

# AHMED KHWAJA

## Curriculum Vitae

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### Contact Information

Cambridge Judge Business School

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University of Cambridge

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### Research Interests

Market Entry and Expansion Dynamics, Health Care Markets, Pharmaceutical Innovation, Experience Spillovers, Retail Competition, Emerging Markets, Social Enterprises

### Research Fields

Dynamic Structural Models, Estimation of Games of Strategic Interaction, Asymmetric Information & Incomplete Markets, Simulation Based Econometric Methods, Two-sided Matching Estimators, Reinforcement Learning

### Current Positions and Affiliations

Professor of Marketing, Business and Public Enterprise, Cambridge Judge Business School

Visiting Fellow, Yale Center for Customer Insights, Yale School of Management

Faculty Affiliate, Health Sector Management, Fuqua School of Business, Duke University

### Previous Positions and Affiliations

Associate Professor of Marketing, Cambridge Judge Business School

Visiting Associate Professor of Marketing, Yale School of Management

Assistant Professor of Marketing, Yale School of Management

Faculty Fellow, Yale Center for Customer Insights, Yale School of Management

Faculty Research Staff, Cowles Foundation for Research in Economics, Yale University

Melville Blake '80 Visiting Summer Fellow, Yale School of Management

Assistant Professor of Business Economics, Fuqua School of Business, Duke University

Visiting Graduate Student, Department of Economics, University of Pennsylvania

## Education

Ph.D. Department of Economics, University of Minnesota

Thesis: “Health Insurance, Habits and Health Outcomes: A Dynamic Stochastic Model of Investment in Health.”

Advisor: Michael P. Keane

## Publications

“Quantifying the Link Between Employee Engagement, and Customer Satisfaction and Retention in the Car Rental Industry,” with Nathan Yang, *Quantitative Marketing and Economics*, Vol. 20, pp. 275-292, 2022.

“Firm Expansion, Size Spillovers and Market Dominance in Retail Chain Dynamics,” with Jason Blevins and Nathan Yang, *Management Science*. Vol. 64(9), pp. 4070-4093, 2018.

“The Dynamic Spillovers of Entry: An Application to the Generic Drug Industry,” with Ron Gallant and Han Hong, *Management Science*, Vol. 64(3), pp. 1189-1211, 2018.

“A Bayesian Approach to Estimation of Dynamic Models with Small and Large Number of Heterogeneous Players and Latent Serially Correlated States,” with Ron Gallant and Han Hong, *Journal of Econometrics*, Vol. 203(1), pp. 19-32, 2018.

“Short Run Needs and Long Term Goals: A Dynamic Model of Thirst Management,” with Guofang Huang and K. Sudhir, *Marketing Science*, Vol. 34 (5), pp. 702-721, 2015.

“Moral Hazard, Adverse Selection and Health Expenditures: A Semiparametric Analysis,” with Patrick Bajari, Christina Dalton and Han Hong, *RAND Journal of Economics*, Vol. 45 (4), pp. 747-763, 2014.

- Honorable Mention, Ken Arrow Award for best paper in Health Economics in 2014.

“Structural Models of Complementary Choices,” with Steve Berry, Vineet Kumar, Andres Musalem, Kenneth C. Wilbur, Greg Allenby, Bharat Anand, Pradeep Chintagunta, W. Michael Hanemann, Przemek Jeziorski, Angelo Mele, *Marketing Letters*, Vol. 25 (3), pp. 245-256, 2014.

“Habit Persistence and Teen Sex: Could Increased Access to Contraception Have Unintended Consequences for Teen Pregnancies?” with Peter Arcidiacono and Lijing Ouyang, *Journal of Business & Economic Statistics*, Vol. 30 (2), pp. 312-325, 2012.

“A Comparison of Treatment Effects Estimators Using a Structural Model of AMI Treatment Choices and Severity of Illness Information from Hospital Charts,” with Gabriel Picone, Martin Salm and Justin Trogdon, *Journal of Applied Econometrics*, Vol. 26 (5), pp. 825-853, 2011.

“Estimating Willingness to Pay for Medicare Using a Dynamic Life-Cycle Model of Demand for Health Insurance,” *Journal of Econometrics*, Vol. 156 (1), pp. 130-147, 2010.

“Do Smokers Value Their Health and Longevity Less?” with Frank Sloan and Yang Wang, *Journal of Law and Economics*, Vol. 52(1), pp. 171-196, February 2009.

“Are Mature Smokers Misinformed?” with Dan Silverman, Frank Sloan and Yang Wang, *Journal of Health Economics*, Vol. 28(2), pp. 385-397, March 2009.

“The Relationship Between Individual Expectations and Behaviors: Evidence on Mortality Expectations and Smoking Decisions,” with Frank Sloan and Sukyung Chung, *Journal of Risk and Uncertainty*, Vol. 35(2), pp. 179-201, October 2007.

“Time Preference, Time Discounting and Smoking Decisions,” with Dan Silverman and Frank Sloan, *Journal of Health Economics*, Vol. 26(5), pp. 927-949, September 2007.

“Testing the Mechanisms of Structural Models: The Case of the Mickey Mantle Effect,” with Hanming Fang, Michael Keane, Martin Salm and Dan Silverman, *American Economic Review, Papers & Proceedings*, Vol. 97(2), pp. 53-59, May 2007.

“Smoking, Wealth Accumulation and the Propensity to Plan,” with Dan Silverman, Frank Sloan and Yang Wang, *Economics Letters*, Vol. 94(1), pp. 96-103, January 2007.

“Learning about Individual Risk and the Decision to Smoke,” with Frank Sloan and Sukyung Chung, *International Journal of Industrial Organization*, Vol. 24(4), pp. 683-699, July 2006.

“Evidence on Preferences and Subjective Beliefs of Risk Takers: The Case of Smokers,” with Frank Sloan and Martin Salm, *International Journal of Industrial Organization*, Vol. 24(4), pp. 667-682, July 2006.

- The Paul Geroski Prize for the best paper published in *IJIO* in 2006.

“The Effects of Spousal Health on the Decision to Smoke: Evidence on Consumption Externalities, Altruism and Learning Within the Household,” with Frank Sloan and Sukyung Chung, *Journal of Risk and Uncertainty*, Vol. 32(1), pp. 17-35, January 2006.

“Health Insurance, Habits and Health Outcomes: Moral Hazard in a Dynamic Stochastic Model of Investment in Health,” in *Proceedings of the 2002 North American Summer Meetings of the Econometric Society: Labor Economics and Applied Econometrics*, edited by Anne Case, Raquel Fernandez, John Rust, Ken Wolpin.

### **Working Papers**

“Market Expansion and Targeting While Balancing Social and Financial Objectives: Evidence from Microfinance Organizations in Bangladesh,” with Jarrod Vassallo and Jaideep Prabhu, working paper, Judge Business School, University of Cambridge, 2023.

“The Value of Firm Alliances in FDA Approvals: Estimating A Two-Sided Matching Model of Alliance Formation and its Role in Pharmaceutical Innovation,” with Rebeca Méndez Durón and Liang Zhao, working paper, Judge Business School, University of Cambridge, 2023.

“Health Insurance Reform and the (Re-)Distribution of Welfare: A Dynamic Lifecycle Analysis of Heterogeneity in Willingness to Pay for the Affordable Care Act,” with Matthew White, working paper, Judge Business School, University of Cambridge, 2023.

“The Effects of Early and Late Stage Collaboration Experience on Pharmaceutical Product Development,” with Rebeca Méndez Durón, working paper, Judge Business School, University of Cambridge, 2021, revise & resubmit.

“Moral Hazard and the ‘Mickey Mantle’ Effect in a Dynamic Model of Demand for Health,” working paper, Judge Business School, University of Cambridge, 2021, under revision.

“The Effect of Multimarket Contact on Prices: Evidence from Retail Lumber Markets,” with Beomjoon Shin, working paper, Judge Business School, University of Cambridge, 2023, under revision.

**Work in Progress**

“Reinforcement Learning Based Conditional Choice Probability Estimation of Dynamic Discrete Choice Models with Big Data,” with Sonal Srivastava.

“Real Time Estimation of Preferences for Food and Nutrition from Online Orders Using Big Data and Machine Learning,” with Sonal Srivastava and Jaideep Prabhu.

“How to Customize Business Mentorship for Nanoentrepreneurs in Emerging Markets?” with Soniya Gupta-Rawal and Jaideep Prabhu.

“The Role of Corporate Structure on Market Structure: Evidence from Home Improvement Stores During the Great Recession,” with Jason Blevins.

**Grants**

2023-24 “Inefficiencies in Online Food Markets,” with Sonal Srivastava, Keynes Fund Award (£48,000).

2021-23 “Consumption Behavior and Public Health,” with Jaideep Prabhu and Sonal Srivastava, Tony Cowling Foundation Research Award (£10,000).

2013-14 “Dynamic Feedback Between Employee Engagement, Productivity and Customer Loyalty,” with Nathan Yang, Wharton Customer Analytics Initiative Data Award.

2009-13 “Deterring Drunk Driving: Beliefs, Preferences, Outcomes, and Welfare Implications,” with Hanming Fang and Frank Sloan, NIAAA, R01 (\$1,994,000)

2005-09 “Structural Models of Consumer Optimization Behavior,” with Donna Gilleskie, NIA R13 (\$20,000)

2005-08 “Structural Models of Consumer Optimization Behavior: Labor, Retirement, and Health,” with Donna Gilleskie, The Demography and Economics of Aging Research Program, UNC (\$10,000)

2004-07 “Why Don’t Mature Smokers Quit?” with Dan Silverman and Frank Sloan, Robert Wood Johnson Foundation (\$499,000)

2004-06 “A Dynamic Model of Teen Sex, Abortion and Childbearing,” with Peter Arcidiacono, NICHD R03 (\$154,000)

1999-02 “A Dynamic Stochastic Model of Investment in Health,” NIH-AHRQ Dissertation Grant, R03 (\$31,000)

### **Honors and Awards**

2021 INFORMS Society of Marketing Science Service Award

2020 CJBS Annual Teaching Award

2019 CJBS Annual Faculty Activity Award

2015 Honorable Mention, Ken Arrow Award for best paper in Health Economics in 2014.

2007 “The Paul Geroski Best Article” Prize for the best paper in 2006 in the *International Journal of Industrial Organization*.

### **Professional Service**

Associate Editor, Management Science, 2016-18

Editorial Review Board, Marketing Science, 2016-18

Co-Guest Editor, Journal of Econometrics, Annals Issue “Structural Models of Consumer Optimization Behavior.”

Reviewer for:

American Economic Review, American Economic Journal: Applied Economics, B.E. Journal of Economic Analysis & Policy, Economic Journal, Health Economics, International Economic Review, International Journal of Industrial Organization, Journal of Applied Econometrics, Journal of Business and Economic Statistics, Journal of Industrial Economics, Journal of Marketing, Journal of Marketing Research, Journal of Political Economy, Journal of Public Economics, Journal of Risk and Uncertainty, Management Science, Marketing Science, Quantitative Economics, RAND Journal of Economics, Review of Economic Studies, Review of Marketing Science, Southern Economic Journal, US-Israel Binational Science Foundation

Conferences & Sessions organized (\*indicates multiple times):

- Organizer, Inaugural CJBS-TCF Conference: Theory Meets Practice: Breaking 20<sup>th</sup> Century Habits in Market Research
- Session Co-Organizer, Triennial Invitational Choice Symposium\*
- INFORMS Marketing Science Doctoral Consortium Faculty\*
- Session Organizer, INFORMS Marketing Science Conference\*
- Program Committee, Yale Marketing-Industrial Organization Conference\*

- Session Organizer, American Economic Association Meetings\*
- Co-organizer, Duke-UNC Conference on Structural Models in Labor, Aging and Health
- Program committee, International Public Economic Theory Conference, Duke University

#### University of Cambridge

Head of Marketing Subject Group  
 Subject Group Heads Committee  
 Center of South Asian Studies Management Committee  
 CJBS Faculty Board  
 Marketing Faculty Recruiting Committee  
 Marketing Subject Group Coordinator for Executive Education Teaching  
 Marketing Ph.D. Admissions Committee  
 Discussion Panel, Ph.D. Students' Research Lunch

#### Yale University

Junior Faculty Recruiting Committee  
 Ph.D. Admissions Committee  
 Faculty Panel, Yale SOM Alumni Leadership Convocation

#### Duke University

Junior Faculty Recruiting Committee

#### Professional Memberships

INFORMS Society of Marketing Science  
 American Economic Association  
 Econometric Society

#### **Selected Conferences and Seminar Presentations** (\*indicates multiple times)

American Economic Association Meetings\*, Carnegie Mellon University, Columbia University, Bureau of Economic Analysis, BU-Harvard-MIT Health Economics Seminar, Duke University\*, Econometric Society Meetings\*, Federal Reserve Board, FDA Economics of Tobacco Roundtable, Georgetown University, Harvard Business School, INFORMS Marketing Science Conference\*, Invitational Triennial Choice Symposium\*, Johns Hopkins University, LSE, Marketing Dynamics Conference\*, NBER\*, New York University, UTD-FORMS Conference\*, Stanford Institute of Theoretical Economics\*,

University of California-Berkeley-SICS\*, University of Cambridge, University of Michigan,  
University of Wisconsin-Madison, Yale University\*, Yale China-India Insights Conference\*

## **Teaching Experience**

### University of Cambridge

Customer Centricity: A Strategic Approach (MBA, EMBA, Executive Education)  
Strategic Branding 2.0: The Cambridge Approach (Executive Education)  
Strategic Marketing Management (Executive Education)  
Design Thinking (EMBA)  
Digital Marketing (Executive Education, Master of Studies)  
Stakeholder Centric Innovation (Executive Education)  
Marketing (MBA core)  
Marketing Concentration Capstone (MBA)  
Marketing Strategy (Ph.D.)  
Quantitative Marketing (Ph.D.)  
Seminar in Reinforcement Learning (Ph.D.)  
Seminar in Matching Estimators (Ph.D.)  
Empirical Industrial Organization (Ph.D.)

### Yale University

Customer (MBA core, Pre-MBA)  
Managing Marketing Programs (MBA elective)  
Marketing & Strategy (Global Pre-MBA)  
Seminar in Quantitative Marketing (Ph.D.)

### Duke University

Managerial Economics (EMBA core)  
Market Intelligence (MBA elective)  
Health Economics (Ph.D., Undergraduate)

### University of Minnesota

Instructor, Mathematics Review Course for incoming Graduate Students  
Instructor, Principles of Microeconomics  
Teaching Assistant, Principles of Macroeconomics  
Guest Lecturer, Principles of Macroeconomics



## **Student Advising**

Ph.D. student advising, Judge Business School, University of Cambridge

Soniya Gupta-Rawal

Sonal Srivastava

Liang Zhao

Ph.D. student advising, School of Management and Dept. of Economics, Yale University

Doug Chung

Elan Fuld

Navid Mojir

Boudhayan Sen

Beomjoon Shin

Undergraduate Senior Essay Advisor, Department of Economics, Yale University

Dakota Myers

Melody Wang

Frank Wu

Leon Zhang

Ph.D. student advising, Department of Economics, Duke University

Padmaja Ayyagari

Derek Brown

Lijing Ouyang

Martin Salm

Justin Trogon

Yang Wang

Supervisor, Independent Study, Fuqua School of Business, Duke University

J. Gaverick Matheny

Ziggy Yoediono