EMPIRICAL MODELS IN MARKETING
(MKTG 957)

Spring 2019

Professor Raghu Iyengar

Marketing Department Small Conference Room: 757 JMHH
Friday 10am – 1:00pm

Objectives:

This seminar-based class is designed to introduce doctoral students to the fundamental empirical models and estimation methods utilized in quantitative academic marketing papers. That is, if this class is successful, you should know the basic purpose, data requirements, mathematical formulation, and equally important the jargon/verbiage, associated with a wide assortment of quantitative marketing models.

Outline of Each Class Session:

Each class session will have a similar structure. We will review two published papers (in some rare cases possibly three), consisting of a "classic marketing paper" that seminally introduced a concept/model to the literature, followed by a more recent updated version of the same concept. In this manner, students will become familiar with the tradition of marketing science, but also gain knowledge of "modern updates" to those papers. Given that only two papers are assigned for each week, a deep and detailed coverage of each paper, with detailed pre-reading on the students' part, is expected.

Course Materials and Website:

Copies of the papers sit on the course canvas site which can be accessed by logging into (https://wharton.instructure.com/login).

Grading:

Your grade in the course will consist of three parts.

(i) Each week, you are required to turn in AT THE BEGINNING OF CLASS, a no more than 5-page summary of the papers from that week. These short summaries will

be graded based on your ability to: (i) concisely summarize the papers, (ii) provide a description of opportunities to extend these papers into novel research areas, (iii) your ability to raise critical questions about any aspect of the paper of your choosing, and (iv) most importantly, tie one or more of the papers to a problem that YOU ARE WORKING ON.

(ii) The reason that we are meeting as a class is for you to share your ideas with others. Come to class prepared to discuss papers that are assigned.

(iii) As a final project, I will ask each of you to construct a no more than 30-minute presentation summarizing "Lecture N+1". That is, if there was one additional lecture, what would it be on? You pick the paper, or two papers, write up a summary of them (20 pages or less), and prepare a presentation on the topic.

Contact Information

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Course Outline

Sessions

1. **March 15th Integrated Models for Multiple Outcomes/Product Categories**

   Paper 1: Chintagunta, P.K. (1993), "Investigating Purchase Incidence, Brand Choice and Purchase Quantity Decisions of Households, *Marketing Science,* Vol. 12, No. 2, pp. 184-208.

   Paper 2: Chiang, J. (1991), "A Simultaneous Approach to Whether, What and How Much to Buy Questions", *Marketing Science,* 10 (4), pp. 297-315.

   Paper 3: Gupta, S. (1988), "Impact of Sales Promotions on When, What and How Much to Buy," Journal of Marketing Research, 30 (4), 342-355.

2. **March 22nd Learning Models**

   Paper 1: Erdem, T. and Keane, M.P. (1996), "Decision-Making under Uncertainty: Capturing Dynamic Brand Choice Processes in Turbulent Consumer Goods Markets", *Marketing Science,* Vol. 15, No. 1, pp. 1-20.

   Paper 2: Iyengar, Raghuram, Asim Ansari and Sunil Gupta (2007), "A Model of Consumer Learning for Service Quality and Usage," *Journal of Marketing Research,* 44 (4), 529-544.

3. **March 29th Machine Learning Models in Marketing**

   Paper 1: Tirunillai, Seshadri, and Gerard J. Tellis (2014), "Mining marketing meaning from online chatter: Strategic brand analysis of big data using latent dirichlet allocation." Journal of *Marketing Research*, 51, no. 4: 463-479.

   Paper 2: Timoshenko, Artem, and John R. Hauser (2019), "Identifying customer needs from user-generated content," *Marketing Science,* forthcoming

   Paper 3: Toubia, Olivier, Garud Iyengar, Renée Bunnell, and Alain Lemaire (2019), "Extracting Features of Entertainment Products: A Guided Latent Dirichlet Allocation Approach Informed by the Psychology of Media Consumption," *Journal of Marketing Research*, 56, no. 1: 18–36.

3. **April 5th Heterogeneity**

   Paper 1: Rossi, P.E., McCulloch, R.E., and Allenby, G.M. (1996), "The Value of Purchase History Data in Target Marketing", *Marketing Science,* Vol. 15, No. 4, pp. 321-340.

Paper 2: Kamakura, Wagner and Russell, Gary. (1989), "A Probabilistic Choice Model for Market Segmentation," *Journal of Marketing Research*, 26, 379-390.

5. April 12th Hidden Markov Models (I am away to Michigan on April 12th so we can discuss when to have this class)

Paper 1: Netzer, O., Lattin, J.M., and Srinivasan, V. (2008), "A Hidden Markov Model of Customer Relationship Dynamics", *Marketing Science*, Vol. 27, No. 2, pp. 185-204.

Paper 2: Montoya, Ricardo, Oded Netzer, and Kamel Jedidi. "Dynamic Allocation of Pharmaceutical Detailing and Sampling for Long-Term Profitability." *Marketing Science* 29, no. 5 (2010): 909-924.

6. April 19th Endogeneity

Paper 1: Villas-Boas, J.M. and Winer, R.S. (1999), "Endogeneity in Brand Choice Models", *Management Science*, Vol. 45, No. 10, pp. 1324-1338.

Paper 2: Petrin, A. and Train, K. (2009), "A Control Function Approach to Endogeneity in Consumer Choice Models", *Journal of Marketing Research*, Volume XLVI.

April 26th Student Presentations of Lecture N+1