

Inés María Varas Cáceres

General information

Nationality, *Chilean*.

Date of birth, *April 24, 1988*.

Email, *imvaras@uc.cl*.

Webpage, *inesmvaras.cl*.

Education

2019 **Ph.D. in Statistics**, *Pontificia Universidad Católica de Chile, Santiago*.
Thesis: "Linking measurements: A Bayesian nonparametric approach"

2012 **Master in Applied Statistics**, *Universidad de Concepción, Concepción*.

2011 **Statistical Engineer**, *Universidad de Concepción, Concepción*.
Thesis: "Maximum likelihood estimation in a class of shape mixtures of skew-normal distributions"

Academic positions

2023 – 2025 **Adjunct Professor (Lecturer)**, *Department of Statistics, Faculty of Mathematics, Pontificia Universidad Católica de Chile, Chile*.

2020 – 2022 **Part time Professor**, *Department of Statistics, Faculty of Mathematics, Pontificia Universidad Católica de Chile, Chile*.

2012 – 2014 **Part time Professor**, *Department of Statistics, Facultad de Ciencias Físicas y Matemáticas, Universidad de Concepción, Chile*.

Professional experience

2023–Present **Data Analyst**, *ESIV Analytics*.

2020 – 2022 **Statistical Analyst**, *Department of Epidemiology, Ministerio de Salud, Chile*.

Publications

Published/Accepted

San Martín, E., Petricara, M., Varas, I. M. and Alarcón-Bustamante, E. (in press), *Income Inequality under Partial Observability: What Can We Learn from Incomplete Survey Data?*, Annals of Operations Research, [Preprint].

Q1 - WOS - Operations Research & Management Science

Varas, I. M., (2025) *M. Wiberg, J. González & A. A. von Davier (2024). Generalized Kernel Equating with Applications in R*, Book review, Psychometrika. Published online 1-4.

<https://doi.org/10.1017/psy.2025.16>

Q1 - WOS - Social Science and Mathematical Methods

Alarcón-Bustamante, E., Varas, I.M., & San Martín, E. (2023) , *On the impact of missing outcomes in linear regression*, Chilean Journal of Statistics, 14 (1), 26-36.

<http://doi.org/10.32372/ChJS.14-01-02>

Q3 - Scopus / Q3 - ESCI - Emerging Sources Citation Index

Pavani, J., Gutierrez, L., Arriagada, G., Cerda, J., Varas, I., Gutierrez, I., Jofré, L., Ortiz, O. (2022), *Factor associated to the duration of COVID-19 lockdowns: a study in Chile*, Scientific Reports.

<https://doi.org/10.1038/s41598-022-13743-8>

Q1 - WOS - Multidisciplinary Sciences

Varas, I. M., González, J., Quintana, F. A. (2020) , *A Bayesian nonparametric latent approach for score distributions in test equating*, Journal of Educational and Behavioural Statistics.

<https://doi.org/10.3102/1076998620907381>

Q2 - WOS - Social Sciences and Mathematical Methods

Book Chapters

San Martín, E., Petricara, M., Varas, I.M., Azahi, K., González, J. (2024) , *The role of identifiability in empirical research*, In W. P. Fisher, Jr. & L. R. Pendrill (Eds.), Models, measurement, and metrology extending the SI: Trust and quality assured knowledge infrastructures (K.-D. Sommer & T. Frohlich, Eds.). De Gruyter Series in Measurement Sciences..

<https://www.degruyter.com/document/isbn/97831111036496/html>

Varas, I., González, J., Quintana, F. A. (2019), *A new equating method through latent variables*, In M. Wiberg, S. A. Culpepper, R. Janssen, J. González & D. Molenaar (Eds.), *Quantitative psychology: The 83nd annual meeting of the psychometric society*, New York, 2018. Springer International Publishing.

https://doi.org/10.1007/978-3-030-01310-3_30

Conference Papers

Varas, I. M., Alarcón-Bustamante, E., González, J. (2025), *Better information on regression coefficients in predictive capacity studies with missing outcomes*, *Proceedings of the 89th Annual International Meeting of the Psychometric Society*, Prague, Czech Republic (2024), <https://doi.org/10.64028/gimd125385>.

Submitted

Estimating the cost of having a chronic health conditions in the labor market dynamics in Switzerland, *Health & Social Care in the Community*, Pacheco, D., Oña, A., Ha, N., Polanco, B., Schwegler, U..

Work in progress

A latent model for different equating designs.

Varas, I. M., Wallin, G., Godoy, J.

An extension of the latent equating method through covariate dependent models.

Varas, I. M., Wallin, G., Godoy, J.

New insights into predictive validity: a marginal effects approach across the score scale.

Florenzano, V., Alarcón-Bustamante E., Varas, I. M., Godoy, M. I.

Multivariate density estimation under range restriction: a Bayesian nonparametric approach.

Varas, I. M., Ojeda, C., Pereira, L.

A Bayesian nonparametric approach for multistate diseases.

Leiva, V., Varas, I. M., Quintana, F.

Acceso a la educación superior en Chile: transformaciones recientes en los mecanismos de admisión y desafíos para la equidad.

Varas, I. M., Alarcón-Bustamante E., Godoy, M. I.

Research Grants

- 2025–2027 **Principal Investigator**, *FONDECYT 11251581*, Discrete psychometrics: an agenda for test comparability, Chilean Government.
- 2023–2024 **Principal Investigator**, *FONDEMAT UC*, Acercando la estadística al estudiantado: una shiny app para el aprender haciendo, Faculty of Mathematics - Pontificia Universidad Católica de Chile.

Research project participation

- 2020 **Postdoctoral researcher**, *Proyecto Covid-19 COVID0248*, Estudio epidemiológico observacional para evaluar el efecto de medidas de control gubernamentales sobre la dinámica espacio-temporal de COVID-19 en Chile, Chilean Government.
- 2019/12–2020/08 **Postdoctoral researcher**, *Millennium Nucleus Center for the Discovery of Structures in Complex Data*.

Talks (last years)

- 2026 **II Seminar on Psychometrics and latent variables**, *Chile*.
Forthcoming oral presentation
- 2025 **XVI Congreso Latinoamericano de Sociedades de Estadística (CLATSE)**, *Quito, Ecuador*.
Forthcoming oral presentation
- 2025 **International Meeting of the Psychometric Society (IMPS)**, *University of Minnesota - Minneapolis, USA*, Integrating latent variables into test equating methods.
Oral presentation
- 2024 **XLVII Jornadas Nacionales de Estadística (JNE 2024)**, *Universidad Austral de Chile*, Identification bounds for regression coefficients under missing outcomes.
- 2024 **Workshop on Statistical Modeling and Data Science**, *Pontificia Universidad Católica de Chile*, Predictive Validity through Missing Outcome Data.
- 2024 **International Meeting of the Psychometric Society (IMPS)**, *Praga, República Checa*, On the impact of missing outcomes in predictive capacity of selection tests studies.
- 2023 **Seminario Escuela de Estadística**, *Universidad del Valle, Cali, Colombia*, Latent models for linking measurements.

- 2023 **Workshop on Data Science and Education - International Conference on Data Science**, *Universidad Diego Portales*, Latent models for linking measurements.
- 2023 **Jornadas de Matemática de la Zona Sur**, *Universidad de Concepción*, Equipercenile equating under the NEAT design: the latent equating case.

Scientific events organizer and Scientific Committees

- 2026 **Organizing Committee Member**, *II Seminar on Psychometrics and latent variables*, Santiago, Chile.
Forthcoming event
- 2022/2024 **Organizing Committee Member**, *XLVII Jornadas Nacionales de Estadística (JNE)*.
- 2024 **Organizing Invited Session JNE 2024**, *A partial identification approach for dealing with missing data in regression models*.
- 2021 to 2023 **Scientific Committee Member**, *LatinR*.
- 2020 **Scientific Committee Member**, *COVID-19 Talks - Sociedad Chilena de Estadística*.
- 2019 **Symposium Organizer IMPS 2019**, *Advanced topics in linking and equating methods*.
- 2018 **Organizing Committee Member**, *Seminar on Psychometrics and latent variables*, Pontificia Universidad Católica de Chile, Chile.

Teaching experience

- Graduate **Master in Statistics**, *Statistical methods I, Statistical methods II*, Pontificia Universidad Católica de Chile.
- Undergraduate **Statistics**, *Statistical inference, Introduction to Statistics (Laboratory), AOV and experimental designs*, Pontificia Universidad Católica de Chile.
- Undergraduate **Engineering**, *Probability, Statistical Inference*, Pontificia Universidad Católica de Chile.
- Undergraduate **College**, *Biostatistics*, Pontificia Universidad Católica de Chile.
- Undergraduate **Geography**, *Statistics*, Pontificia Universidad Católica de Chile.
- Undergraduate **Political Sciences**, *Probability and statistics*, Pontificia Universidad Católica de Chile.
- Undergraduate **Statistical Engineering**, *Computational statistics, Stochastic processes*, Universidad de Concepción.
- Undergraduate **Civil Engineering**, *Statistics*, Universidad de Concepción.
- Undergraduate **Biology - Marine Biology**, *Experimental designs*, Universidad de Concepción.

Undergraduate **Teaching degree in Mathematics, Statistics II**, Universidad de Concepción.

Students

Current students

Graduate, Victoria Florenzano, *Evaluating the 2PL IRT model for the Chilean university admission test (in progress)*, Master in Statistics - Pontificia Universidad Católica de Chile.

Expected: 2026/12

Graduate, Christopher Weber, *Integrating Metalog models in test equating (in progress)*, Master in Statistics - Pontificia Universidad Católica de Chile.

Expected: 2026/01

Former students

Undergraduate, Justin Godoy, *Latent equating for the Single-Group Design*, Statistics - Pontificia Universidad Católica de Chile.

2025

Undergraduate, Camila Dellepiane – Matías Carrasco, *Didactic Proposal for establishing the link between the Probability and Statistics and the Citizenship Education components of the Official Secondary Education Curriculum*, Teaching degree in Mathematics - Pontificia Universidad Católica de Chile.

2022

Awards and Scholarships

2018 **International Meeting of the Psychometric Society - Travel Award.**

2015 **Beca Doctorado Nacional 2015**, Comisión Nacional de Investigación Científica y Tecnológica (CONICYT).

2012 **Universidad de Concepción's Award**, Universidad de Concepción.

2011 **Grant - Master degree in Applied Statistics**, Universidad de Concepción.

Outreach activities

2024 **¿Cómo es que hablan los datos?**, Seminario: *Mujeres en Matemáticas*, Facultad de Matemáticas, Pontificia Universidad Católica de Chile.

2024 **Cuatro grandes mentiras que están dañando el Censo y por qué tenemos que ayudar a combatirlas**, Academic column in *terceradosis.cl*.

Additional information

Associate Editor, *Chilean Journal of Statistics (ChJS)*.

Treasurer, *Sociedad Chilena de Estadística*, Board member.

2022-2023, 2024-2025

Consultant, *Department of Evaluation, Measurement, and Educational Registry (DEMRE) - Universidad de Chile*.

2020, 2022, 2024

Founder, *ESIV Analytics*.

2023–Present

Consultant, *DATA UC*, Pontificia Universidad Católica de Chile.

2021-2022

Researcher, *Interdisciplinary Laboratory of Social Statistics (LIES)*, Pontificia Universidad Católica de Chile.

2017–Present