**PhD Seminar in Marketing: Empirical Models in Marketing**

**Spring 2015**

# Professor Asim Ansari Course: B9615- 001

517 Uris Hall, 212-854-3476 Fri: 10:00AM to 1:00 PM

E-mail: [maa48@columbia.edu](mailto:maa48@columbia.edu) Fri: 9:00AM-12:00 PM (Feb 27, Apr 24)

Office Hours: open door policy 328, Uris Hall

This seminar will focus on empirical modeling in Marketing. The course focuses on the basic set of tools and skills needed for quantitative modeling for marketing decisions. Specifically, the course has two objectives:

* Acquaint students current modeling techniques and key substantive findings, and
* Enable students to build their own quantitative models for marketing problems.

The course will cover a range of topics. We will study and discuss a few important articles that are relevant for each topic. The aim is that such discussions will stimulate critical thinking and foster an appreciation of the different facets involved in empirical modeling.

The course will take a “hands on” approach to research. Classes will be a combination of lectures, discussions of assigned articles, and hands-on empirical analysis. What you get out of this course depends on what you — and your fellow seminar participants — put into it. You are expected to contribute to class discussions. You should actively listen and think critically about the concepts and issues. Reading the required papers for each class is the best way to prepare for class participation. You should be willing and able to present your analysis and viewpoint to the class when the opportunity presents itself.

Also each one of you will be expected to prepare a short critique (2-3 pages) and lead the discussion on a couple of the papers (the assignment of papers will be arranged during the first week of class). When leading the discussion on a paper you should focus on:

1. A succinct summary of the major contributions of the work and a clear explanation of any potentially confusing aspects (this part should brief and short, we all read the paper).
2. A careful critique of the research, including a discussion of the paper’s major strengths and weaknesses (spend most of the time here).
3. Future research issues in the problem area.

Each student is required to submit and present a research proposal (8-10 pages) by the end of the semester. You can choose a current managerial or academic issue in marketing that uses quantitative methods. The proposal should include three parts: motivation, *brief* literature review, and suggested approaches to address the research problem. You are not required to actually empirically estimate your model. However, the research problem should have the potential to be converted into a publishable paper in top marketing journals. Presentations of the research proposal are scheduled for the final class **(May 1).**

**Required Book**

Kenneth Train (2009), *Discrete Choice Methods with Simulation*, Cambridge University Press.

The book is available for free from the following web site <http://elsa.berkeley.edu/~train/dcms.html>

**Required Software**

The seminar will include practical exercises; participants should bring a laptop and should download and install the free statistical software R from <http://www.r-project.org/> before the course.

**Student Evaluation**

Class Participation and Discussion 30%

Assignments 30%

Term Paper 40%

**Course Outline\*[[1]](#footnote-1) ,[[2]](#footnote-2):**

**Class # 1, Jan 30: Introduction – Marketing Models**

* Train, K., [*Discrete Choice Methods with Simulation*](http://elsa.berkeley.edu/books/choice2.html), Cambridge University Press, 2009, Chapters 1, 2 and 3.
* Varian, Hall (1997), “[How to Build an Economic Model in Your Spare Time](http://www.jstor.org/stable/10.2307/25604102),” *The American Economist*, 41 (2), 3-10.

**Class # 2 – Feb 6, Logit, Probit and Nested Logit**

* Train, K., [*Discrete Choice Methods with Simulation*](http://elsa.berkeley.edu/books/choice2.html), Cambridge University Press, 2009, Chapters 4 and 5.

**Class # 3 – Feb 13, Logit, Probit and Nested Logit**

* Train, K., [*Discrete Choice Methods with Simulation*](http://elsa.berkeley.edu/books/choice2.html), Cambridge University Press, 2009, Chapters 4 and 5.
* Guadagni , Peter M. and John D. C. Little (1983), “[A Logit Model of Brand Choice Calibrated on Scanner Data](http://www.jstor.org/stable/184043),” [*Marketing Science*](http://www.jstor.org/action/showPublication?journalCode=marketingscience)2(3), 203-238.\*
* Train, Kenneth, Daniel McFadden and Moshe Ben-Akiva (1987), “[The Demand for Local Telephone Service: A Fully Discrete Model of Residential Calling Patterns and Service Choices](http://www.jstor.org/stable/pdfplus/2555538.pdf), The RAND Journal of Economics, Vol. 18, No. 1 (Spring, 1987), pp. 109-123

**Class # 4, Feb 20: Heterogeneity in Choice Models**

* Train, K., [*Discrete Choice Methods with Simulation*](http://elsa.berkeley.edu/books/choice2.html), Cambridge University Press, 2009, Chapters 6 and 11.
* [Discrete and continuous representation of heterogeneity](http://deepblue.lib.umich.edu/bitstream/handle/2027.42/46977/11002_2004_Article_230988.pdf?sequence=1), Marketing Letters, 10 (3), 1999, 217-230, M. Wedel, W.A. Kamakura , N. Arora, A. Bemmaor, J. Chiang, T. Elrod, R. Johnson, P. Lenk, S. Neslin, C.S. Poulsen

* Kamakura, Wagner A. and Gary J. Russell (1989), “[A Probabilistic Choice Model for Market Segmentation and Elasticity Structure](http://faculty.fuqua.duke.edu/~kamakura/My%20Reprints/A%20probabilistic%20choice%20model%20for%20market%20segmentation%20and%20elasticity%20structure.pdf),” *Journal of Marketing Research*, 26 (November), 379-390.\*
* Denzil G. Fiebig, Michael P. Keane, Jordan Louviere, Nada Wasi, (2010) “[The Generalized Multinomial Logit Model: Accounting for Scale and Coefficient Heterogeneity](http://pubsonline.informs.org/doi/pdf/10.1287/mksc.1090.0508)”. *Marketing Science* 29(3):393-421.
* Rossi, Peter E., Robert E. McCulloch and Greg M. Allenby (1996), “[The Value of Purchase History Data in Target Marketing](http://research.chicagobooth.edu/marketing/databases/dominicks/docs/1996_The_Value_of.pdf),” *Marketing Science*, 15, 4, 321-340.\*

**Class # 5, February 27: Cross-Category Models**

* Ainslie, Andrew and Peter Rossi (1998), [Similarities in Choice Behavior Across Product Categories,](http://www.jstor.org/stable/193160) *Marketing Science*, May, 91-106\*
* Manchanda, Puneet, Asim Ansari and Sunil Gupta (1999), [The Shopping Basket: A Model for Multicategory Purchase Incidence Decisions](http://www1.gsb.columbia.edu/mygsb/faculty/research/pubfiles/737/shoppingbasket.pdf), *Marketing Science*, 95-114\*
* Duvvuri, Sri Devi., Asim Ansari and Sunil Gupta (2007), [Consumers' Price Sensitivities Across Complementary Categories](http://www1.gsb.columbia.edu/mygsb/faculty/research/pubfiles/5121/price%20sensitivities.pdf), *Management Science*, Dec, 1933-1945\*

**Class #6, March 9 (?): Models of Multiple-Discreteness**

* Hanemann, Michael (1984), [Discrete/Continuous Models of Consumer Demand, Econometrica](http://www.jstor.org/stable/1913464), 541-561
* Kim, Jaehwan, Greg Allenby and Peter Rossi (2002), [Modeling Consumer Demand for Variety](http://www.jstor.org/stable/1558043), *Marketing Science*, 21, 229-250.\*
* Bhat, C.R., 2005. [A multiple discrete-continuous extreme value model: formulation and application to discretionary time-use decisions](http://www.sciencedirect.com/science/article/pii/S0191261504001274). *Transportation Research Part B*, 39(8), 679-707. \*
* Bhat, C. R. (2008), [The multiple discrete-continuous extreme value (MDCEV) model: Role of utility function parameters, identification considerations, and model extensions](http://www.sciencedirect.com/science/article/pii/S0191261507000677), *Transportation Research, Part* B, 42, 274-303.

**Class #7**, **Mar 27: Dynamics in Choice Models**

* Keane Michael P. (1997), “[Modeling Heterogeneity and State Dependence in Consumer Choice Behavior](http://www.jstor.org/stable/1392335),” [*Journal of Business & Economic Statistics*](http://www.jstor.org/action/showPublication?journalCode=jbusieconstat) 15 (3), 10-327.\*
* Ching, Andrew, Tulin Erdem and Michael Keane, (2013)“[Learning Models: An Assessment of Progress, Challenges and New Developments](http://www-2.rotman.utoronto.ca/andrew.ching/),” (with Tülin Erdem, Michael Keane, *Marketing Science*, 32(6), 913-938.
* Erdem, Tulin and Michael Keane (1996), “[Decision-Making Under Uncertainty: Capturing Dynamic Brand Choice Processes in Turbulent Consumer Markets](http://www.jstor.org/stable/184181),” *Marketing Science,* 15 (1), 1-20.\*

**Class # 8,** **April 3**, **State Space Models in Marketing**

* Chapter 2, and 3, from *Hidden Markov Models for Time Series: An Introduction Using R. MacDonlad and Zucchini (2009).*
* Netzer, Oded, James M. Lattin and V. Srinivasan (2008), “[A Hidden Markov Model of Customer Relationship Dynamics](http://mktsci.journal.informs.org/cgi/reprint/27/2/185),” *Marketing Science*,” 27 (2), 185-204.\*
* Lachaab, Mohamed, Asim Ansari, Kamel Jedidi and Abdelwahed Trabelsi, “[Modeling Preference Evolution in Discrete Choice Models: A Bayesian State-Space Approach](http://link.springer.com/article/10.1007%2Fs11129-006-6559-x), *Quantitative Marketing and Economics*, 4, (1), 57-81\*

**Class # 9, April 10, Handling Endogeneity**

* Train, K., [*Discrete Choice Methods with Simulation*](http://elsa.berkeley.edu/books/choice2nd/Ch13_p315-346.pdf), Cambridge University Press, 2009, Chapter 13.
* Villas-Boas, Miguel and Russell S. Winer (1999), “[Endogeneity in Brand Choice Models](http://www.jstor.org/stable/10.2307/2634842)”, *Management Science*, 45 (10), 1324-1338.\*
* Manchanda, Puneet, Pradeep K. Chintagunta, and Peter E. Rossi (2004), “[Response Modeling with Nonrandom Marketing-mix Variables](http://www.jstor.org/stable/30164711),” *Journal of Marketing Research,* 41 (4), 467-478.\*
* Rossi, Peter, (2014), “Even the Rich Can Make Themselves Poor: The Dangers of IV and Related Methods in Marketing Applications”, <http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2343916>

**Class # 10, April 17: Structural Models in Marketing**

* Train, K., [*Discrete Choice Methods with Simulation*](http://elsa.berkeley.edu/books/choice2nd/Ch13_p315-346.pdf), Cambridge University Press, 2009, Chapter 13.
* Chintagunta, P., Tulin, E., Rossi, P. E., and Wedel, M. (2006),” [Structural Modeling in Marketing: Review and Assessment](http://research.chicagobooth.edu/marketing/docs/StructuralModelingMarketing.pdf)”, *Marketing Science*, 25 (6), 604-616.
* Nevo, Aviv (2000), "[A Practitioner's Guide to Estimation of Random Coefficients Logit Models of Demand](http://onlinelibrary.wiley.com/doi/10.1111/j.1430-9134.2000.00513.x/abstract)," *Journal of Economics & Management Strategy* 9(4), 513-548, 2000.
* “[A Practitioner’s Guide to Bayesian Estimation of Discrete Choice Dynamic Programming Models](http://link.springer.com/article/10.1007%2Fs11129-012-9119-6),” (with Susumu Imai, Masakazu Ishihara and Neelam Jain, Quantitative Marketing and Economics, vol.10(2), pp.151-196, June 2012
* Misra, Sanjog and Harikesh Nair (2011), ''[A Structural Model of Sales-Force Compensation Dynamics: Estimation and Field Implementation](http://faculty-gsb.stanford.edu/nair/documents/MisraNair_StrucuralSalesforceEstimationFieldImplementation.pdf)”**.** *Quantitative Marketing and Economics,* 9(3), September, 211-225\*

**Class # 11, April 24: Models of the Internet**

* Ansari, Asim, Skander Essegaier and Rajeev Kohli (2000), [Internet Recommendation Systems](http://www1.gsb.columbia.edu/mygsb/faculty/research/pubfiles/385/Internet%20Recommendation%20Systems.pdf), *Journal of Marketing Research*, 363-375\*
* Ansari, Asim and Carl Mela (2003), [E-customization](http://www.jstor.org/stable/30038844), *Journal of Marketing Research*, 131-145
* Trusov, Michael, Anand Bodapati and Randolph Bucklin (2010), [Determining Influential Users in Internet Social Networks](http://www.anderson.ucla.edu/faculty/anand.bodapati/Determining-Influential-Users.pdf), *Journal of Marketing Research*, 643-658\*
* Toubia, Olivier, and Andrew T. Stephen (2013), “[Intrinsic versus Image-Related Utility in Social Media: Why Do People Contribute Content to Twitter?](http://www1.gsb.columbia.edu/mygsb/faculty/research/pubfiles/5613/Toubia_Stephen_twitter%20111711.pdf)”, Marketing Science, 32(3), 368-392\*

**Class # 12, May 01**: **Summary and Project** **Presentations**

1. . Subject to change. [↑](#footnote-ref-1)
2. . See links to the papers in the PDF. Most of the papers are also downloadable from JSTOR or ABI/INFORM accessible from Columbia University library, or the websites of the journals accessible from Columbia University library web site. [↑](#footnote-ref-2)