Marketing 397: Marketing Models II

Spring 2013

Instructor: Jason Duan
Meeting Time: Wednesday 2:00-5:00pm
Office Hours: Wednesday 9:00am-12:00pm or by appointment
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Course Objects

This is an advanced PhD seminar course that introduces state-of-the-art theoretical and empirical marketing models using deductive mathematical analysis and inductive statistical reasoning. The objective is to learn to create to novel quantitative marketing models and estimation methods and critically evaluate the models in the literature of quantitative marketing.

Reference Books

Basic Statistics

Rossi, Allenby and McCulloch (2005), "Bayesian Statistics and Marketing," Wiley.
Wooldridge (2010), "Econometric Analysis of Cross Section and Panel Data," 2nd Edition, MIT Press.

Discrete Choice and Dynamical Models

Train (2003), "Discrete Choice Methods with Simulation", Cambridge University Press. (free and downloadable at http://elsa.berkeley.edu/books/choice2.html)
Adda and Copper (2003), "Dynamic Economics," MIT Press.
Anderson, de Palma and Thisse (1992), "Discrete Choice Theory of Product Differentiation," MIT Press.

Models for Event History and Spatial Data

Kalbfleisch and Prentice (2002), "The Statistical Analysis of Failure Time Data," 2nd Edition, Wiley Series in Probability and Statistics.
Cox and Isham (1980), "Point Processes," Chapman & Hall/CRC.
Banerjee, Gelfand and Carlin (2003), "Hierarchical Modeling and Analysis for Spatial Data," Chapman & Hall/CRC

Other readings including original journal articles and book chapters will be included in Class Schedule, Topics and Readings.

Class Schedule, Topics and Readings

Readings with asterisks are recommended, not required.

Meeting 0, Jan. 16: **Course overview; introduction to Bayesian inference, MCMC and sequential Monte Carlo methods.**

Meeting 1, Jan. 23: **Basic Duration/ Survival Models**

van den Berg (2001), "Duration Models: Specification, Identification and Multiple Durations," Chapter 55, (Sections 1-5 for required reading), Handbook of Econometrics V.

Meeting 2, Jan. 30. **Duration models in marketing**

Jain and Vilcassim (1991), "Investigating Household Purchase Timing Decisions: A Conditional Hazard Function Approach," Marketing Science, 10, 1-23.

Seetharaman and Chintagunta (2003), "The Proportional Hazard Model for Purchase Timing: A Comparison of Alternative Specifications," Journal of Business and Economic Statistics, 21, 3, 368-382.

Meeting 3, Feb. 6: **Competing risks and correlated hazard**

Park and Fader (2004), "Modeling Browsing Behavior at Multiple Websites," Marketing Science, 23, 280-303.

Braun and Schweidel (2011), "Modeling Customer Lifetimes with Multiple Causes of Churn," Marketing Science, 30, 881-902.

Meeting 4, Feb. 13: **Stochastic models for recurrent events**

Montgomery, Li, Srinivasan and Liechty (2004), "Modeling Online Browsing and Path Analysis Using Clickstream Data," Marketing Science, 23(4), 579-595.

Bijwaard, Philip Franses and Paap (2006), "Modeling Purchases as Repeated Events," Journal of Business and Economic Statistics, 24(4), 487-502.

Meeting 5, Feb. 20: **Spatial models in marketing**

Bronnenberg and Mahajan (2001), "Unobserved retailer behavior in multimarket data: Joint spatial dependence in market shares and promotion variables," Marketing science, 20, 284-299.

Bronnenberg and Sismeiro (2002), "Using multimarket data to predict brand performance in markets for which no or poor data exist," Journal of marketing research, 39, 1-17.

* Albuquerque, Bronnenberg, and Corbett (2007), "A spatiotemporal analysis of the global diffusion of ISO 9000 and ISO 14000 certification," Management science, 53(3), 451-468.

Meeting 6, Feb. 27: **Structural choice models and its applications**

Berry, Levinsohn and Pakes (1995), "Automobile Prices in Market Equilibrium," Econometrica, 63, 841–890.

Nevo (2001), "Measuring Market Power in the Ready-to-Eat Cereal Industry," Econometrica, 69, 307-342.

* Anderson, de Palma and Thisse (1988), "The CES and the Logit: Two Related Models of Heterogeneity," Regional Science and Urban Economics, 18, 155-164.

Meeting 7, Mar. 6: **Multiple discrete choice of categories and products**

Chintagunta, P. and I. Song (2007) "A Discrete/Continuous Model for Multi-Category Purchase Behavior of Households," Journal of Marketing Research, 44, November, 595-612

Dubé (2004), "Multiple Discreteness and Product Differentiation: Demand for Carbonated Soft Drinks," Marketing Science, 23, 66-81.

* Hendel (1999), "Estimating Multiple-Discrete Choice Models: An Application to Computerization Returns," Review of Economic Studies, 66, 423-446

Meeting 8, Mar. 20: **Discrete choice with social interactions**

Brock and Durlauf (2001), "Discrete Choice with Social Interactions," Review of Economic Studies, 68, 235-260.

Hartman (2009), "Demand Estimation with Social Interactions and the Implications for Targeted Marketing," Marketing Science, 29, 4, 586-601.

* Bresnanhan and Reiss (1991), "Empirical Models of Discrete Games," Journal of Econometrics, 48, 57-81.

Meeting 9, Mar. 27: **Dynamic models: estimation**

Rust (1987), "Optimal Replacement of GMC Bus Engines: An Empirical Model of Harold Zurcher," Econometrica, 55, 999-1033.

Hotz and Miller (1993), "Conditional Choice Probabilities and the Estimation of Dynamic Models," Review of Economic Studies, 60, 497-529.

* Keane and Wolpin (1994), "The Solution and Estimation of Discrete Choice Dynamic Programming Models by Simulation and Interpolation: Monte Carlo Evidence," Review of Economics and Statistics, 76, 648-672.

Meeting 10, Apr. 3: **Dynamic models: estimation**

Bajari, Benkard and Levin (2007), "Estimating Dynamic Models of Imperfect Competition," Econometrica, 75, 1331-1370.

Imai, Jain and Ching (2009), "Bayesian Estimation of Dynamic Discrete Choice Models," Econometrica, 77, 1865-1899.

* Aguirregabiria and Mira (2010), "Dynamic Discrete Choice Structural Models: A survey," Journal of Econometrics, 156, 38-67.

Meeting 11, Apr. 10: **Dynamic models in marketing: learning**

Erdem and Keane (1996), "Decision-making under Uncertainty: Capturing Dynamic Brand Choice Processes in Turbulent Consumer Goods Markets," Marketing Science, 15, 1-20.

Narayanan and Manchanda (2009), "Heterogeneous Learning and the Targeting of Marketing Communication for New Products," Marketing Science, 28, 424-441.

* Shin, Misra and Horsky (2012), "Disentangling Preferences and Learning in Brand Choice Models," Marketing Science, 31, 115-137.

Meeting 12, Apr. 17: **Dynamic models in marketing: 4Ps**

Nair (2007), "Intertemporal Price Discrimination with Forward-Looking Consumers: Application to the US Market for Console Video-Games," Quantitative Marketing and Economics, 5, 239-292.

Yao and Mela (2011), "A Dynamic Model of Sponsored Search Advertising," Marketing Science, 30, 447-468.

* Dubé, Hitsch and Manchanda (2005), "An Empirical Model of Advertising Dynamics," Quantitative Marketing and Economics, 3, 107–144.

Meeting 13, Apr. 24: **Dynamic models in marketing: network effects**

Dubé, Hitsch and Chintagunta (2010), "Tipping and Concentration in Markets with Indirect Network Effects," Marketing Science, 29, 216-249.

Ryan and Tucker (2012), "Heterogeneity and the Dynamics of Technology Adoption," Quantitative Marketing and Economics, 10, 63-109.

* Nair, Manchanda and Bhatia (2010), "Asymmetric Social Interactions in Physician Prescription Behavior: The Role of Opinion Leaders," Journal of Marketing Research, 47, 883 – 895.

Meeting 14, May. 1: **Dynamic models in marketing: entry and exit**

Hitsch (2006), "An Empirical Model of Optimal Dynamic Product Launch and Exit Under Demand Uncertainty," Marketing Science, 25, 25-50.

Zhu, Singh and Manuszak (2009), "Market Structure and Competition in the Retail Discount Industry," Journal of Marketing Research, 66, 453-466.

* Seim (2006), "An Empirical Model of Firm Entry with Endogenous Product-Type Choices," Rand Journal of Economics, 37, 619-640.