Joseph L. Rotman School of Management
University of Toronto

Rotman

RSM 3052 Course Outline
Marketing (*Spring 2024)*
Course Meets: Mondays 9AM-12PM, Rotman School of Management, Rotman 570

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Objectives: The purpose of this course is to introduce students to the key questions and most common methods used in quantitative marketing. The practice of finance has transformed over the past several decades to be a primarily quantitative field, rooted in ideas from economics. I believe the same process is now happening in marketing. Marketing practice is increasingly quantitative. Many of the most exciting marketing companies in the world apply marketing principles in highly technical ways, including Google, Meta, and Amazon. This transformation of practice was preceded by the rise of the field of quantitative marketing.

A key theme is that rigor is a necessary condition for relevance. In other words, while there are rigorous papers that are not relevant, a research paper cannot be relevant if it is not rigorous. Without careful attention to detail and appropriate use of techniques, research should not be trusted to influence marketing practice or marketing policy.

In each class, we will work through research papers that build rigorous quantitative models of important marketing phenomena. Many of these papers take a social science perspective, with an emphasis on understanding the decisions of managers and consumers. Others take more of an engineering perspective, focusing on designing marketing tools.

Preparation and Prerequisites: The course is meant to be accessible to all marketing PhD students, regardless of the stream though aspects of the course will be technical and use advanced economics and econometrics. It will complement the rest of the first year marketing sequence, building on ideas from the consumer behavior course in the fall and from microeconomics and statistics. For those in the quantitative track, you will be expected to have a deep understanding of the economics and econometrics material from the fall courses.

Class Structure: In class, we will engage in a detailed discussion of the assigned papers. We will discuss research questions, techniques, and the links between the research papers. At the end of each class, I will provide a brief introduction to the topic of the next class, in a format similar to how I teach MBAs. This will frame the discussion on the relevant quantitative papers in the next class. Class will involve a mix of PowerPoint slides, whiteboard derivations, and class discussion.

Assignments & Grading

Problem sets: 30%
There will be 5 problem sets worth 6% each. Problems sets will be handed out during class the week before they are due. There are three types of questions in the problem sets: (i) Identify the research question and core result in a paper, (ii) relate the research question to a traditional marketing concept, (iii) formally derive and interpret the key results of the relevant papers on a topic. The first two parts will anticipate future classes, while the third part will be based on material we have already covered.

Presentations: 20%
Each student will give two 20 minute presentations over the term, focusing on papers of their choosing. Suggested papers for presentation are highlighted in the syllabus with **.

Final exam: 50%
Questions will look like problem set questions, open book but time constrained. Unlike the exams through 2023, there may be additional required readings specifically for the exam.

Readings
A number of papers have been assigned each week.

*Means that everyone in the class (including those auditing) should have read the paper before coming to class.
**Means that it is a suggested paper for presentation.

In addition to those marked with a *, *each student should read at least one other paper carefully* and be ready to discuss it in class. Books are marked with a +, and are meant for students who want to dig into the subject deeply, perhaps after the term is over.

Note that in deciding on the topics and papers, ***I have biased toward topics that Rotman professors know well, and papers that I know well (particularly my own!). This is to ensure expertise, and you should recognize that it comes at the expense of a truly broad and unbiased view of the field***.

Questions to ask when reading a paper

1) What is the research question?
2) What is the main result?
3) What results (if any) help explain this main result?
4) Does the interpretation follow the analysis?
5) How are the results communicated?

If empirical:
a) What is the core identification challenge?
b) What is the data structure?

	Date	Topic	Deliverables
1	**January 16**	Quantitative marketing	
2	**January 23**	Demand estimation	
3	**January 30**	Advertising	Problem set #1
4	**February 5**	Pricing and product lines	
5	**February 12**	Distribution and sales force management	Problem set #2
6	**TBA**	Search, learning, and data-driven marketing	
	February 19	READING WEEK NO CLASS	
7	**February 26**	Branding	Problem set #3
8	**March 4**	Behavioral marketing	
9	**March 11**	Diffusion and Word-of-Mouth	Problem set #4
10	**March 18**	Technological change and AI	
11	**March 25**	Digital economics	Problem set #5
12	**April 1**	Marketing policy	Problem set #6
	April 8	**Final exam**	**3 hours. Open book.**

Week 1: Quantitative Marketing

Perspectives

Athey, Susan, and Michael Luca. 2019. "Economists (and Economics) in Tech Companies." *Journal of Economic Perspectives*, 33 (1): 209-30.

Duflo, Esther. 2017. "Richard T. Ely Lecture: The Economist as Plumber." *American Economic Review*, 107 (5): 1-26.

Mela, Carl F., Jason M.T. Roos, and Yiting Deng. 2013. "A Key Word History of Marketing Science." *Marketing Science*, 31, 1 (January-February): 8-18.

Roth, A. E. 2002. "The Economist as Engineer: Game Theory, Experimentation, and Computation as Tools for Design Economics." *Econometrica*, 70: 1341-1378.

Rubinstein, A. 2006. "Dilemmas of an Economic Theorist." *Econometrica*, 74: 865-883.

+Dube, Jean-Pierre, and Peter Rossi. 2019. *Handbook of the Economics of Marketing Volume 1*. Elsevier, Amsterdam.

Methods

Goldfarb, Avi, Catherine Tucker, and Yanwen Wang. 2022. "Quasi-Experimental Methods in Marketing", *Journal of Marketing*.

Lambrecht, Anja, and Catherine Tucker. 2018. "Field Experiments in Marketing." In *Handbook of Marketing Analytics.* Eds Natalie Mizik and Dominique Hanssens.

Reiss, Peter C. 2011. "Descriptive, Structural, and Experimental Empirical Methods in Marketing Research." *Marketing Science*, 30 (6): 950-964.

Moorthy, K.S. 1993. "Theoretical Modeling in Marketing." *Journal of Marketing*, 57 (April): 92- 106.

Shmueli, G. 2010. "To Explain or To Predict?" *Statistical Science*, 25 (3): 289-310.

+Angrist, Joshua D., and Jörn-Steffen Pischke. 2009. *Mostly Harmless Econometrics: An Empiricist's Companion*. Princeton University Press: Princeton NJ.

+Lilien, G. L., P. Kotler, and K. S. Moorthy. 1992. *Marketing Models.* Prentice Hall.

+Tirole, J. 1988. *The Theory of Industrial Organization*. MIT Press.

Data

Edelman, Benjamin. 2012. "Using Internet data for economic research." *Journal of Economic Perspectives*, 26: 189-206.

Einav, Liran, and Jonathan Levin. 2013. "The Data Revolution and Economic Analysis." NBER Working Paper #19035.

Boegershausen, J., Datta, H., Borah, A., & Stephen, A. T. 2022. Fields of Gold: Scraping Web Data for Marketing Insights. *Journal of Marketing*, *86*(5), 1–20. https://doi.org/10.1177/00222429221100750

Week 2: Demand Estimation

Conjoint

*Allenby, Greg, Nino Hardt, and Peter Rossi. 2019. "Empirical Foundations of Conjoint Analysis." Chapter 3 in Dube and Rossi, eds. *Handbook of the Economics of Marketing, Volume 1*: 151-192.

Ding, Min. 2007. "An Incentive-Aligned Mechanism for Conjoint Analysis." *Journal of Marketing Research* 46: 214-223.

Green, P.E., Krieger, A.M., and Wind, Y. 2001. "Thirty Years of Conjoint Analysis: Reflections and Prospects." *Interfaces,* 31 (3) Part 2: S56-S73.

Toubia, Olivier, Duncan I. Simester, John R. Hauser, and Ely Dahan. 2003. "Fast Polyhedral Adaptive Conjoint Estimation." *Marketing Science,* 22 (3): 273-303.

Scanner data

*Dube, Jean-Pierre. 2019. "Microeconometric models of consumer demand." Chapter 1 in Dube and Rossi, eds. *Handbook of the Economics of Marketing, Volume 1*: 1-68.

*Guadagni, Peter M., and John D. Little. 1983. "A Logit Model of Brand Choice Calibrated on Scanner Data." *Marketing Science,* 2 (3): 203-238.

Bruno, Hernán A., Javier Cebollada, and Pradeep K. Chintagunta. 2018. "Targeting Mr. or Mrs. Smith: Modeling and Leveraging Intrahousehold Heterogeneity in Brand Choice Behavior." *Marketing Science,* 37 (4): 631-648.

Chintagunta, Pradeep K. Dipak C. Jain, and Naufel J. Vilcassim. 1991. "Investigating Heterogeneity in Brand Preferences in Logit Models for Panel Data." *Journal of Marketing Research,* 28 (4): 417- 428.

Dubé, J.-P., G. J. Hitsch, and P. E. Rossi. 2010. "State dependence and alternative explanations for consumer inertia." *RAND Journal of Economics,* 41(3): 417– 445.

Fader, P. S., and B. G. S. Hardie. 1996. "Modeling consumer choice among SKUs." *Journal of Marketing Research,* 33(4): 442–452.

Mehta, N., Rajiv, S., and K. Srinivasan. 2003. "Price Uncertainty and Consumer Search: A Structural Model of Consideration Set Formation." *Marketing Science,* 22 (1): 58-84.

Rossi, Peter E., and Greg M. Allenby. 2003. "Bayesian Statistics and Marketing." *Marketing Science,* 22 (3): 304-328.

Other

Berry, S., J. Levinsohn, and A. Pakes. 1995. "Automobile Prices in Market Equilibrium." *Econometrica,* 63 (4): 841-890.

**Farrell, Max H., Tengyuan Liang, and Sanjog Misra. 2020. "Deep Learning for Individual Heterogeneity." Working paper, University of Chicago.

Ghose, Anindya, Panagiotis Ipeirotis, and Beibei Li. 2012. "Designing Ranking Systems for Hotels on Travel Search Engines by Mining User-Generated and Crowdsourced Content." *Marketing Science,* 31(3): 493-520.

Moe, Wendy W., and Peter S. Fader. 2004. "Dynamic Conversion Behavior at E-Commerce Sites." *Management Science,* 50 (3): 326-335.

**Webb, Ryan, Nitin Mehta, and Ifat Levy. 2021. Assessing Consumer Demand with Noisy Neural Measurements. *Journal of Econometrics* 222, 89-106.

Week 3: Advertising

Theory

*Bagwell K. 2007. “The economic analysis of advertising.” Armstrong M, Porter R, eds. *Handbook of Industrial Organization, Volume 3* (North-Holland, Amsterdam): 1701–1844. **Required 1701-1724 otherwise optional.*

Iyer, Ganesh K., David A. Soberman and J. Miguel Villas-Boas. 2005. “The Targeting of Advertising.” *Marketing Science,* 24 (3): 461-476.

Empirics—Offline

*Shapiro, Brad. 2018. "Positive Spillovers and Free Riding in Advertising of Prescription Pharmaceuticals: The Case of Antidepressants." *Journal of Political Economy,* 126 (1): 381-437.

Ackerberg, D. 2001. “Empirically Distinguishing Informative and Prestige Effects of Advertising.” *RAND Journal of Economics,* 32 (2): 100-118.

**Hartmann, Wesley R., and Daniel Klapper. 2018. “Super Bowl Ads.” *Marketing Science,* 37 (1): 78-96.

Huang, Guofang, Matthew Shum, and Wei Tan. 2019. “Is pharmaceutical detailing informative? Evidence from Contraindicated drug prescriptions. *Quantitative Marketing and Economics,* 17: 135-160.

Lodish, Leonard M. et al. 1995. “How T.V. Advertising Works: A Meta-Analysis of 389 Real World Split Cable T.V. Advertising Experiments.” *Journal of Marketing Research,* 32 (May): 125-139.

Shapiro, Brad, Gunter Hitsch, and Anna Tuchman. 2021. TV Advertising Effectiveness and Profitability: Generalizable Results from 288 Brands. *Econometrica* 89(4): 1855-1879.

Empirics—Online

*Blake, Thomas, Chris Nosko, and Steven Tadelis. 2015. “Consumer Heterogeneity and Paid Search Effectiveness: A Large-Scaled Field Experiment.” *Econometrica,* 83 (1): 155- 174.

*Johnson, Garrett. 2023. Inferno: A guide to field experiments in online display advertising. *Journal of Economics of Management Strategy* Forthcoming.

*Goldfarb, Avi and Catherine Tucker. 2011. “Online Display Advertising: Targeting and Obtrusiveness.” *Marketing Science,* 30 (3): 389-404.

**Gordon, Brett, Robert Moakler, and Florian Zettelmeyer. 2023. Predictive Incrementality by Experimentation (PIE) for Ad Measurement. Working paper, Northwestern University.

*Simonov, Andrey, Chris Nosko, and Justin M. Rao. 2018. “Competition and Crowd-Out for Brand Keywords in Sponsored Search.” *Marketing Science,* 37 (2): 200-215.

Johnson, Garrett, Randall Lewis, and Elmar Nubbemeyer. 2017. “Ghost Ads: Improving the Economics of Measuring Online Ad Effectiveness.” *Journal of Marketing Research,* 54 (6): 867-884.

**Gordon, Brett R., Florian Zettelmeyer, Neha Bhargava, Dan Chapsky. 2019. “A Comparison of Approaches to Advertising Measurement: Evidence from Big Field Experiments at Facebook.” *Marketing Science,* 38 (2): 193-225.

**Liaukonyte, Jura, Thales Teixeira, and Kenneth C. Wilbur. 2015. “Television Advertising and Online Shopping.” *Marketing Science,* 34 (3):311-330.

**Todri, Vilma. 2021. Frontiers: The Impact of Ad-Blockers on Online Consumer Behavior. *Marketing Science.*

Week 4: Pricing and product lines

Price and Demand

*Chevalier, J., A. Kashyap, and P. Rossi. 2003. "Why Don't Prices Rise During Periods of Peak Demand? Evidence From Scanner Data." *American Economic Review*, (June).

*Dube, JP, and Sanjog Misra. 2023. Personalized Pricing and Consumer Welfare. *Journal of Political Economy* 131(1).

Lambrecht, Anja, and Kanishka Misra. 2017. "Fee or Free: When Should Firms Charge for Online Content?" *Management Science,* 63 (4): 1150-1165.

**Haviv, Avery. 2022. "Consumer Search, Price Promotions, and Counter-Cyclic Pricing." *Marketing Science,* 41(2), 294-314.

Moshary, Sarah Anna Tuchman, Natasha Vajravelu. 2024. Gender-Based Pricing in Consumer Packaged Goods: A Pink Tax? *Marketing Science* Forthcoming.

Pattabhiramaiah, Adithya, S. Sriram, and Shrihari Sridhar. 2018. "Rising Prices Under Declining Preferences: The Case of the U.S. Print Newspaper Industry." *Marketing Science,* 37 (1): 97-122.

Product Choices

*Hermosilla, Manuel, Fernanda Gutiérrez-Navratil, and Juan Prieto-Rodríguez. 2018. "Can Emerging Markets Tilt Global Product Design? Impacts of Chinese Colorism on Hollywood Castings." *Marketing Science,* 37 (3): 356-381.

Bronnenberg, Bart, Tobias Klein, and Yan Xu. 2024. Consumer Time Budgets and Grocery Shopping Behavior. *Management Science*. Forthcoming.

Draganska, Michaela, DC Jain. 2005. "Product-line length as a competitive tool." *Journal of Economics & Management Strategy,* 14 (1): 1-28.

Moorthy, K. S. 1984. "Market Segmentation, Self-Selection, and Product Line Design." *Marketing Science,* 3: 288-307.

Orhun, Yesim. 2009. "Optimal product line design when consumers exhibit choice set-dependent preferences." *Marketing Science*.

Rao, Anita. 2020. "Strategic Research and Development Investment Decisions in the Pharmaceutical Industry." *Marketing Science,* 39 (3): 564-586.

**Zhao, Clarice, Nitin Mehta, and Mengze Shi. 2021. The Consumption of Serial Media Products and Optimal Release Strategy. Working paper. University of Toronto.

Week 5: Distribution and sales force management

Retailing

*Ellickson, Paul B., and Sanjog Misra. 2008. "Supermarket Pricing Strategies." *Marketing Science*, 27 (5): 811-828.

Basker, Emek. 2007. "The Causes and Consequences of Wal-Mart's Growth." *Journal of Economic Perspectives,* 21 (3): 177-198.

Caoui, El Hadi, Brett Hollenbeck, and Matthew Osborne. 2022. "The Impact of Dollar Store Expansion on Local Market Structure and Food Access." Working paper, University of Toronto.

**Dubé, Jean-Pierre, Günter J. Hitsch, and Peter E. Rossi. 2018. "Income and Wealth Effects on Private-Label Demand: Evidence from the Great Recession." *Marketing Science,* 37 (1): 22-53.

Knight, Samsun. 2023. Retail Demand Interdependence and Chain Store Closures. Working paper, Brown University.

**Lafontaine, Francine. 1992. "Agency Theory and Franchising: Some Empirical Results." *RAND Journal of Economics,* 23 (2): 263-283.

**Moorthy, Sridhar. 2005. "A General Theory of Pass-Through in Channels with Category Management and Retail Competition." *Marketing Science*.

**Sudhir, K. 2001. "Structural Analysis of Manufacturer Pricing in the Presence of a Strategic Retailer." *Marketing Science,* 20 (3): 244-264.

Online/Offline

*Wang, Kitty, and Avi Goldfarb. 2017. "Can offline stores drive online sales?" *Journal of Marketing Research,* 54 (5): 706-719

Balasubramanian, S. 1998. "Mail versus Mall: A Strategic Analysis of Competition between Direct Marketers and Conventional Retailers." *Marketing Science,* 17: 181-195.

Forman, Chris, Anindya Ghose, and Avi Goldfarb. 2009. "Competition between Local and Electronic Markets: How the benefit of buying online depends on where you live." *Management Science*, 54: 47-57.

Sales force management

*Misra, Sanjog, and Harikesh Nair. 2011. "A Structural Model of Sales-Force Compensation Dynamics: Estimation and Field Implementation." *Quantitative Marketing and Economics*, 9 (3): 211-225.

Chung, Doug, Thomas Steenburgh, and K. Sudhir. 2014. "Do bonuses enhance sales productivity? A dynamic structural analysis of bonus-based compensation plans." *Marketing Science*, 33 (2): 165-187.

**Wernerfelt, Birger. 1994. On the Function of Sales Assistance. *Journal of Marketing* 13(1): 68-82.

Week 6: Search, learning, and data-driven marketing

Search

*Bronnenberg, Bart J., Jun B. Kim, and Carl F. Mela. 2016. "Zooming In on Choice: How Do Consumers Search for Cameras Online?" *Marketing Science,* 35 (5): 693-712.

*Ursu, Raluca. 2018. "The Power of Rankings: Quantifying the Effect of Rankings on Online Consumer Search and Purchase Decisions." *Marketing Science,* 37 (4): 530-552.

**Honka, Elizabeth. 2014. "Quantifying Search and Switching Costs in the US Auto Insurance Industry." *RAND Journal of Economics,* 45 (4): 847-884.

Honka, Elisabeth, Ali Hortacsu, and Matthijs Wildenbeest. 2019. "Empirical search and consideration sets." Chapter 4 in Dube and Rossi, eds. *Handbook of the Economics of Marketing, Volume 1*: 193-258.

**Natan, O. R. (2021). Choice frictions in large assortments. Working Paper, University of California, Berkeley.

Stigler, G. J. 1961. "The economics of information." *The Journal of Political Economy, 69* (3): 213-225.

Hema Yoganarasimhan. 2020. "Search Personalization Using Machine Learning". *Management Science* 66(3):1045-1070.

Learning

*Huang, Yufeng. 2019. "Learning by doing and the demand for advanced products". *Marketing Science*, 38 (1): 107-128.

Erdem, T., Keane, M.P., and Sun, B. 2008. "A Dynamic Model of Brand Choice When Price and Advertising Signal Product Quality." *Marketing Science,* 27 (6): 1111-1125.

**Osborne, Matthew. 2011. "Consumer Learning, switching costs, and heterogeneity: A structural examination." *Quantitative Marketing and Economics,* 9 (1): 25-46.

Zhang, Juanjuan. 2010. "The sound of silence: Observational learning in the US kidney market." *Marketing Science,* 29 (2): 315-335.

Data-Driven Marketing

*Ascarza, Eva. 2018. "Retention futility: Targeting high-risk customers might be ineffective". *Journal of Marketing Research*.

**Ron Berman, Ayelet Israeli (2022) The Value of Descriptive Analytics: Evidence from Online Retailers. Marketing Science 41(6):1074-1096

**Feit, Elea and Ron Berman. 2019. "Test & Roll: Profit-Maximizing A/B Tests." *Marketing Science,* 38 (6): 913-1084.

McCarthy, Daniel M., and Peter Fader. 2018. "Customer-Based Corporate Valuation for Publicly Traded Noncontractual Firms." *Journal of Marketing Research,* 55 (5): 617-635.

Netzer, Oded, James M. Lattin, and V. Srinivasan. 2008. "A Hidden Markov Model of Customer Relationship Dynamics." *Marketing Science,* 27 (2): 185-204.

Week 7: Branding

*Bronnenberg, Bart, JP Dube, and Sridhar Moorthy. 2019. "The Economics of Brands and Branding." *Handbook of the Economics of Marketing*, chapter 6, Eds, Jean-Pierre Dube and Peter Rossi. p. 291-358.

*Borkovsky, Ron, Avi Goldfarb, Avery Haviv, and Sridhar Moorthy. 2017. "An Empirical Study of the Dynamics of Branding." *Marketing Science,* 36 (4): 471-499.

*Hollenbeck, Brett. 2018. "Online Reputation Mechanisms and the Decreasing Value of Chain Affiliation." *Journal of Marketing Research*, 55 (5): 636-654.

Ailawadi, Kusum, Donald Lehmann, and Scott Neslin. 2003. "Revenue Premium as an Outcome Measure of Brand Equity." *Journal of Marketing*, 67 (October): 1-17.

Bronnenberg, Bart J., Sanjay Dhar, and J-P Dube. 2009. "Brand History, Geography, and the Persistence of Brand Shares." *Journal of Political Economy*, 117 (1): 87-115.

**Bronnenberg, Bart, JP Dube, Matthew Gentzkow, and Jesse Shapiro. 2017. "Do pharmacists buy Bayer? Informed shoppers and the brand premium." *Quarterly Journal of Economics*, 130 (4): 1669-1726

**Chen, Nan, and Zemin (Zachary) Zhong. 2024. History and Country-of-Origin Effects. *Marketing Science*. Forthcoming.

Goldfarb, Avi, Qiang Lu, and Sridhar Moorthy. 2009. "Measuring Brand Value in an Equilibrium Framework." *Marketing Science*, 28 (1): 69-86.

Keller, Kevin L. 1993. "Conceptualizing, Measuring, and Managing Customer Based Brand Equity." *Journal of Marketing*, 57 (January): 1-22.

**Moorthy, Sridhar. 2012. "Can Brand Extension Signal Product Quality?" *Marketing Science*, 31 (5): 756-770.

Qian, Yi. 2008. "Impacts of Entry by Counterfeiters." *Quarterly Journal of Economics*, 123 (4): 1577–1609.

Tadelis, Steven. 1999. "What's in a Name? Reputation as a Tradeable Asset." *The American Economic Review*, 89 (3): 548–563.

Waldfogel, J., & Chen, L. 2006. "Does information undermine brand? Information intermediary use and preference for branded web retailers." *The Journal of Industrial Economics*, 54 (4): 425-449.

Wernerfelt, B. 1988. "Umbrella Branding as a Signal of New Product Quality: An Example of Signaling by Posting a Bond." *Rand Journal of Economics*, 19: 458-466.

**Yu, Jungju. 2021. A Model of Brand Architecture Choice: A House of Brands vs. a Branded House. *Marketing Science* 40(1), 147-167.

+Aaker, David. 1995. *Building Strong Brands*. Free Press.

Week 8: Behavioral marketing

*Ho, T.-H., Lim, N., and Camerer, C. 2006. "Modeling the psychology of consumer and firm behavior with behavioral economics." *Journal of Marketing Research, 43* (3): 307–331.

DellaVigna, Stefano. 2018. "Structural Behavioral Economics." *Handbook of Behavioral Economics,* eds, Bernheim, DellaVigna, and Laibson.

Consumers

*Grubb, Michael, and Matthew Osborne. 2015. "Cellular Service Demand: Biased Beliefs, Learning, and Bill Shock." *American Economic Review,* 105 (1): 234-271.

Anderson, ET, and DI Simester. 2003. "Effects of $9 price endings on retail sales: Evidence from field experiments." *Quantitative Marketing and Economics,* 1 (1): 93-110.

**Blake, Tom, Sarah Moshary, Kane Sweeney, Steve Tadelis. 2021. "Price Salience and Product Choice". *Marketing Science* 40(4):619-636

Brown, Jennifer, Tanjim Hossain, and John Morgan. 2010. "Shrouded Attributes and Information Suppression: Evidence from the Field." *Quarterly Journal of Economics,* 859-876. s

Grundl, Serafin, and You Suk Kim. 2019. "Consumer mistakes and advertising: The case of mortgage financing." *Quantitative Marketing and Economics,* 17: 161-213.

**Narayanan, Sridhar, and Puneet Manchanda. 2012. "An Empirical Analysis of Individual Level Casino Gambling Behavior." *Quantitative Marketing and Economics,* 10 (1): 27-62.

**Strulov-Shlain, Avner. 2022. "More than a Penny's Worth: Left-Digit Bias and Firm Pricing." *Review of Economic Studies.*

Webb, R., Glimcher, P. W., & Louie, K. 2021. "The Normalization of Consumer Valuations: Context-Dependent Preferences from Neurobiological Constraints". *Management Science*

Firms

*Goldfarb, Avi, and Mo Xiao. 2011. "Who thinks about the competition? Managerial ability and strategic entry in US local telephone markets." *American Economic Review,* 101 (7): 3130-3161.

*Huang, Yufeng, Paul Ellickson, and Mitchell Lovett. 2022. "Learning to Set Prices". *Journal of Marketing Research.*

**DellaVigna, Stefano, and Matthew Gentzkow. 2019. "Uniform Pricing in US Retail Chains." *The Quarterly Journal of Economics,* 134 (4): 2011-84.

Hitsch, Gunter, Ali Hortacsu, and Xiliang Lin. 2021. Prices and promotions in US Retail Markets. *Quantitative Marketing and Economics* 19, 289-368.

Hortacsu, Ali, Fernando Luco, Steven Puller, and Dongni Zhu. 2019. "Does Strategic Ability Affect Efficiency? Evidence from Electricity Markets." *American Economic Review,* 109 (12): 4302-42.

Week 9: Diffusion and Word of Mouth

Diffusion

*Bass, F. 1969. "A new product growth model for consumer durables." *Management Science,* 15: 215-227.

*Griliches, Z. 1957. "Hybrid corn: an exploration in the economics of technological change.: *Econometrica,* 25: 501-522.

Catalini, Christian, and Catherine Tucker. 2017. "When early adopters don't adopt." *Science,* 357, Issue 6347: 135-136.

Hitsch, Günter J. 2006. "An Empirical Model of Optimal Dynamic Product Launch and Exit Under Demand Uncertainty." *Marketing Science,* 25: 25-50.

Iyengar, Raghuram, Jae Young Lee, and Christophe Van Den Bulte. 2015. "Social Contagion in New Product Trial and Repeat." *Marketing Science,* 34: 408-429.

Nair, Harikesh. 2019. "Diffusion and pricing over the product life cycle". Chapter 7 in Dube and Rossi, eds. *Handbook of the Economics of Marketing,* 1: 360-439.

Sudhir, K., and Debabrata Talukdar. 2015. "The 'Peter Pan Syndrome' in Emerging Markets: The Productivity-Transparency Trade-off in IT Adoption." *Marketing Science,* 34 (4): 500-521.

**Yoganarasimhan, Hema. 2017. "Identifying the Presence and Cause of Fashion Cycles in Data." *Journal of Marketing Research*, 54: 5-26.

+Moore, Geoffrey. 1991. *Crossing the Chasm.* Harper Business Essentials.

+Rogers, Everett. 1995. *Diffusion of Innovations.* Fourth Edition.

Word of Mouth (WOM)

*Chevalier, Judith and Dina Mayzlin. 2006. "The Effect of Word of Mouth on Sales: Online Book Reviews." *Journal of Marketing Research,* 43 (3): 345-354.

*Reimers, Imke, and Joel Waldfogel. 2021. "Digitization and Pre-Purchase Information: The Causal and Welfare Impacts of Reviews and Crowd Ratings". *American Economic Review*.

**Bollinger, Bryan, Kenneth Gillingham, A. Justin Kirkpatrick, Steven Sexton. 2022. "Visibility and Peer Influence in Durable Good Adoption". *Marketing Science* 41(3):453-476.

Conley, TG, and Udry CR. 2010. "Learning about a new technology: Pineapple in Ghana." *American Economic Review,* 100 (1): 35–69.

Manski, CF. 1993. "Identification of endogenous social effects: The reflection problem." *Review of Economic Studies,* 60 (3): 531–542.

Manski, C. 2000. "Economic analysis of social interactions." *Journal of Economic Perspectives,* 115–136.

Nair, HS, P Manchanda, and T Bhatia. 2010. "Asymmetric social interactions in physician prescription behavior: The role of opinion leaders." *Journal of Marketing Research,* 47 (5): 883-895.

**Seiler, Stephan, Song Yao, and Wenbo Wang. 2017. "Does Online Word of Mouth Increase Demand? (And How?) Evidence from a Natural Experiment." *Marketing Science,* 36 (6): 838-861.

**Tucker, Catherine, and Juanjuan Zhang. 2011. "How Does Popularity Information Affect Choices? A Field Experiment" *Management Science,* 57 (5): 828-842.

Week 10: Technological Change and Artificial Intelligence

Technological change

*Bresnahan, Timothy F., and M. Trajtenberg. 1995. "General purpose technologies 'Engines of growth'?" *Journal of Econometrics*, 65 (1): 83–108.

Bresnahan, Tim and Shane Greenstein. 1996. "Technical Progress and Co-invention in Computing and in the Uses of Computers." *Brookings Papers on Economic Activity: Microeconomics*, 1-83.

Goettler, R. L. and B. R. Gordon. 2011. "Does AMD Spur Intel to Innovate More?" *Journal of Political Economy*, 119: 1141–1200.

**Igami, Mitsuru. 2017. "Structural Analysis of Creative Destruction in the Hard Disk Drive Industry, 1981–1998." *The Journal of Political Economy*, 125 (3): 798–847.

Artificial Intelligence

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