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## ANALYTICS FOR MANAGING CUSTOMER VALUE

Period: a.y. 2024/2025

Class times: II

Instructor:

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### Course description

In this PhD course, participants will delve into a comprehensive and critical exploration of both seminal and current research literature in the field of marketing, with a specific emphasis on the analytical methodologies utilized for addressing tangible marketing problems with individual-level secondary data. The course offers a rigorous examination of influential research, melding theoretical knowledge with empirical exploration. It navigates through the complexities of multi-item choices, conditional decision-making, and customer heterogeneity while focusing on recent advancements in targeting strategies driven by marketing responsiveness. It also delves into multi-method research approaches for comprehensive causal insights. Moreover, it explores recent methodological approaches for managing customer privacy and ensuring algorithmic fairness in marketing, while also confronting modern challenges in data analysis. Participants will receive real-world data or may use their own, to independently face these challenges, enhancing hands-on experience. The course will culminate in the proposal of a multi-method research project, which can also be undertaken as a team, bridging theoretical understanding with practical application.

### Course Material

#### Session 1: Modeling Marketing Data: Scientific Foundations

- Brynjolfsson, Erik, and Kristina McElheran (2016), "The Rapid Adoption of DataDriven Decision-Making," *American Economic Review*, 106(5): 133-39.
- John R. Hauser; Steven M. Shugan *Marketing Science*, Vol. 2, No. 4. (Autumn, 1983), pp. 319-360.
- Steve Shugan (2002), "Editorial *Marketing Science*, Models, Monopoly Models, and Why We Need Them" *Marketing Science*, 21, 3 , 223-228.
- Shugan S. (2015), "Market Structure Research" in *The History of*

Marketing Science. Eds. R.Winer and S.A.Neslin.

- Wedel, M., & Kannan, P. K. (2016). Marketing analytics for data-rich environments. *Journal of Marketing*, 80(6), 97-121.

### **Session 2: Multi-Item and Conditional Choices in Marketing: Model Validation and Parameter Recovery Approaches**

- Russell, Gary J. (2015) Brand Choice Models, History of Marketing Science, eds. R.Winer and Scott A. Neslin.
- Harlam and Lodish "Modeling Consumers' Choices of Multiple Items" *Journal of Marketing Research* Vol. 32, No. 4 (Nov., 1995)
- Seetharaman, P.B., Chib, S., Ainslie, A. et al. Models of Multi-Category Choice Behavior. *Market Lett* 16, 239-254 (2005).
- Richards, T.J. A nested logit model of strategic promotion. *Quant Market Econ* 5, 63-91 (2007).
- Levine, J., & Seiler, S. (2023). Identifying state dependence in brand choice: Evidence from hurricanes. *Marketing Science*, 42(5), 934-957.
- Hwang, H., Malhotra, N. K., Kim, Y., Tomiuk, M. A., & Hong, S. (2010). A comparative study on parameter recovery of three approaches to structural equation modeling. *Journal of Marketing research*, 47(4), 699-712.
- Blattberg, R. C., Kim, B. D., & Neslin, S. A. (2008). Database Marketing: Analyzing and Managing Customers (Chapter 10: The predictive modeling process)

### **Session 3: The Complexity of Dealing with Customer Heterogeneity**

- Valentini, Sara, Montaguti, Elisa and Neslin, Scott A. (2011), "Decision Process Evolution in Customer Channel Choice," *Journal of Marketing*, 75 (November), 72-86.
- Ansari, Asim, Carl F. Mela, and Scott A. Neslin (2008), "Customer Channel Migration," *Journal of Marketing Research*, 45 (1), 60-76.
- Netzer, O, Padilla, N and Montoya, R (2019) Heterogeneity in HMMs: Allowing for Heterogeneity in the Number of States. Working Paper. Columbia Business School.
- Dew, Ryan, Asim Ansari, and Yang Li. "Modeling dynamic heterogeneity using Gaussian processes." *Journal of Marketing Research* 57.1 (2020): 55-77.

### **Session 4: Marketing Responsiveness: Rethinking Targeting Strategy**

- Bult, J. R., & Wansbeek, T. (1995). Optimal selection for direct mail. *Marketing Science*, 14(4), 378-394.
- Narayanan, S., & Manchanda, P. (2009). Heterogeneous learning and the targeting of marketing communication for new products. *Marketing science*, 28(3), 424-441.
- Retention futility: Targeting high-risk customers might be ineffective Eva Ascarza (2018) *Journal of Marketing Research* (2018) 55(1),

Winner, 2023 Weitz-Winer-O'Dell Award Winner, 2018 Paul E. Green Award

- Huang, Ta-Wei, and Eva Ascarza. "Doing More with Less: Overcoming Ineffective Long-Term Targeting Using Short-Term Signals." *Marketing Science* (2024).
- Smith, A. N., Seiler, S., & Aggarwal, I. (2023). Optimal price targeting. *Marketing Science*, 42(3), 476-499.
- Blattberg et al. (2008) "Database marketing: Analyzing and Managing Customers", Chapter 10: The predictive modeling process, springer.

### **Session 5: Multi-Method Research, Field Experiments and Analytical Techniques in Pursuit of Causal Depth and Insights with Secondary Data**

- Montaguti, Elisa, Scott A. Neslin, and Sara Valentini. "Can marketing campaigns induce multichannel buying and more profitable customers? A field experiment." *Marketing Science* 35.2 (2016): 201-217.
- Lambrecht, A., & Tucker, C. (2013). When does retargeting work? Information specificity in online advertising. *Journal of Marketing research*, 50(5), 561-576.
- Christine Tucker and Juanjuan Zhang (2011) "How does popularity information affect choices? A field experiment" *Management Science*, 57 (5).
- Ascarza, Iyengar and Schleicher (2016) "Proactive Churn Prevention Using Plan Recommendations: Evidence from a Field Experiment." *Journal of Marketing Research*

### **Session 6: Algorithmic Fairness in Marketing Strategies: Ethical Implications and Privacy in Data Analysis**

- Eliminating unintended bias in personalized policies using Bias Eliminating Adapted Trees (BEAT) Eva Ascarza and Ayelet Israeli (2022)
- Fabris, A., Baranowska, N., Dennis, M.J., Hacker, P., Saldivar, J., Borgesius, F.Z. and Biega, A.J., 2023. Fairness and Bias in Algorithmic Hiring. arXiv preprint arXiv:2309.13933.
- Proserpio, D., Hauser, J. R., Liu, X., Amano, T., Burnap, A., Guo, T., ... & Yoganarasimhan, H. (2020). Soul and machine (learning). *Marketing Letters*, 31, 393-404.
- Anand, Piyush, and Clarence Lee. "Using deep learning to overcome privacy and scalability issues in customer data transfer." *Marketing Science* 42.1 (2023): 189-207.
- Rafieian, Omid, and Hema Yoganarasimhan. "Targeting and privacy in mobile advertising." *Marketing Science* 40, no. 2 (2021): 193-218.

- Luca M, Pronkina E, Rossi M. The Evolution of Discrimination in Online Markets: How the Rise in Anti-Asian Bias Affected Airbnb During the Pandemic. Marketing Science. 2024 Feb 20.

Please read the assigned papers in advance and be prepared to discuss them in class

### **Assessment Methods**

Effective class participation includes attendance to sessions and making an active and constructive contribution to the discussion having read in advance the suggested paper, making constructive comments. Participants might also be required to participate to team assignments with the objective of applying the models discussed in class. Finally, participants will be asked to submit a proposal of a conceptual paper proposal.

### **Project: Concept Paper**

For this assignment, you are tasked with creating a concept paper. This should be based on the themes and topics we've explored in our class. You can use provided datasets, public data, or your own data. Your task is to articulate an original concept or idea. This should be detailed both in narrative form and through fundamental equations. The paper's length is capped at 8 pages, using Times New Roman, 12 pt. font, and 2 line spacing. There's no requirement for an extensive literature review, keeping it concise and focused on your idea.

The various components of the course grade are weighted as follows:

Assignments	20%
Project	50%
Class Participation	30%

### **Faculty Bio.**

Sara Valentini's area of expertise lies in measuring and analyzing marketing effectiveness and customer profitability, especially in the fields of channel choice and customer relationship management. Her research interests also include product-returns dynamics, privacy, and customer data acquisition. The common thread running through her work is the evaluation of the impact of marketing actions along different stages of the customer journey. Most recent research interest focuses on tracing sustainable choices using GPS Data. Her research has appeared in Journal of Marketing, Marketing Science, Journal of

the Academy of Marketing Science, Journal of Retailing, Journal of Interactive Marketing, Marketing Letters, and in other outlets such as MIT press. She is the Curriculum Coordinator for the Ph.D. program in Marketing, and she initiated and co-chairs the 'Customer Journeys in a Digital World' conference, now in its fourth edition.