JOSÉ ARENAS R.
Ph.D. in Engineering Systems
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EDUCATION

Ph.D., Engineering Systems. Universidad de Chile, 2025. (National Doctoral Fellowship 2019 – ANID)
M.A., Economics. Universidad Adolfo Ibáñez, 2019.
B.A., Economics with a Minor in Political Science. Universidad Adolfo Ibáñez, 2019.

Other Formative Experiences

Visiting Scholar at University of Chicago (Booth) under the supervision of Abigail Sussman (Winter Quarter 2024).
Summer School (Oxford), Machine Learning for Finance, University of Oxford - AI for Global Goals (August 2023).
Online student in course "How Humans Judge Machines," César Hidalgo, University of Toulouse (2021).

TEACHING EXPERIENCE

Part-Time Professor, Universidad de Chile. Courses:
(1) Data Analysis and Causal Inference, Department of Industrial Engineering,, 2022 - 2026.
(2) Strategic Operations Management, Department of Business, 2026.
Excellent teaching evaluations between 6.5 and 6.8 (1-7 scale); over 400 students in Engineering and Master's in Data Science programs.

RESEARCH EXPERIENCE

My research focuses on evaluating the impact of public and commercial policies on consumer financial decisions, with emphasis on over-indebtedness and problematic consumption. I employ causal methods (randomized experiments, synthetic control, difference-in-differences, survival analysis, causal forest) and traditional machine learning techniques applied to large administrative databases.

Featured Research Projects

Evaluation of Public Procurement Modernization Law | ChileCompra, DIPRES, U. Chile (2025)
- We evaluate the impact of Law 21.634 on SME participation and regional development in government procurement through panel data analysis of public transactions and surveys of suppliers and purchasers.
- I participate in the design and implementation of a randomized controlled trial (RCT) of an AI agent application that assists purchasers and suppliers in public procurement processes.
- Collaborators: Marcelo Olivares (UChile), Ana María Montoya (UAI), Paul Gertler (UC Berkeley).

First Latin American study of casino self-exclusions | CMF, SCJ, U. Chile (2024-2025)
- We analyze self-exclusion and revocation patterns in brick-and-mortar casinos using survival analysis with time-dependent covariates, traditional statistical analyses, and quasi-experimental designs (RDD).
- First analysis of self-exclusions and behavioral patterns of self-excluded individuals in Chile (2019-2024). We identify strategies used by self-excluded individuals to return to casino gambling.
- Results presented to SCJ and Responsible Gambling seminars.
- Collaborators: Omar Perez (UChile), Steve Sharman (King's College London), Mario Sanclemente (SCJ).
- **Impact**: *Paper under review at Journal of International Gambling Studies*; extension in development with CMF.

Effects of large-scale financial interventions | National bank and retailer (2024-2025)
- I evaluate the effectiveness of CRM campaigns using experimental data from millions of customers.
- I coordinate with analytics, risk, and marketing teams for experimental design and interpretation of results.
- Collaborators: Daniel Schwartz (UChile), Abigail Sussman (U. Chicago Booth).
- **Impact**: Paper in preparation focusing on consumer finance.

Evaluation of fintech app for debt management | SUSESO, CMF, Destácame, U. Chile (2024-2025)
- Design, recruitment, implementation, and analysis of RCT with 2,629 participants followed for 12+ months.
- I integrate financial data (CMF), medical leave records (Achs), and mental health data (proprietary surveys).
- I coordinate a multidisciplinary team across 4 institutions (academia, regulators, private sector).
- Collaborators: Daniel Schwartz, Marcelo Olivares (UChile).
- **Impact**: First causal evaluation of fintech tool use for debt reduction in Chilean workers with financial and health outcomes. We contacted over 800,000 workers to help them with their personal finances.

Credit card regulatory reform | FONDEF, SERNAC, Ministry of Economy (2022-2023)
- Design of laboratory experiments to create regulatory reform proposal for offers and payments of digital financial products.
- Methodology: controlled experiments with over 2,500 participants.
- Collaborators: Daniel Schwartz, Marcel Goic (UChile), Denise Laroze (UDD), Rosario Macera (PUC).
- **Impact**: Draft of new regulation for financial institutions, under discussion in parliament.

Universidad Adolfo Ibáñez (2014-2019): I collaborated on projects involving annuities, stock markets, corporate finance, health economics, and political science with professors Manuel Willington, Eduardo Fajnzylber, Juan Pedro Eberhard, Francisco Parro, Guillermo Paraje, among others.

PUBLICATIONS

Arenas, J., Dickinson, A., Merlo, E., Perez, O., Oh, S. "[The status of human goal-directed actions after manipulations of the action-outcome contingency](#)" (BMC Psychology, Q1, 2026).
- Experimental evidence that human goal-directed behavior persists after manipulations that alter the action-outcome association, suggesting cognitive mechanisms distinct from those in animal models of instrumental learning.

Arenas , J. , Eberhard, J., Lavin, J., Montecinos, A. "[Analyzing Stock Brokers' Trading Patterns: A Network Decomposition and Spatial Econometrics Approach](#)" (*Journal Complexity*, Q1, 2019).
- Analysis of the Chilean stock exchange transaction network through spatial econometrics and network theory. We detect patterns consistent with behaviors of larger-scale brokers attempting to affect traded asset prices.

PUBLICATIONS IN PROGRESS

Arenas, J., Paniagua, P. , Toni, E. "[Development at the Point of a Bayonet? Challenging Authoritarian Narratives in Latin-American Growth.](#)" (Revise and Resubmit – Journal of Comparative Economics).
- Synthetic control to estimate the counterfactual "what would have happened" if Chile had not returned to Democracy in 1989. In this article we challenge the notion that the Dictatorship laid the foundation for economic progress in the 1990s.

Arenas, J., Perez, O., Sanclemente, M., Sharman, S. "[Gamblers Against Social Barriers: A Survival Analysis Of Chile's Self-Exclusion System.](#)" (Under Review – Journal of Gambling Studies)

Arenas, J., Schwartz, D. "Nudging Toward Debt? Liquidity Recomposition and the Portfolio Effects of Payment Compliance" (In preparation).
- Detection of heterogeneous behaviors in a randomized intervention using machine learning for causal inference. We detect that a debt payment reminder induces some consumers to increase their debt with a bank-retailer, deteriorating their debt portfolio.

Arenas, J., Muñoz, P., Perez, O., Sanclemente, M. "[Chile offside: The urgency of a Responsible Gambling Policy](#)" (In preparation)
- Comparison of international Responsible Gambling Policies with the current situation in Chile. Includes statistical analysis of the national self-exclusion system.

SOFTWARE

Daily use software: R Studio, Qualtrics, and Claude Code.
Experience in research projects with: Python, Cursor, Git, SQL, Stata, and Matlab.