

Fernando Martel Garcia

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Professional Summary

PhD data scientist, entrepreneur, and technical product manager helping leaders learn what works, make better decisions, and drive ROI.

Professional Experience

Independent Consultant, Causal Inference & Experimentation

Future of Science Consulting, Feb 2025 – Present

- Won World Bank contract joint with NYU faculty (award May 2025) for an LLM-powered systematic review and meta-analysis of private-sector A/B testing programs.
- Built FermiApp, a terminal-based tool to answer uncertain questions quickly, and automated a record-keeping workflow for options trading. Leveraged GitHub Copilot and Opencode with spec- and test-driven development to accelerate delivery and improve reliability.

Principal Data Scientist, Windows Data

Microsoft Inc., Aug 2023 – Jan 2025

- Led enterprise-wide, backlog prioritization framework for Windows, enabling USD ROI ranking of all features. Endorsed by the CVP. Achieved 100% of my OKRs (peer median 66%).
- Led Windows business model innovation effort, identifying opportunities to 2x annual revenue over five years (\$20B+). Secured buy-in from Planning for piloting.
- Influenced customer retention strategy for 500M+ Windows 10 devices. Resulted in adoption of data-driven OKRs and lift measurement frameworks for evaluating retention initiatives.

Principal Data and Applied Sciences Manager, Windows Engineering

Microsoft Inc., Dec 2020 – Jul 2023

- Designed and led Microsoft's first-ever enterprise-scale experiment measuring the lift of a full OS release, coordinating 38-person v-team across eight orgs. Informed C-suite decisions.
- Initiated, designed, and led the first randomized controlled trial (RCT) to measure the lift of personalized recommendations in Windows Start Menu. Improved CTR by more than 50%.
- Championed agile ROB, experiment design checklists, and intake processes. Achieved 150% of experimentation goal, contributing to team Thrive Score eight points above data org.

Director of Marketplace Analytics

Marriott International Inc., Jul 2019 – Dec 2020

- Implemented lean startup innovation framework for Travel Marketplace apps, accelerating data-driven marketing experimentation and feedback loops.
- Spearheaded cross-channel marketing analytics and measurement strategies for new digital partnerships (Uber, Rewards Network), enabling real-time campaign performance tracking.
- Evangelized machine learning-driven customer segmentation and acquisition for Homes & Villas. Resulted in a new marketing partnership, and additional resource commitments.

Director of Product Management, Advanced Analytics and Machine Learning

Nike Inc., Oct 2018 – Jun 2019

- Built machine learning infrastructure and new demand signals, projected to yield \$100 - \$300M in additional revenue through improved forecasts and demand planning.
- Persuaded a 1,500 strong demand planning org to begin adopting machine learning, and automation. Rated highly successful in leadership skills.
- Hired and led product team, created agile ROB, and built roadmap for forecasting observability tools to support \$10B+ in annual purchases.

Technical Founder

Cambridge Social Science Decision Lab Inc., Oct 2013 – Apr 2018

- Raised \$2M seed round and led development of a Test & Learn SaaS platform for business users, enabling *offline* A/B testing and simplified campaign lift measurement.
- Led product, design, and engineering. Defined Objectives and Key Results (OKRs) and delivered MVP on time and within budget.
- Led customer discovery and hiring, achieving a 75% job offer acceptance rate and above average conversion metrics.

Research Fellow

Harvard T.H. Chan School of Public Health, Sep 2010 – Feb 2013

- Led the introduction of applied game theory and causal inference to flagship doctoral seminar on health systems reform. Resulted in a Lecturer job offer (declined).
- Designed and implemented a politically sensitive field experiment with pre-registration, sequentially partitioned hypotheses, and verifiable randomization. Published in the Journal of Development Economics (Impact Factor 5.1).
- Demonstrated how problematic missing data is fundamentally a causal question, and how to diagnose it in randomized control trials. Earned seven citations from the leading researcher in the field.

Economist

The World Bank Group, Jan 2004 – Aug 2006

- Implemented state-of-the-art automated data systems and time series forecasting models for risk committee. Resulted in more detailed, timely, and frequent reports, with a smaller team.

- Communicated World Bank forecasts and analytical reports. Invited to brief World Bank President, Chief Economist, Executive Board, and present at professional conferences.
- Created first interactive online version of a flagship report. Wrote proposal, got buy-in from all departmental stakeholders, and raised \$40,000 in internal funds. Ranked “Outstanding/best practice” in annual performance evaluation.

Research Analyst

The World Bank Group, Sep 2000 – Dec 2003

Consultant

The World Bank Group, Nov 1999 – Aug 2000

Other Professional Experience

- Consultant, 3ie Replication Window 3: HIV Prevention, Int. Initiative for Impact Evaluation (3ie), 2014
- Consultant, Development Impact Evaluation Initiative, World Bank Group, 2013.
- Peer Reviewer, Political Economy Analysis Toolkit, International Monetary Fund, 2013.
- Consultant, World Institute for Development and Economics Research, United Nations University, 2013
- Intern, Office of the Assistant Sec. for Int. Affairs, U.S. Department of the Treasury, 1999.
- Intern, Government Relations Group, Morgan Stanley Dean Witter, 1998.
- Trainee, European Commission, Unit A2: Middle East, Directorate General IB, 1997.
- Intern, J.P. Jenkins, Market Makers, City of London, 1995.

Education

- **Ph.D. Political Methodology**, New York University, 2010. **Completed in 4 years.**
- **M.A. International Economics**, Johns Hopkins University. **Distinction.**
- **B.A. Politics, Philosophy and Economics**, University of Oxford.

Skills & Competencies

- **Product & Business:** Lean Startup, Digital Transformation, Product Roadmaps, Growth Hacking, Business Model Innovation, Scrum, OKRs, Cross-functional Communication.
- **Technical Skills:** Causal inference, Econometrics, A/B Testing, Time Series Forecasting, CRISP-DM, Machine Learning, Generative AI with LLMs, Agentic AI, Meta-Analysis.
- **Scientific computing:** R, Python, OpenCode, Github Copilot, Stata, EViews, Stan, Aremos, Git, AWS, SageMaker AI, SQL, NetLogo.

Publications

Peer reviewed publications

- De La O, Ana L. and Pablo Fernández-Vázquez and Fernando Martel García (2023) **Federal and state audits do not increase compliance with a grant program to improve municipal infrastructure: A pre-registered field experiment**. *Journal of Development Economics* 162 (May). Replication data and code are available at [Harvard Dataverse](#)
- Martel García, F. (2016). **Replication and the Manufacture of Scientific Inferences: A Formal Approach**. *International Studies Perspectives* 17 (4), 408-425.
- Martel García, F., and L. Wantchekon (2015). **A graphical approximation to generalization: Definitions and diagrams**. *Journal of Globalization and Development* 6 (1), 71-86.
- Martel García, F. (2014). **Democracy is good for the poor: A procedural replication of Ross (2006)**. *International Studies Perspectives* 1 (3). (This paper “is in the top 10% of all research outputs ever tracked by Altmetric.”, [Altmetric](#), accessed 1/22/2018.) Replication data and code are available at [Harvard Dataverse](#)
- De La O, Ana L., and F. Martel García (2014). **Do federal and state audits increase compliance with a grant program to improve municipal infrastructure (AUDIT study): study protocol for a randomized controlled trial**. *BMC Public Health* 14 (912). (To the best of my knowledge this is the first study protocol for a RCT in political science published in a peer reviewed journal.)
- Martel García, F., and L. Wantchekon (2010). **Theory, External Validity and Experimental Inference: Some Conjectures**. *The Annals of the American Academy of Political and Social Science* 628 (1), 132-147.

Registered Research Protocols

- De La O, Ana L., and F. Martel García (2012). **AUDIT study: To determine whether federal and state audits increase Mexican municipalities’ compliance with a federal grant program to improve municipal infrastructure**. *International Standard Randomized Controlled Trial Number Register (ISRCTN22381841)*.

Academic working papers

- Anastasopoulos, L. and F. Martel García (2016). **Do Kenyan Teenagers Respond to HIV Risk Information? A Procedural Replication of Dupas (2011)**.
- Martel García, F., and L. Wantchekon (2013). **A Graphical Approximation to Generalization: Definitions and Diagrams**. WIDER Working Paper WP/2013/082.
- Martel García, F. (2013). **Definition and Diagnosis of Problematic Attrition in Randomized Controlled Experiments**.
- Martel García, F. (2013). **A Unified Approach to Generalized Causal Inference**.
- Martel García, F. (2012). **Small, Slow, and Diminishing: The Effect of Democracy on the Under-five Mortality Rate**.
- De La O, Ana L., and F. Martel García (2011). **Institutions, ‘Elite Capture’ and Welfare Inequality in Mexico**.
- De La O, Ana L., and F. Martel García (2011). **How are Mayors Held Accountable Without Re-election? A Theoretical Primer**.

- Martel García, F. (2010). Democratic Compacts, Institutional Accountability, and Health Outcomes.
- Martel García, F. (2010). Causal Inference in Time Series Cross Section: Process Matching.

Patents

- Martel García, F., [Methods, systems, and articles of manufacture for the management and identification of causal knowledge](#). U.S. Patent application US 15/037,190, filing date November 24, 2014.

Professional reports

- [Global Economic Prospects](#). World Bank. Contributor to six editions: 2001–2006.
- [Global Development Finance](#). World Bank. Contributor to six editions: 2001–2006.
- [Short-term Risk Monitoring Report](#). Financial Risk Committee and Executive Board, World Bank. Monthly global business cycle forecasts and analysis.
- China Quarterly Update. World Bank China Office. Contributed quarterly forecast and analysis of China's external economic environment. 2004–2006.

Field Research and Data Collection

- Randomized controlled trial investigating the effect of federal and state level audits on municipal accountability. Fielded endline survey. 2011–2012.
- Observational study investigating the social and institutional determinants of municipal infrastructure investment location choices. Trained and equipped Mexican auditors with GPS devices to collect location data for municipal infrastructure investment. 2011–2012.

Awards and Honors

- Oar Award, recognizing individuals and who go above and beyond to live and promote Microsoft and Windows + Devices cultural principles, 2022.
- McCracken Fellowship, full tuition and stipend, New York University, 2006–2010.
- 4 Spot Awards (\$300–\$500) “recognizing and expressing appreciation for extraordinary efforts”, World Bank, 2000–2005.
- Bologna Center Fellowship, half tuition, Johns Hopkins University, 1998–1999.

Research Grants

- Research Grant, \$5,000, Leitner Program in International and Comparative Political Economy, Yale University (with co-investigator).
- Research Grant, \$7,000, Institution for Social and Policy Studies, Yale University (with co-investigator).
- Summer Research Grant, \$1,500, New York University, 2007–2009.
- Travel Grant, \$500, New York University, 2008.

Conferences and Seminars

Invited Academic Conferences

- **Replication and the Manufacture of Scientific Inferences: A Formal Approach.** Joint Statistical Meeting, Chicago, August 2, 2016.
- Replication and the Manufacture of Scientific Inferences: A Formal Approach. 3ie Replication Consultation, District of Columbia, May 29, 2015.
- Procedural Replication: Improving Research Practice. International Studies Association Annual Convention, Toronto, March 28, 2014.
- A Solution to Generalized Causal Inference. X Meeting of the Experiments in Governance and Politics Research Network, Columbia University, New York November 23, 2013.
- Testing Generalizable Theories with Social Experiments. UNU-WIDER Project Workshop on Experimental and Non Experimental Methods in the Study of Government Performance, New York University, August 22-23, 2013.
- Understanding and Diagnosing Problematic Attrition in Randomized Controlled Experiments. IX Meeting of the Experiments in Governance and Politics Research Network, University College London, May 31–June 1, 2013.
- Identifying Causal Effects in Field Experiments with Attrition: A Graphical Approach. Midwest Political Science Association Annual Conference, April 11–14, 2013.
- Understanding and Diagnosing Problematic Attrition in Randomized Controlled Experiments. Applied Statistics Workshop, Harvard University, Department of Government, February 20, 2013.
- Small, Slow, and Diminishing: The Effect of Democracy on the Under-five Mortality Rate. Harvard University, Department of Government, September 18, 2012.
- The Effect of Democracy on the Under-five Mortality Rate. Harvard School of Public Health, Department of Global Health and Population, April 25, 2012.
- Democratic Political Order, Institutional Accountability, and Health Outcomes, Harvard University, Department of Government, February 27, 2012.

Invited Professional Conferences

- Testing How External Audits Can Improve Service Delivery in Mexico. ieGovern Impact Evaluation for Public Sector Governance and Justice workshop, Dakar, Senegal, June 24–27, 2013.
- Using Randomized Controlled Trials to Improve Policy. ieGovern Impact Evaluation for Public Sector Governance and Justice workshop, Dakar, Senegal, June 24–27, 2013.
- Global Economic Risks and the Colombian Economy. Organized by the Colombian Exporters Association and *La República* newspaper. Bogota, Colombia, March 23, 2006.
- APEC Study Centers Consortium Annual Meeting. Viña del Mar, Chile, May 27, 2004.
- Making Trade Work for the Poor. Advanced Course for Government Employees. Georgetown University, Washington DC, June 7, 2004.
- Second APEC Senior Officials Meeting. Pucón, Chile, May 25, 2004
- XX General Assembly of Mexico's National Agricultural Council. Mexico City, Mexico, June 2003.

Posters

- Theory, External Validity and Experimental Inference: Some Conjectures. Atlantic Causal Inference Conference, Steinhardt Center for the Promotion of Research Involving Innovative Statistical Methodology, New York University, May 20–21, 2010

Teaching

Harvard School of Public Health

- Political Economy and Ethics of Health Reform (Ph.D.): Spring 2011, Spring 2012. Co-instructor.

New York University

- International Politics: Fall 2008, teaching assistant for Shanker Satyanath.
- Comparative Politics: Spring 2009, teaching assistant for Joshua Tucker.

Johns Hopkins University (SAIS)

- International Monetary System: Fall 1999, teaching assistant for Max Corden,

Reviewer service

- American Journal of Political Science
- European Journal of Political Research
- Journal of Experimental Political Science
- Observational Studies

Professional Organizations

- Member, [Experiments in Governance and Politics Research Network](#), 2013–Present.
- Visiting Fellow, [Harvard Institute for Quantitative Social Science](#), 2010–2013