Humboldt University Berlin

Institute of Marketing

Prof. Dr. Daniel Klapper

Advanced Marketing Modeling

Syllabus WiSe 2025/26

Course Dates:

Lectures	Wednesday,	12:15 – 13:45,	SPA 1, room 22 or digital
Exercises	Thursday,	16:15 – 17:45,	SPA 1, room 22 or digital

Course Description and Objectives:

Evaluating marketing decisions and developing goal-oriented marketing strategies, e.g. maximizing firm profits, depend on the measurement of causal relationships between firms' objectives and marketing activities. In this course, we discuss in depth advanced methods to empirically determine the causal relationship between marketing activities and firms' objectives. In exercise courses students learn how to apply these methods to real data. Special attention is given to modeling the effects of marketing on sales and market share data. In this course we also focus on discrete choice models for individual purchase data and aggregate sales data. Successful participation in this class will enable students to quantify the impact of marketing on key performance measures and to evaluate the success of marketing activities.

Course Prerequisite:

Successful participation of Applied Econometrics (Master course) or an equivalent course.

Course Web Page:

Course material will be made available in the Moodle system of the Humboldt-University Berlin.

Course Reference Materials:

The empirical analyses are done in R. We use a well written textbook that links the computing software R to marketing which is "R for Marketing Research and Analytics" from Chris Chapman and Elea McDonnell Feit (2019, Springer International Publishing). It is recommended to purchase this book.

The following papers and book chapters must be studied in detail:

Berry, S.T. (1994), Estimating Discrete-Choice Models of Product Differentiation, RAND Journal of Economics, Vol. 25 (2), 242-262.
Berry, S. T., Levinsohn, J. & Pakes, A. (1995), Automobile prices in market equilibrium, Econometrica 63(4), 841-890.
Wooldridge, J.M. (2008), Introductory Econometrics, South-Western Cengage Learning, Chapters 2, 3 and 4, 68-166.
Chintagunta, P., V. Kadiyali and N. Vilcassim (2004), Structural Models of Competition: A Marketing Strategy Perspective, *Assessing Marketing Strategy Performance*, eds. C. Moorman and D. Lehmann, Cambridge: Marketing Science Institute, 95-113.
Conlon, Christopher, and Jeff Gortmaker (2020). Best practices for differentiated products demand estimation with PyBLP. *RAND Journal of Economics, 51* (4), 1108-1161.
Nevo, A. (2000), A Practitioner's Guide to Estimation of Random-Coefficient Logit Models of Demand, in: Journal of Economics & Management Strategy, Vol. 9(4), 513-548.
Train, K.E. (2009), Discrete Choice Methods with Simulation, Cambridge University Press, Chapter 3, 4, 6, 8, 9, 10.
https://onlinecourses.science.psu.edu/stat501/node/2

The following books provide additional background:

1. Anderson, S.P., de Palma A. and Thisse, J.-F. (1992), Discrete Choice Theory of Product Differentiation, The MIT Press.
2. Dubin, J. A. (1998), Studies in Consumer Demand – Econometric Methods Applied to Market Data, Kluwer Academic Publishers Group.
3. Franses, P.H. and Paap, R. (2010), Quantitative Models in Marketing Research, Cambridge University Press.
4. Hanssens, D.M., Parsons, L.J. and Schultz, R.L. (2003), Market Response Models: Econometric and Time Series Analysis, Kluwer Academic Publishers Group.
5. Leeflang, P.S.H, Wieringa, J.E., Bijmolt, T.H.A and Pauwels, K.H. (2015), Modeling Markets – Analyzing Marketing Phenomena and Improving marketing Decision Making, Springer.
6. Train, K.E. (2009), Discrete Choice Methods with Simulation, Cambridge University Press. 1st edition is available here: http://elsa.berkeley.edu/books/train1201.pdf.
7. Wooldridge, J.M. (2008), Introductory Econometrics, South-Western Cengage Learning.

Other Course Materials:

All of the topics I will cover have been addressed in the marketing, statistics, and economics literature, both theoretically and in practice. Articles and book chapters relevant to each lecture are named below in the table which shows the sessions and content overview. It is expected that you will have done all of the readings prior to class. If you have questions, bring them to class and I will go over them.

Course Grading:

You have to register for the course via Agnes until Nov 04.
Your grade bases on a portfolio exam. You have to submit 4 special work performances (SWP).
SWP 1: accounts for 25 % of final grade, deadline Nov 17, 4:00pm
SWP 2: accounts for 25 % of final grade, deadline Dec 15, 4:00pm
SWP 3: accounts for 25 % of final grade, deadline Jan 27, 4:00pm
SWP 4: accounts for 25 % of final grade, deadline Feb 17, 4:00pm

All special work performances are posted on Moodle and all special work performances should be passed. Your work on the special work performances must be sent as pdf before the deadline to daniel.klapper@hu-berlin.de. Special work performances must be done individually or in a group of 2 students (BSoE students individually). The page constraints of each special work performance are announced in each the special work performance and are binding.

<u>For students of the BSoE program:</u>

4 Special Work Performances	75%
Final assignment	25%

Course Software:

The majority of computing in the course will be done with R. This will include in-class demonstrations and a tutorial how to use R.

Course Topics:

We will cover the following general topics in this course:

(1) Marketing models and marketing data
(2) Response models for aggregate data
(3) Marketing Analytics with R
(4) Regression analysis for analyzing marketing effects on sales
(5) Discrete choice models of demand
(6) Discrete choice models for aggregated data

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Thursday, 16:15 pm – 17:45 pm, SPA 1, room 22 or digital

CW	Date	L/E/D	Content and Readings
42	Oct 15	L	Course Logistics and Introduction to the Course
43	Oct 22	L	1 Marketing Models and Marketing Data Discussion about the empirical data set and SWP 1
43	Oct 23	D	Intro R, part 1, Pre-recording
44	Oct 29	L	2 Response Models for Aggregated Data
44	Oct 30	D	Intro R, part 2, Pre-recording
45	Nov 04		Registration Deadline in Agnes

45	Nov 05	L	2 Response Models for Aggregated Data
45	Nov 06	D	Intro R, part 3, Pre-recording
46	Nov 12	L	2 Response Models for Aggregated Data
46	Nov 13	E	Discussion about the empirical data set and SWP 1
47	Nov 17, 4:00pm		Deadline for Special Work Performance 1
47	Nov 19	L	3 Regression Analysis Reviewed
47	Nov 20		Dias academicus
48	Nov 26	L	3 Regression Analysis Reviewed
48	Nov 27	E	Exercise on Regression Analysis, Discussion about SWP 2
49	Dec 03	L/E	Feedback Session on SWP 1
49	Dec 04	L/E	Feedback Session on SWP 1
50	Dec 10	L/E	Feedback Session on SWP 1
50	Dec 11	L/E	Feedback Session on SWP 1
51	Dec 15, 4:00pm		Deadline Special Work Performance 2
51	Dec 17	L	3 Discrete Choice Models of Demand 3.1 Methodological Background
51	Dec 18	L	3 Discrete Choice Models of Demand 3.2 Discrete Choice Models for Aggregated Data
02	Jan 07	E	Exercise on Discrete Choice Models for Aggregated Data, Discussion about SWP 3
02	Jan 08	L/E	Feedback Session on SWP 2
03	Jan 14	E	Exercise on Discrete Choice Models for Aggregated Data, Discussion about SWP 3
03	Jan 15	L/E	Feedback Session on SWP 2
04	Jan 21	L/E	Feedback Session on SWP 2
04	Jan 22	L/E	Feedback Session on SWP 2
05	Jan 27, 4:00pm		Deadline Special Work Performance 3
05	Jan 28	E	Exercise on Discrete Choice Models for Aggregated Data, Discussion about SWP 4
05	Jan 29	E	Exercise on Discrete Choice Models for Aggregated Data, Discussion about SWP 4
06	Feb 04	L/E	Feedback session on Special Work Performance 3
06	Feb 05	L/E	Feedback session on Special Work Performance 3
07	Feb 11	L/E	Feedback session on Special Work Performance 3
07	Feb 12	L/E	Feedback session on Special Work Performance 3
08	Feb 17, 4:00pm		Deadline for Special Work Performance 4

CW = Calendar week
L = Lecture
E = Exercise
D = Digital