

# Rafael Becerril Arreola

USC Darla Moore School of Business  
1014 Greene Street, Columbia, SC 29208  
+1 (803) 777 6711  
[rafael.becerril@moore.sc.edu](mailto:rafael.becerril@moore.sc.edu)

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## EDUCATION

- **Ph.D. in Management** (focus on Quantitative Marketing and Economics) 2008 - 2013  
UCLA (University of California, Los Angeles), USA
- **M.A.Sc. in Electrical Engineering** (focus on Automatic Control) 2001 - 2003  
University of Toronto, Canada
- **B.Sc. in Electronics Engineering** (Electrical and Computer Engineering) 1996 - 2000  
ITESM (Instituto Tecnológico de Estudios Superiores de Monterrey), Mexico

## EMPLOYMENT

- **University of South Carolina, USA**  
Assistant Professor of Marketing, Darla Moore School of Business 2013 -
- **Lingnan University, Hong Kong**  
Visiting Tutor, English Dept. 2008  
Senior Research Assistant, Computing and Decision Sciences Dept. 2007 - 2008  
Research Assistant, Computing and Decision Sciences Dept. 2006 - 2007
- **ARBE Transportation, Mexico**  
Systems Analyst (part-time contractor) 2005 - 2006
- **AVW-TELAV, Canada**  
Systems Design Specialist, System Design and Integration Dept. 2004 - 2005
- **Concordia University, Canada**  
Research Associate, Electrical and Computer Engineering Dept. 2003 - 2004
- **ITESM, Mexico**  
Instructor, Division of Engineering 2001

## EXPERTISE

**Research.** I study the roles of socioeconomics and technology in consumer markets, focusing on their implications for marketing and its interfaces with operations, engineering, and information systems. To this end, I develop and apply tools from econometrics, Bayesian statistics, automatic control, optimization, and high-performance computing, supported by theories from microeconomics, industrial organization, psychology, and sociology. Most of this work pertains to pricing, branding, assortment, and product line decisions in automotive markets, retailing, e-commerce, and consumer packaged goods.

**Teaching.** My specialty is business analytics and data science at both undergraduate and graduate levels. I teach the conceptual foundations and the practical application of data analysis tools, through the case method, in-class labs, and consulting assignments with major consumer goods companies. Delivered in face-to-face, distributed, and mixed formats, my courses emphasize critical thinking and highly-structured best practices to tackle the complexity of real-life problems.

## PUBLICATIONS IN ACADEMIC BUSINESS JOURNALS

1. Rafael Becerril-Arreola. Estimating Demand with Substitution and Intraline Price Spillovers. *Manufacturing & Service Operations Management*. Forthcoming. [doi:10.1287/msom.2018.0765](https://doi.org/10.1287/msom.2018.0765).
2. Yong Tang, Jie Xiong, Rafael Becerril-Arreola, and Lakshmi Iyer. Ethics of Blockchain. *Information Technology & People*. Forthcoming. [doi:10.1108/ITP-10-2018-0491](https://doi.org/10.1108/ITP-10-2018-0491).
3. Chen Zhou, Shrihari Sridhar, Rafael Becerril-Arreola, Tony H. Cui, and Yan Dong. Promotions as Competitive Reactions to Recalls and Their Consequences. *Journal of the Academy of Marketing Science*, 47(4):702–722, 2019. [doi:10.1007/s11747-018-0611-8](https://doi.org/10.1007/s11747-018-0611-8).
4. Rafael Becerril-Arreola, Chen Zhou, Raji Srinivasan, and Daniel Seldin. Service Satisfaction-Market Share Relationships in Partnered Hybrid Offerings. *Journal of Marketing*, 81(5):86–103, 2017. [doi:10.1509/jm.15.0537](https://doi.org/10.1509/jm.15.0537).
5. Rafael Becerril-Arreola, Mingming Leng, and Mahmut Parlar. Online Retailers' Promotional Pricing, Free-Shipping Threshold, and Inventory Decisions: A Simulation-Based Analysis. *European Journal of Operational Research*, 230(2):272–283, 2013. Authors listed in alphabetical order. [doi:10.1016/j.ejor.2013.04.006](https://doi.org/10.1016/j.ejor.2013.04.006).
6. Mingming Leng and Rafael Becerril-Arreola. Joint Pricing and Contingent Free-Shipping Decisions in B2C Transactions. *Production and Operations Management*, 19(4):390–405, 2010. [doi:10.1111/j.1937-5956.2009.01112.x](https://doi.org/10.1111/j.1937-5956.2009.01112.x).
7. Rafael Becerril-Arreola. A Comment of Kim Warren's Paper: Why Has Feedback Systems Thinking Struggled to Influence Strategy and Policy Formulation. *Systems Research and Behavioral Science*, 24(1):115–118, 2007. [doi:10.1002/sres.790](https://doi.org/10.1002/sres.790).

## PUBLICATIONS IN ACADEMIC SCIENCE JOURNALS

1. Rafael Becerril-Arreola, Amir G. Aghdam, and Rashid R. Kohan. Variable Structure Decentralized Control and Estimation for Highway Traffic Systems. *Journal of Dynamic Systems, Measurement, and Control*, 130:041002, 2008. [doi:10.1115/1.2907389](https://doi.org/10.1115/1.2907389).
2. Rafael Becerril-Arreola, Amir G. Aghdam, and Valery D. Yurkevich. Decentralised Two-Time-Scale Motions Control Based on Generalised Sampling. *IET Control Theory & Applications*, 1(5):1477–1486, 2007. [doi:10.1049/iet-cta:20070020](https://doi.org/10.1049/iet-cta:20070020).
3. Rafael Becerril-Arreola and Amir G. Aghdam. Decentralised Nonlinear Control with Disturbance Rejection for On-Ramp Metering in Highways. *IET Control Theory & Applications*, 1(1):253–262, 2007. [doi:10.1049/iet-cta:20045192](https://doi.org/10.1049/iet-cta:20045192).
4. Amir G. Aghdam, Edward J. Davison, and Rafael Becerril-Arreola. Structural Modification of Systems Using Discretization and Generalized Sampled-Data Hold Functions. *Automatica*, 42(11):1935–1941, 2006. [doi:10.1016/j.automatica.2006.06.005](https://doi.org/10.1016/j.automatica.2006.06.005).
5. Manfredi Maggiore and Rafael Becerril. Modeling and Control Design for a Magnetic Levitation System. *International Journal of Control*, 77(10):964–977, 2004. [doi:10.1080/002071704200024392](https://doi.org/10.1080/002071704200024392).
6. Rafael Becerril Arreola. Output Feedback Nonlinear Control for a Linear Motor in Suspension Mode. *Automatica*, 40(12):2153–2160, 2004. [doi:10.1016/j.automatica.2004.07.005](https://doi.org/10.1016/j.automatica.2004.07.005).

## PAPERS UNDER REVIEW OR REVISION

1. Rafael Becerril-Arreola, Randolph E. Bucklin, and Raphael Thomadsen. Effects of Income Distribution Changes on Assortment Size in the Mainstream Grocery Channel. Revising for resubmission.
2. Rafael Becerril-Arreola, Mark Ferguson, Mingming Leng, and Mahmut Parlar. Supply Chain Analysis under the Impact of Delivery-Time-Based Customer Ratings. Revising for resubmission. Authors listed in alphabetical order.
3. Rafael Becerril-Arreola and Dominique M. Hanssens. Quantifying and Explaining Product Category Positionality. Revising for resubmission.
4. Rafael Becerril-Arreola. Heterogeneous Veblen Effects: Evidence from the Car Rental Market. Preparing for submission.
5. Rafael Becerril-Arreola and Randolph E. Bucklin. The Role of Beverage Bottle Size in the Generation of PET Plastic Waste. Preparing for submission.

## RESEARCH IN PROGRESS (ADVANCED PROJECTS)

1. Rafael Becerril-Arreola, Randolph E. Bucklin, and Nitin Mehta. Heterogeneous Effects of Income Changes on Consumer Behavior.
2. Sina Aghaie, Carlos J.S. Lourenco, Charles H. Noble, and Rafael Becerril-Arreola. Bluff or Real? An Empirical Analysis of the Correlates of Entry Threats.

## INVITED PRESENTATIONS

1. Heterogeneous Veblen Effects: Evidence from the Car Rental Market. *ESSEC Business School*, Jun 2019.
2. Heterogeneous Veblen Effects: Evidence from the Car Rental Market. *Shanghai University of Finance and Economics*, Jun 2018.
3. Competitive Reactions and Spillover Effects of Product Recalls. *University of California, Los Angeles, Marketing Area Research Symposium*, May 2016.
4. Does Income Inequality Matter in Marketing? A Large Scale Analysis of Consumer Product Availability. Columbia, SC, Apr 2016. *Symposium on Research Computing Infrastructure*.
5. The Effects of Economic Inequality on the Demand for Status-Signaling Brands. Job market paper presented at *Boston University, University of Washington Seattle, George Washington University, Tilburg University, VU Amsterdam, University of California Riverside, University of South Carolina*, 2012-2013.

## CONFERENCE PRESENTATIONS

1. Heterogeneous Veblen Effects: Evidence from the Car Rental Market. In *Marketing Science Conference*, Philadelphia, PA, Jun 2018.
2. What Are the Welfare Effects of Consumer Brand Deletions? In *Marketing Science Conference*, Los Angeles, CA, Jun 2017.

3. Does Income Inequality Matter in Marketing? A Cross - Category, Cross - Market Look at Consumer Product Availability. In *Marketing Science Conference*, Baltimore, MA, Jun 2015.
4. Does Income Inequality Matter in Marketing? A Cross-Category, Cross-Market Look at Consumer Product Availability. In *Theory + Practice in Marketing Conference*, Atlanta, GA, Jun 2015.
5. The Relationships among Income, Preferences, and Consumer Motivation. In *Marketing Science Conference*, Boston, MA, Jun 2012.
6. The Multiple Moderating Effects of Social Comparisons on Consumer Expenditures. In *Marketing Science Conference*, Houston, TX, Jun 2011.
7. Social Comparisons and Consumption. In *Doctoral Symposium in Marketing*, Houston, TX, Apr 2010. University of Houston.

## CONFERENCE PROCEEDINGS

1. Yong Tang, Jie Xiong, Rafael Becerril-Arreola, and Lakshmi Iyer. Blockchain Ethics Research: A Conceptual Model. In *Proceedings of the ACM SIGMIS Computers and People Research Conference*, Nashville, TN, Jun 2019.
2. Rafael Becerril-Arreola, Denise Dahlhoff, Ravi Dhar, Gilles Laurent, Jessie Handbury, Christian Kalweit, and John Zhang. Pricing the Priceless: How to Charge Luxury Prices. In Barbara Kahn, Joseph Nunes, and David Bell, editors, *White papers of the 2015 Online Luxury Retailing Conference*, New York, NY, 2015. Authors listed in alphabetical order.
3. Rafael Becerril-Arreola, Amir G. Aghdam, and Edward J. Davison. Minimizing Interaction of Subsystems in Large-Scale Interconnected Systems Using Generalized Sampling. In *Proceedings of the 16th IFAC World Congress*, Prague, Czech Republic, Jul 2005.
4. Rafael Becerril and Amir G. Aghdam. On-Ramp Decentralized Nonlinear Control with Disturbance Rejection. In *Proceedings of the 16th IFAC World Congress*, Prague, Czech Republic, Jul 2005.
5. Rafael Becerril, Amir G. Aghdam, and Valery D. Yurkevich. Decentralized Two-Time-Scale Motions Control Using Generalized Sampled-Data Hold Functions. In *Proceedings of the 2004 American Control Conference*, volume 4, Boston, MA, Jun 2004.
6. Rafael Becerril, Amir G. Aghdam, and Rashid R. Kohan. Decentralized Nonlinear Traffic Control-II: Sliding Mode Observers. In *Proceedings of the 43rd IEEE Conference on Decision and Control*, Nassau, Bahamas, Dec 2004.
7. Rashid R. Kohan, Rafael Becerril, and Amir G. Aghdam. Decentralized Nonlinear Traffic Control-I: Variable Structure Linearizing Control. In *Proceedings of the 43rd IEEE Conference on Decision and Control*, Nassau, Bahamas, Dec 2004.
8. Rafael Becerril-Arreola and Manfredi Maggiore. Nonlinear Stabilization of a 3 Degrees-of-Freedom Magnetic Levitation System. In *Proceedings of the 2003 American Control Conference*, volume 2, Denver, CO, Jun 2003.

## RESEARCH GRANTS

- **Association for Computing Machinery**  
Management Information Systems research grant \$3,000 2018 - 2019  
(with Yong Tang, Jason Xiong, and Lakshmi Iyer)
- **University of South Carolina, Darla Moore School of Business**  
Moore research grant \$5,500 2019  
Moore research grant \$5,000 2016  
Moore research grant \$2,500 2014  
Moore research grant \$3,000 2013

## TEACHING EXPERIENCE

- **University of South Carolina, Darla Moore School of Business, USA**  
Developed and taught:
  - concurrently distributed and face-to-face MBA course on Marketing Analytics 2014 -  
(panel data regression, multivariate testing, marketing mix modeling, etc.)
  - MBA practicums involving consulting projects on marketing analytics 2013 - 2015  
(price optimization, measurement of market structure, etc.)
  - face-to-face MBA course on Marketing Analytics 2013  
(predictive analytics, marketing experiments, CLV, conjoint analysis, etc.)
 Taught:
  - face-to-face undergraduate course on Marketing Analytics 2016 -  
(regression, forecasting, data mining, optimization, etc.)
- **ITESM, Mexico**  
Developed and taught undergraduate course on electric circuits 2001

## STUDENT ADVISING AND SERVICE

- **University of South Carolina, Marketing Department**  
PhD dissertation committee (co-chair)  
- Sina Aghaie 2019  
PhD comprehensive exam committee (member) 2017 - 2019  
PhD qualifying exam committee (member) 2014, 2015, 2019
- **University of South Carolina, Management Science Department**  
PhD qualifying exam committee (member) 2017 - 2018
- **University of South Carolina, Computer Science Department**  
Master thesis committee (member)  
- Surya Bhatt 2015

## SERVICE TO DEPARTMENT, SCHOOL, UNIVERSITY, AND COMMUNITY

- **University of South Carolina, Marketing Department**  
Center for Marketing Solutions' Advisory Board (member) 2014 - 2016  
Faculty recruiting committee (member) 2013 - 2015  
PhD admission committee (member) 2019 -
- **University of South Carolina, Darla Moore School of Business**  
Faculty Advisory Committee (member) 2017 -  
Analytics certificate curricula committee (member) 2014 - 2016

- **University of South Carolina**
  - Research Computing Advisory Committee (member) 2019 -
  - University Bookstores' Committee (member) 2015 - 2017
  - University Bookstores' Committee (co-chair) 2014 - 2015
- **Dutch Fork High School**
  - Advanced Placement Research Program (mentor) 2019 -

## SERVICE TO PROFESSION

Ad hoc reviewer for: Marketing Science, Manufacturing & Service Operations Management, Production and Operations Management, Information Systems Research, Journal of Public Policy & Marketing, Transportation Research Part A: Policy and Practice, European Journal of Operational Research, ACM (Association for Computing Machinery) Computing Surveys

## HONORS AND AWARDS

- **ACM (Association for Computing Machinery)**
  - SIGMIS CPR Magid Igbaria Outstanding Conference Paper Award finalist 2019
- **MSI (Marketing Science Institute)**
  - Honorable Mention, Clayton Dissertation Award 2012
- **UCLA (University of California, Los Angeles)**
  - Fellow, American Marketing Association Sheth Doctoral Consortium 2011
  - Fellow, Columbia-Duke-UCLA Workshop on Quantitative Marketing 2010
  - Fellow, Doctoral Symposium in Marketing, University of Houston 2010
  - Fellow, Doctoral Internationalization Consortium in Marketing, UT Austin 2009
  - Graduate, Teaching, and Research Fellowships 2008 - 2013
  - Anderson Educational Fellowship 2008 - 2012
- **University of Toronto**
  - Graduate, Teaching, and Research Fellowships 2001 - 2003
- **ICIA (International Communication Industries Association)**
  - Educational Communications Foundation Scholarship 2001
- **ITESM (Instituto Tecnológico de Estudios Superiores de Monterrey)**
  - Excellence Scholarship for Master's program 2001
  - Highest GPA in undergraduate major, graduation honors 2000
  - Undergraduate merit-based scholarship 1996 - 2000
- **IHS (Information Handling Services)**
  - 1st place in the IHS96 Research Prize 1996

## SOFTWARE SKILLS (RECENTLY USED)

- **Statistical software**
  - R, SAS, STAN
- **Computer languages**
  - Python, C, C++, SQL
- **High performance computing platforms**
  - PBS and SLURM job managers, MPI protocol
- **Operating systems**
  - Windows and Linux (user and basic administration)