting <a href="https://sooyongl.github.io/EmStanS/">https://sooyongl.github.io/EmStanS/</a>	2022
R package	maat package <a href="https://choi-phd.github.io/maat/">https://choi-phd.github.io/maat/</a>	2022
R package	flps package <a href="https://cran.r-project.org/web/packages/flps/index.html">https://cran.r-project.org/web/packages/flps/index.html</a>	2022
Shiny application	Embeded Standard Setting	2021

## SERVICE

<b>Invited Reviewer</b>	Structural Equation Modeling: A Multidisciplinary Journal	2024
<b>Invited Reviewer</b>	Qeios	2024
<b>Reviewer</b>	International Journal of Intercultural Relations	2023/7 - present