Critical Review of Advanced Marketing Models (3 units)

PART I: Marketing Mix Models (Siddarth)
COURSE SYLLABUS AND SCHEDULE

Instructor: S. Siddarth
HOH 313
Phone: (213) 740-5048 Fax: (213) 740-7828
E-mail: siddarth@marshall.usc.edu

Room/time To be decided, will meet once a week for three hours.

Office Hours: By appointment

Useful Texts: Train, Kenneth (2003), Discrete Choice Methods with Simulation, Cambridge University Press. (Chapters of this book are available for individual use at the author’s website)

Overview and Objectives

The purpose of my half of this course is to acquaint students with the basic research techniques, approaches, and key findings in the realm of disaggregate (i.e., individual-level) marketing models. The thrust of research in this area is to understand, explain, and predict the nature and behavior of markets by modeling behavior at the dis-aggregate or individual level.

The topics are designed to provide a thorough treatment of about one-third of marketing's quantitative modeling field. In this course we cover dis-aggregate models of market response and market structure. It is useful to keep in mind that quantitative modeling also includes aggregate-level models of market response and structure as well as modeling the behavior and decisions of the firm.

Class Format

Each week we will discuss several papers (please refer to the attached schedule), typically oriented around a particular topic, modeling approach, or issue. While students are expected to read all the papers carefully, each paper will be pre-assigned to a student, who will be responsible for making a presentation to the class about the paper.

Each presentation should provide:

- A brief background of the topic area that concisely highlights the major research questions and goals, the theoretical and empirical model, the data and a summary of the main results.
- A careful critique of the research, including a discussion of the paper's major strengths and weaknesses. You should try and make suggestions about at least some of the following issues:
  - Are the research questions addressed interesting? How well do the results answer the question?
  - Are the model assumptions reasonable or realistic?
• An agenda for future research in the problem area. You might think about alternative ways of answering the same question. You should aim to be very precise about your suggestions and comments.

The formal or structured part of the presentation should last about 20 minutes. About 20 minutes of a general discussion by all students and the instructor of the research issues involved in the paper will follow.

**Written Research Proposal**

Students will be required to submit a written proposal for research either on a topic covered in the seminar or a topic related to the general academic thrust of the seminar (individual-level marketing models). The proposal should clearly define the research problem of interest, concisely review relevant literature, define the contribution to be made, and provide an in-depth description of how the research is to be conducted (e.g., what model formulations might be used, what data might be used to test the model, what statistical procedures might be involved). There is no maximum or minimum length for the proposal, but approximately 10 to 15 double-spaced pages usually suffices. A two-page outline of the research proposal is due at the beginning of the fifth class session. This will not be graded, but will serve as a basis for providing early comments, feedback, and guidance on the research proposal. Final papers are due by 4 pm on Friday, December 6, 2019.

**Estimation Exercise**

Students, in teams of two, will also be required to complete and submit a short assignment that involves setting up and estimating a logit choice model. Background on the data set and estimation procedures will be provided during the second week of class. The assignment is due at the beginning of class on Friday, September 27, 2019.

**Basis for Grading**

Participants will be graded based on the quality of their performance in four areas:

Presentation of pre-assigned papers (35%)
Participation in class discussion (15%)
Written research proposal (35%)
Computer exercise (15%)

Please note that it is mandatory to attend all class sessions.
Session 1:
Topic: Discrete Choice Models: Discrete and Continuous Heterogeneity
Models: Random Coefficients Logit, Purchase Incidence and Brand Choice Models

Required Background Reading


Papers for Discussion


Session 2:
Topic: Structural Models, Endogeneity
Models: Instrumental Variables, Joint Estimation of Supply and Demand Models, Empirical Bargaining Models

Background Reading


Papers for Discussion


Session 3:
Topic: Modeling Consideration Sets and Choice Processes
Models: Discrete Choice Models with Thresholds

Papers for Discussion


Session 4:
Topic: Cross-Category and Store Choice Models
Models: Restricted Boltzmann Machine Learning Models

Background Reading


Papers for Discussion


Session 5:
Topic: Policy Applications of Discrete Choice Models

Papers for Discussion


Session 6:
Topic: Advertising Response: Experimental and Quasi Experimental Approaches
Models: Regression Discontinuity and Large Scale Advertising Experiments

Papers for Discussion


Session 7:
Topic: Social and Mobile Marketing
Models: Price customization and Competitive Targeting

Papers for Discussion


**Session 8:**
**Topic: Course Review/Student Research Proposal Presentations**

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chan.usc.edu/otfp
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Critical Review of Advanced Marketing Models (3 units)
Part II: Strategic & Dynamic Models (Tellis)
Spring 2022 Schedule
Course Syllabus
(Revised 27 September, 2021)

Instructor: Gerard J. Tellis
Professor of Marketing, Neely Chair in American Enterprise
Director of Outlier Research in Business (iORB)
Director of USC Marshall Center for Global Innovation
614 HOH. Phone: 213-740-5031 email: tellis@usc.edu
url: www.gtellis.net

Schedule: Day and time to be decided, will meet for 3 hours once a week.

Office Hours: By appointment

Readings: Hard copy available from Doris Meunier in the marketing department.
E-copy on Dropbox for MKT 615

References: Kuhn, The Structure of Scientific Revolutions (free online available)
Lilien, Kotler, & Moorthy, Marketing Models

Description
This part of the seminar covers strategic dynamic models in marketing, with a focus on how dynamic models solve strategic marketing problems. The instructor will provide an introduction to and intuition of key models and an overview of articles in each session (see schedule at end). Papers listed under “Discussion” will be presented and critiqued by students. Papers listed under “Background” give a sense of the literature on the topic but will not be explicitly discussed. Prior knowledge of econometrics, statistics, and time series would be helpful though not required.

One of the best ways for doctoral candidates to understand a research area is to critically review articles describing research in that area. While less efficient than lectures, this approach provides a deeper understanding of research problems, a better appreciation of the research process, and a practice in presentation, than the textbook approach. So the seminar will consist primarily of a discussion of key articles on each topic led by a student presenter. Students will be challenged to critique one of the articles listed for discussion each week and position it in the literature. Students in the audience should contribute constructively to the discussion. For this purpose, students may not use laptops and cellphones in class.

Goals
Upon successful completion of this seminar, students will be able too:
1) Identify important problems in strategic marketing
2) Describe how various dynamic models address these problems.
3) Detail findings in the area.
4) Critically review articles, integrate literature into their publications, and present research.
**Method**

The sessions will involve a discussion of the readings assigned for the day. Students should read *all* papers and participate constructively in the discussion in *every* session, even if they are not responsible for the presentation. In addition, on each session, some students will have one of two assignments: 1) Prepare a summary and critique of a paper or 2) Prepare only a critique of a paper. Students will have to prepare these critiques on PowerPoint and present to the class on the scheduled date. Students should email the presentation to the instructor ahead of class or bring it to class on a thumb drive. They should also email to other students ahead of the class or make handouts (6 slides per page) of the presentation for all participants in the seminar. *Students should not consult notes, reviews, or answers of former students of this course, when preparing these assignments.*

**Attendance**

Students need to attend every session punctually and should inform the instructor ahead of time for any absence or late attendance.

**Grading**

Grades will be based on the instructor’s private assessment of a student’s learning and contribution. Weights will be as follows:

- Class Participation 15%
- Critiques presented 40%
- Partially closed-book final exam 45%

**Final Exam**

The final exam will consist of answering two of four questions in a 3 to 4 hour period. The exam is partially closed book. Students may bring their own hand written or printed notes to the exam but not bring others’ notes and printed or electronic material, articles, or books. They should not use laptops, tablets, or smart phones.

**Legend for Schedule:**

- FDA = Functional Data Analysis
- ADL = Autoregressive Distributed Lag model
- VAR = Vector AutoRegressive model
- DiD = Difference in Difference analysis
- SC = Synthetic Control
- LDA = Latent Dirichlet Allocation
- NLP = Natural Language Programming
# MKT 615 I Strategic Dynamic Models (Tellis)

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<td>1:00 PM</td>
<td>HOH 114</td>
<td>Phil Method</td>
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<td>Philosophy of Science</td>
<td>Discussion: Tellis 2017</td>
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<td>Archival R., DiD</td>
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<td>Market Entry</td>
<td>Discussion: Golder &amp; Tellis 1993; Johnson &amp; Tellis 2008; Zervas, Proserpio &amp; Byers 2017;</td>
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<td>Hazard Models</td>
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<td>Innovation, Takeoff, Disruption</td>
<td>Discussion: Chandy &amp; Tellis 2000; Tellis &amp; Streimersch &amp; Yin 2003; Sood &amp; Tellis 2011; Zhang &amp; Luo 2019</td>
<td>Background: Hauser, Tellis &amp; Griffin 2006</td>
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<td>Koyck, ADL, DID, SC</td>
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<td>Advertising Response</td>
<td>Discussion: Tellis &amp; Chandy &amp; Thaivanich 2000; Teixeira Wedel Pieters 2010; Liaukonyte, Teixeira &amp; Wilbur 2015; Tirunillai &amp; Tellis 2017</td>
<td>Background: Clarke 1976; Sethuraman &amp; Tellis &amp; Briesch 2011; Tellis &amp; Franses 2006;</td>
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<td>Event Analysis; VAR</td>
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<td>Returns to Marketing</td>
<td>Discussion: Fornell et al 2006; Sood &amp; Tellis 2009; Tirunillai &amp; Tellis 2012; Borah &amp; Tellis 2014</td>
<td>Background: Srinivasan &amp; Hanssens 2009; Mizik and Jacobson 2009a; 2009b</td>
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<td>LDA NLP</td>
<td>Mining Networks</td>
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<td>Discussion: Bayus 2012; Tirunillai &amp; Tellis 2014; Toubia &amp; Netzer 2017; Wei 2019</td>
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<td>Fader, Peter (2012)</td>
<td>“Marketing vs Economics: Gymnastics or High-Wire Act?”</td>
<td>Today, Knowledge @ Wharton</td>
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