

SELENE SUNMIN LEE

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Professional experience

Educational Testing Service (ETS) - International Assessments Team

Measurement Scientist, May 2022 - *present*

Associate Research Scientist, June 2019 – May 2022

- Independently conducted psychometric and statistical analyses on the following assessments
 - PISA 2022 Field Trial – Background Questionnaire (208 scales, 81 countries): IRT scaling and differential item functioning analysis, in-depth analyses of different versions of the HOMEPOS scale, dimensionality analyses for 16 constructs, review of items in the Big five Inventory
 - PISA 2018 – National options samples (4 domains, 16 groups): IRT scaling and differential item functioning analysis
 - PISA 2018 – Reading (245 items, 70 countries): Computation of the equated P+ as well as the standard errors
 - PISA for Development – Stand C (2 domains, 5 countries): IRT scaling and differential item functioning analysis; analyses of the data yield, position effects, and response time distribution; presentation of the major findings at a PISA TAG meeting
 - PIAAC Cycle 2 Field Trial – Skill use scales (11 scales, 26 countries): IRT scaling and differential item functioning analysis
- Took the lead in writing sections of the following reports
 - PISA for Development – Strand C (Chapters 10 and 13)
 - PIAAC Cycle 2 Field Trial – Background Questionnaire Extended Summary Report (sections on the skill use scales)
- Mentored a NAEP SURE intern (2021 Summer)
 - Project: Accuracy of regression-based imputation of SES components in PISA 2018
- Served as a reviewer for the ETS Research & Development technical review

United Nations Children’s Fund (UNICEF) - Nepal Country Office

Education Officer, March 2013 - March 2014

- Analyzed educational data collected by the Ministry of Education and the District Administration Office of UNICEF’s 15 target districts
 - Produced tables and figures of educational statistics (e.g., gross enrollment rate, net enrollment rate, girl-to-boy ratio, student-teacher ratio, repetition rate, and dropout rate), disaggregating the results by gender, district, and school level
 - Supported colleagues in analyzing data for various presentations, reports, and planning documents
- Conducted research on out-of-school adolescents in Nepal using data from the Nepal Living Standards Survey 2010-2011
 - Produced descriptive statistics of out-of-school adolescents, disaggregating the results by background characteristics (e.g., gender, ethnicity, religion, mother tongue, disability, urbanicity)
 - Analyzed the association between adolescents’ background characteristics and the probability of being out-of-school using logistic regression
 - Prepared a report with policy recommendations on reducing school dropout among adolescents
- Managed projects to increase the school enrollment rate among adolescent girls from marginalized communities
 - Supervised the implementation of school-based activities (e.g., girls’ sports clubs and homework clubs, child clubs, peer-led life skills sessions) to increase adolescent girls’ self-esteem and engagement in school, targeting 700 girls in two districts
 - Organized trainings on menstrual hygiene management to increase school attendance and prevent dropout among adolescent girls, reaching 1,600 girls in four districts
 - Supported 140 community youth volunteers to conduct regular home visits and school visits to increase adolescent girls’ school enrollment and attendance in two districts
- Liaised with donors to raise funds for UNICEF’s education programs in Nepal
 - Secured a grant of \$200,000 from the Korean Committee for UNICEF

**United Nations Children's Fund (UNICEF) - Regional Office for South Asia
Social Policy Officer, March 2012 - March 2013**

- Conducted research on social and economic issues affecting children in South Asia
 - Wrote two reports on urbanization and migration in South Asia, in cooperation with other UN agencies in the region
 - Supervised the publication of three reports on early childhood development, adolescents, and urbanization, in preparation for the 2013 High Level Meeting on Cooperation for Child Rights in the Asia-Pacific Region
 - Managed the peer review process of six papers on decentralization and equity for child rights in South Asia
- Provided technical assistance to the Social Policy team of eight UNICEF country offices in South Asia
 - Gave constructive feedback on country offices' annual work plans, annual reports, and other research papers on various topics (e.g., social protection, child well-being, child grants, out-of-school children, disability, decentralization)
 - Provided technical assistance to the Bhutan Country Office on integrating child-friendly budgeting into gender-responsive budgeting in the 11th Five Year Plan of the Government of Bhutan
 - Supported the establishment of a master's program in social policy at the Maldives National University
 - Conducted a training on targeting and conditionality of social protection programs to 30 newly appointed District Social Protection Officers in Nepal

**United Nations Volunteers Program (UNV) - Mongolia Country Office
Program Officer, September 2010 - September 2011**

- Supported the establishment of a legislation to promote volunteerism and civic participation
 - Provided technical assistance for a comprehensive study on volunteerism in Mongolia
 - Participated in regular meetings with the Network of Volunteer Organizations led by the Advisor to the President of Mongolia on Civic Participation and Human Rights
- Established a network of volunteer organizations in Mongolia comprised of five international and three national volunteer organizations
 - Led regular meetings to coordinate volunteer activities and advocate for volunteerism
 - Organized events to celebrate the 10th Anniversary of the International Year of Volunteers
- Encouraged UN agencies to integrate volunteerism into their projects and long-term plans
- Managed the recruitment and onboarding process of one UN Volunteer; provided ongoing administrative support to three UN Volunteers

**Korea International Cooperation Agency (KOICA) - Office of Policy Planning and Research
English Editor, December 2006 - December 2007**

- Translated and edited documents produced by KOICA HQ and 31 country offices on the Korean Government's official development assistance policies and projects
- Managed and reviewed the translation of the 2007 KOICA Annual Report in English
- Supported the production of KOICA's publicity film in English
- Regularly updated KOICA's official English website
- Provided administrative support to host the 2007 Official Development Assistance International Conference (attended by 23 international development experts from around the world)

**Awards &
Fellowships**

PAR Quarterly Innovation and Efficiency Award – Second runner up, Educational Testing Service (ETS), January 2022

- Award for a project that provides an innovative solution to improve the efficiency and quality of operational work at ETS
- Project: R-code to automatically conduct scaling & summarize results of the PISA and PIAAC background questionnaires

Operational Excellence Award (team award), Educational Testing Service (ETS), February 2020

- Award for team that exceeded expectations on an operational project completed for an ETS client
- Project: Scaling and population modeling of PISA 2018 data (for OECD)

Distinction on PhD Dissertation, University of Pennsylvania, March 2019

- Award for excellent written dissertation and oral defense of PhD dissertation
- Dissertation title: Longitudinal and Cross-Country Measurement Invariance of the PISA Home Possessions Scale

Education Research and Evaluation Scholar Award, Pennsylvania Department of Education, September 2018

- Competitive research grant awarded to 10 graduate students and university faculty members to conduct research on a topic aligned with the Pennsylvania Department of Education's research agenda
- Research topic: Attrition of newly recruited K-12 teachers in Pennsylvania
- Co-principal investigator with Dr. Robert Boruch
- Research team: Claire Allen-Platt (PhD student), Sangbaek Park (Visiting scholar), Jimin Oh (PhD student)
- Award amount: \$3,000

Dean's Fellowship, University of Pennsylvania, Graduate School of Education, September 2015

- Full scholarship and living stipend to pursue PhD studies at University of Pennsylvania's Graduate School of Education for four years (September 2015 - May 2019)
- Award amount: \$250,000

Junior Professional Officer Fellowship, Korean Ministry of Foreign Affairs, July 2011

- Fellowship to work as a P-2 level staff at a UN agency for two years
 - 15 Korean citizens selected in 2011
- Sponsored positions
 - Education Officer, UNICEF Nepal Office (March 2013 - March 2014)
 - Social Policy Officer, UNICEF Regional Office for South Asia (March 2012 - March 2013)
- Award amount: \$250,000

Samsung Scholarship, Samsung Foundation, November 2007

- Full scholarship and living stipend to pursue graduate studies in the United States
 - 10 students selected in non-STEM fields in 2007 (out of approximately 1,500 applicants)
- Sponsored program: Master in Public Policy, Harvard University (September 2008 - May 2010)
- Award amount: \$100,000

Kim Aeda Award, Ewha Womans University, February 2007

- Award to student with second highest GPA in each division at graduation
 - 14 students awarded in 2007 (out of approximately 2,800 graduating students)

Peer-reviewed publications

Lee, S. S., & von Davier, M. (2020). Improving measurement properties of the PISA home possessions scale through partial invariance modeling. *Psychological Test and Assessment Modeling, Volume 62, 2020(1)*, 55-83. URL: https://www.psychologie-aktuell.com/fileadmin/Redaktion/Journale/ptam-2020-1/04_Lee.pdf

Lee, S. S., & Wolf, S. (2019). Measuring and predicting burnout among early childhood educators in Ghana. *Teaching and Teacher Education, 78*, 49-61. DOI: 10.1016/j.tate.2018.10.021

Boruch, R., Chao, J. L., & Lee, S. S. (2016). Program evaluation policy, practice, and the use of results. *Contemporary Educational Research Quarterly, 24(4)*, 71-90. URL: http://contemporary.cere.ntnu.edu.tw/sites/default/files/public/24%284%29_3.pdf

Conference presentations

Lee, S. S. & Miller, N. (2022, April 22 - 25). *Accuracy of regression-based imputation of SES components in PISA 2018* [Roundtable session]. American Educational Research Association (AERA) Annual Conference. San Diego, CA.

- Lee, S. S.** (2020, April 25 - May 2). *An Apple in These Countries is an Orange in Those: Misfit of the PISA Home Possessions Scale and Country Characteristics* [Paper presentation]. Comparative and International Education Society (CIES) Annual Conference. (Conference held online due to COVID-19)
- Lee, S. S., Yamamoto, K., & Khorramdel, L.** (2020, April 17 - 21). *Evaluating and improving the socio-economic status scale in the PISA background questionnaire* [Roundtable session]. AERA Annual Conference. San Francisco, CA. (Conference canceled due to COVID-19)
- Allen-Platt, C., Park, S., Oh, J., **Lee, S. S.**, & Boruch, R. (2020, April 17 - 21). *Attrition of newly recruited K-12 teachers in Pennsylvania: From 2011/2012 to 2017/2018* [Roundtable Session]. AERA Annual Conference. San Francisco, CA. (Conference canceled due to COVID-19)
- Lee, S. S.** (2020, March 22 - 26). *Longitudinal and cross-country measurement invariance of the PISA home possessions scale* [Paper presentation]. CIES Annual Conference. Miami, FL.
 - Doctoral dissertation:
<https://repository.upenn.edu/cgi/viewcontent.cgi?article=5096&context=edissertations>
- Park, S., Allen-Platt, C., Oh, J., **Lee, S. S.**, & Boruch, R. (2020, March 11 - 24). *Attrition of school principals: A survival analysis using seven years of administrative data from Pennsylvania* [Poster presentation]. SREE Annual Conference. Arlington, VA. (Conference canceled due to COVID-19)
- McDermott, P. A., Rovine, M. J., Fatima, S. F., Weiss, E. M., Gladstone, J. N., Reyes, R. S., **Lee, S. S.**, & Salomon, H. M. (2019, February 28 - March 2). *Developmental trajectories of early physical aggression among at-risk children* [Paper presentation]. EPA Annual Conference. New York, NY.
- Lee, S. S.** (2018, April 13 - 17). *The Gini coefficient's magic does not work on standardized test scores* [Paper presentation]. AERA Annual Conference. New York, NY.
 - Working paper: <https://bit.ly/2VvHX5n>
- Rayes, F., Oh, J., **Lee, S. S.**, Chao, J., Drogalis, A. R., & Boruch, R. (2017, April 27 - May 1). *Teacher turnover in Minnesota* [Poster presentation]. AERA Annual Conference. San Antonio, TX.
 - Working paper: <https://bit.ly/2EclAfN>
- Lee, S. S.** (2017, March 5 - 9). *Infidelity of implementation: Implications for randomized controlled trials* [Paper presentation]. CIES Annual Conference. Atlanta, GA.
- Lee, S. S.** (2015, March 8 - 13). *Overage students in primary and secondary schools in Nepal* [Paper presentation]. CIES Annual Conference. Washington, DC.
 - Working paper: <https://bit.ly/2wanjOl>

Academic service

Journal article peer-reviewer

- Studies in Educational Evaluation (2021)
- Large-Scale Assessments in Education (2020, 2022)
- ETS internal technical review (2019)

Thesis committee member

- External expert for Yohan Lee, Master of Science in Decision Analysis, Minerva School (Spring 2021)

Internships & Volunteer service

Educational Testing Service (ETS), International Assessments Team

Research & Development Summer Intern, June - July 2018 (2 months, full time)

- Analyzed the cross-country measurement invariance of the 2015 PISA home possessions scale
 - Cleaned a dataset of 333,500 subjects, 89 country-by-language groups, and 22 items
 - Identified items for which measurement invariance could not be established across the country-by-language groups, using multiple group concurrent calibration (using the software mdltm)
 - Analyzed the systematic misfit of items across country-by-language groups by conducting a cluster analysis of the groups based on each group's mean deviation for each item (using SAS)

- Mentors: Kentaro Yamamoto (Principal Research Scientist), Lale Khorramdel (Managing Research Scientist)

**American Institutes for Research (AIR), Survey and Data Sciences Team
Researcher Intern, July - August 2017 (2 months, full time)**

- Analyzed data for the 2016 State Library Administrative Agencies Survey
 - Replicated and reviewed 60 figures and tables using self-written codes (using STATA and SAS)
 - Supervisor: Dr. Rachel Levenstein (Senior Researcher)
- Cleaned data from two baseline surveys and two follow-up surveys administered to recipients of the Susan Thompson Buffett Foundation Scholarship
 - Recoded categorical variables, changed variable types, created variable labels and value labels, etc. (using STATA)
 - Supervisor: Mark Masterton (Senior Survey Methodologist)

**Puentes Hacia el Futuro (NGO serving Latin American immigrants in Philadelphia)
Summer Literacy Camp Tutor, July - August 2016 (2 months, full time)**

- Independently developed a reading curriculum for students in grades 7 and 8
- Led group discussions on the reading assignments and gave constructive feedback on students' writing

**Colegio America del Norte (government-subsidized secondary school in Chile)
English Teacher, March - July 2014 (5 months, full time)**

- Taught English to 270 students in grades 7 to 12, independently preparing all lesson plans
- Coached the school's English debate team of six students for the regional English debate competitions, helping the team win 3rd place
- Organized and led an English immersion camp for 140 high school students for two weeks

**Setnet School (alternative school for North Korean defectors in South Korea)
English Teacher, June - August 2009 (3 months, full time)**

- Taught basic English to three middle school students
- Supported the schools' activities to integrate students into South Korean society
- Translated English subtitles for three documentary films on the school and the students

Education

**University of California - Berkeley, Graduate School of Information
Master of Information and Data Science (MIDS), May 2022 - *present***

**University of Pennsylvania, Graduate School of Education
Doctor of Philosophy (PhD), August 2015 - May 2019**

- Program: Quantitative Methods
- Dissertation: Longitudinal and Cross-Country Measurement Invariance of the PISA Home Possessions Scale
 - Awarded distinction for both written dissertation and oral defense
 - Committee members: Dr. Robert Boruch (chair), Dr. Paul McDermott, Dr. Michael Rovine, Dr. Matthias von Davier (external committee member)
 - Link: <https://repository.upenn.edu/cgi/viewcontent.cgi?article=5096&context=edissertations>
- Fellowships and grants
 - Dean's Fellowship (Fall 2015 - Spring 2019; total \$250,000)
 - Dean's Summer Research Grant (Summer 2016, 2017, 2018; total \$10,700)
 - Pennsylvania Department of Education's Education Research and Evaluation Scholar Award (Fall 2018 - Spring 2019; \$3,000)
- Research assistantships
 - Attrition of newly recruited K-12 teachers in Pennsylvania (September 2018 - June 2019; co-principal investigator with Dr. Robert Boruch)
 - Developmental trajectories of early physical aggression among at-risk children (September - December 2018; supervised by Dr. Paul McDermott)
 - Teacher burnout among early childhood educators in Ghana (May 2017 - November 2018; supervised by Dr. Sharon Wolf)

- Impact of a computer-based early grade reading program in South Africa (June - August 2016; supervised by Dr. Dan Wagner)
- Attrition of K-12 teachers in Minnesota (September 2015 - May 2016; supervised by Dr. Robert Boruch)
- Teaching assistantships
 - Complex, Multilevel & Longitudinal Research Models (Fall 2018; taught by Dr. Paul McDermott)
 - Applied Multivariate Statistics (Spring 2018; taught by Dr. Paul McDermott)
- Founder and President of the Quantitative Methods Student Reading Group (Fall 2018 - Spring 2019)
 - Organized bi-weekly meetings for PhD students in the Quantitative Methods program to discuss quantitative research methods used in academic articles on education
- Student member of the Faculty Promotion Committee (Spring 2017)
 - Analyzed and summarized the results of student evaluations and letters of support for a faculty member being evaluated for promotion

University of Pennsylvania, Graduate School of Education

Master of Science in Education (MSEd), August 2015 - December 2016

- Program: Statistics, Measurement, Assessment, and Research Technology

Harvard University, Kennedy School of Government

Master in Public Policy (MPP), August 2008 - May 2010

- Concentration: Political and Economic Development
- Policy analysis topic: Korea's official development assistance policy to Africa
- Spring exercise topic: Recommendations for WFP and the World Bank to solve the global food crisis
- Awards and grants
 - Samsung Scholarship from the Samsung Foundation (Fall 2008 - Spring 2010; total \$100,000)
 - Summer internship grant (Summer 2009; \$2,000)
- Student Government Finance Committee member (Fall 2009 - Spring 2010)
 - Managed and monitored the Student Government's budget (annual budget of \$100,000)
 - Evaluated, approved, and monitored funding requests from 84 student organizations

Ewha Womans University (South Korea)

Bachelor of Arts (BA), *Summa cum laude*, March 2003 - February 2007

- Major: International Studies
- Senior honors thesis: Development of South Korea in the World Systems from 1961 to 1979
- Awards
 - Summa cum laude at graduation
 - Kim Aeda Award at graduation (second highest GPA in division)
- Exchange student in France (Fall 2005 - Spring 2006)
 - Enrolled in the Department of European Studies at Université Sorbonne-Nouvelle in Paris
 - Took all classes in French with French students
- English Debating Society member (Spring 2003 - Fall 2006)
 - Participated in debate competitions: 2005 Asian Debate Institute Championship (Champion); 2005 Korean Intersivity Debating Championship (9th best speaker); 2004 World Universities Debating Championships (Participant); 2003 Pan-Pacific English College Debate Championship (Semi-finalist)
- Class representative (Spring 2005)

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