

# Eduardo Alarcón-Bustamante

Faculty of Social Sciences

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## Education

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- 2021      PhD in Statistics, Pontificia Universidad Católica de Chile, Santiago, Chile.  
Thesis: *Modelling predictive validity problems: A partial identification approach.*  
Advisor: Ernesto San Martín and Jorge González
- 2012      MSc in Applied Statistics, Universidad de Concepción, Concepción, Chile.
- 2009      Teaching degree in Math and Computer Sciences, Universidad Católica del Maule, Talca, Chile.

## Scholarships

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- 2018      CONICYT, *Beca Doctorado Nacional, año 2018.* Chilean Government, PhD Scholarship.
- 2017      Vicerrectoría de Investigación, Pontificia Universidad Católica de Chile. *Teaching Assistant.* PhD Scholarship.
- 2010      Graduate School, Universidad de Concepción. *Beca de estipendio y Beca de exención de matrícula.* MSC Scholarship.

## Research Experience

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- Principal Investigator. *Development of Modelling Tools for a Predictive Validity Agenda for University Admissions.* Postdoctoral FONDECYT 3220422 (April, 2022-April, 2025).
- Postdoctoral Researcher. *Millenium Nucleus on Intergenerational Mobility: From modelling to Policy,* MOVI NCS2021072 (Since January, 2022).
- Data Manager and Statistician. *A Multi-center, Randomized, Double-blind, Placebo-controlled Phase III Clinical Trial to Evaluate the Efficacy, Immunogenicity and Safety of Inactivated COVID-19 Vaccine (Vero Cell) in Children and Adolescents Aged 6 months to 17 Years (PRO-nCOV-3002).* Sinovac Life Sciences Co., Ltd. (2021/07/01 – 2022/12/31).

## Academic Appointments

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- Since 2021 Part-Time Lecturer, Department of Statistics, Pontificia Universidad Católica de Chile.
- Since 2018 Teaching Assistant, Department of Statistics, Pontificia Universidad Católica de Chile.
- 2011 – 2016 Part-Time Lecturer, Faculty of Basic Sciences, Universidad Católica del Maule.
- 2012 – 2016 Part-Time Lecturer, Institute of Mathematics and Physics, Universidad de Talca.

## Publications

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- [1] Soto, J., Melo-González, F., Gutiérrez-Vera, C., et.al (2022). *Inactivated Vaccine-Induced SARS-CoV-2 Variant-Specific Immunity in Children*. *mBio* [[Article](#)]
- [2] Alarcón-Bustamante, E. (2022). *Ignorar o no ignorar, esa es la cuestión*. *Cuadernos de Beauchef*. *Ciencia, tecnología y cultura* 6 (1) 15-33. [[Article](#)]
- [3] San Martín, E., Alarcón-Bustamante, E. (2022) *Dissecting Chilean surveys: the case of missing outcomes*. *Chilean Journal of Statistics*, 13 (1) 17–46. [[Article](#)]
- [4] Alarcón-Bustamante, E., San Martín, E. & González, J. (2021). *On the marginal effect under partitioned populations: Definition and Interpretation*. In Wiberg, M., Molenaar, M., González, J., Böckenholt, U., and Kim, JS. (Eds.), *Quantitative Psychology: The 85th Annual Meeting of the Psychometric Society, Virtual*. Springer Proceedings in Mathematics & Statistics. [[Article](#)]
- [5] Alarcón-Bustamante, E., San Martín, E. & González, J. (2020). *Predictive validity under partial observability*. In Wiberg, M., Molenaar, M., González, J., Böckenholt, U., and Kim, JS. (Eds.), *Quantitative Psychology. IMPS2019*. Springer Proceedings in Mathematics & Statistics, vol 322. Springer, Cham. [[Article](#)]
- [6] Cornejo, J., Tapia, J., Guerra, F., Yáñez, M., Baettig, R., Guajardo, J., Alarcón, E. & Vidal, G. (2017). *Variation in Copper Accumulation at the Tissue Level of Five Hybrid Poplars Subjected to Copper Stress*. *Water Air and Soil Pollution*, 228:212. [[Article](#)]
- [7] Vásquez, B. & Alarcón, E. (2016) *Inclusión en universidades chilenas: del discurso a interacciones prácticas, políticas y culturales*. *Pensamiento Educativo*. *Revista de Investigación Educativa Latinoamericana*, 53(2), 1-19. [[Article](#)]

## Teaching

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### Graduate level

- **Pontificia Universidad Católica de Chile (Teaching assistant):** Multivariate Analysis (II-2022) in *Mater degree in Statistics*; Probabilistic methods for machine learning (II-2022) in *Mater degree in Artificial Intelligence*; Exploratory and Computational Methods for Statistics (I-2019, I-2021), Advanced Statistical Methods III (I-2019), Advanced Statistical Methods II (II-2018). In *PhD degree, Statistics*.
- **Universidad Católica del Maule (Teacher):** Data processing and random games (2014, 2015, 2016), Probability Models (2015, 2016) in *MSc degree, Didactic of Mathematics*. Biostatistics (II-2015), Advanced Biostatistics (I-2016) in *MSc degree, Nursing*. Fundamentals of Statistics (II-2014, 2015) in *MSc degree, Education*.

## Undergraduate level

- **Pontificia Universidad Católica de Chile**
  - **Teacher:** Psychometric (II-2021), Statistical Software (I-2021), Introduction to Data Management and Exploration - Computational Laboratory (I-2021) in *Statistics Program*; Statistics and Probability (II-2021) in *Political Science Program*; Statistics for Chemistry and Pharmacy (I-2021) In *Pharmaceutical Chemistry program*.
  - **Teaching assistant:** Probability Models (II-2022), Biostatistics (I-2020), Statistical Methods (II-2019). In *Statistics program*.
- **Universidad de Talca (Teacher):** Statistics and probability (I-2012 to II-2016) in *Civil Engineering program*; Statistical Analysis (I-2016) in *Psychology program*; Statistical quality control (II-2015, I-2016) in *Industrial Civil Engineering program*; Statistics I (I-2014), Statistics II (I-2014) in *Public Accountant and Auditor program*.
- **Universidad Católica del Maule (Teacher):** Didactic of Statistics (II-2016), Statistics I (II-2016) in *Teaching in Maths and Computer Sciences program*; Biostatistics (II-2011, I-2012) in *Nutritionist program*; Linear regression analysis (I-2011), Statistics and experimental designs (II-2011) in *Forest Engineering program*.

## Selected oral presentations

- [1] *Ignoring the ignorability in the Chilean surveys analysis: a partial identification approach*. Jornadas Nacionales de Estadística. October, 2022. San Pedro de Atacama, Chile.
- [2] *Data+Assumptions=Conclusion: how this equation affects the predictive capacity of selection university tests?* Jornadas Nacionales de Estadística. October, 2022. San Pedro de Atacama, Chile.
- [3] *Ignorar o no ignorar, esa es la cuestión*. Invited conference in Cuadernos de Beauchef nro. 1, vol. VI, 2022 presentation. September, 2022. Faculty of Physics Sciences and Mathematics, Universidad de Chile.
- [4] *A global assessment for the predictive capacity of selection tests in partially observed populations*. International Meeting of the Psychometric Society. July, 2022. University of Bologna, Italy.
- [5] *Marginal effect in selection tests: A partial identification approach*. (Virtual) International Meeting of the Psychometric Society. July, 2021.
- [6] *Global Marginal Effect: the total effect in partitioned populations*. (Virtual) XXXIII Jornadas de Matemática de la Zona Sur. Abril 20-24, 2021. Universidad de la Frontera, Temuco, Chile.
- [7] Alarcón-Bustamante, E. (2021, Feb) *Predictive Validity Under Partial Observability*. (Virtual) Paper selected for presentation at the International Objective Measurement Workshop (IOMW) Conference, Berkeley, CA. <https://www.iomw.org/>.
- [8] *New Insights on marginal effects*. (Virtual) International Meeting of the Psychometric Society. July, 2020.
- [9] *Partial identification in predictive validity of selection tests*. International Meeting of the Psychometric Society, Santiago, Chile. July, 2019.

## Events Organiser

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- Invited session *Avances recientes en psicometría*. Jornadas Nacionales de Estadística. October, 2022. San Pedro de Atacama, Chile.
- [Ciclo de Coloquios “Ciencia, Política, Políticas Públicas: ¿Qué relaciones?”](#), LIES - UChile. April - October, 2021.
- Symposium *Identification Problems in Empirical Research*, International Meeting of the Psychometric Society, 2021.
- Symposium *Advanced topics in admission university tests*, International Meeting of the Psychometric Society, 2019.

## Academic Relevant Information

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- Visitant researcher in UC Louvain, Belgium (Visit to Sébastien Van Belleghem) - November, 2022.
- Visitant researcher in KU Leuven, Belgium (Visit to Francis Tuerlinckx) - November, 2022.
- Associate Researcher to the [Interdisciplinary Laboratory of Social Statistics](#) (LIES), since 2018.
- Secretary of the [Chilean Society of Statistics](#), SOCHE, 2020-2021.
- Member of the Volunteer Team, International Meeting of the Psychometric Society, 2019.

## Skills

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- **Softwares:** R, SQL, SAS, SPSS, Minitab, Excel,  $\LaTeX$ .
- **Languages:** Spanish (native), English (advanced).

Last updated: November, 2022