

Malek Ben Sliman

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EDUCATION	Ph.D. Candidate in Marketing <i>Columbia University</i> , New York, NY Graduate School of Business, Expected Graduation: 2020	Present
	Master of Science in Operations Research <i>Columbia University</i> , New York, NY	2014
	Master of Science in Engineering - Diplôme d'Ingénieur <i>Ecole Centrale Paris</i> , Paris, France Major: Industrial Engineering	2013
	Classes Préparatoires Mathematics-Physics <i>Lycée Louis Le Grand</i> , Paris, France	2011
HONORS and AWARDS	<ul style="list-style-type: none">• ISMS Doctoral Consortium Fellow (2018)• Ph.D. Program Fellowship, Columbia University (2015-Present)• IEOR Outstanding Student Service Award (2014)• Excellence-Major Scholarship, awarded by French Government (2008-2013) Five-year scholarship based on academic merit for attending Lycée Louis Le Grand and Ecole Centrale Paris	
RESEARCH INTERESTS	<ul style="list-style-type: none">• Topics: Social Networks, Diffusion of Information and Word-of-Mouth, Art Valuations, Customer Analytics• Methods: Graph Theory, Empirical Modeling, Bayesian Statistics, Machine Learning, Econometrics, Unstructured Data	
WORKING PAPERS	<p><i>The Extended Directed Friendship Paradox</i> Malek Ben Sliman and Rajeev Kohli. Submitted at <i>Operations Research</i>. The friendship paradox says that on average your friends have more friends than you. Equivalently, in an undirected graph, the average degree of the nodes is no greater than the average degree of the terminal node of a random walk of length one. We generalize this result in two ways: (1) by considering directed graphs, which also allow one-sided relations, such as between followers and leaders; and (2) by characterizing the relations between the expected values of the in and out degrees of the terminal nodes of random alternating walks of length $2k$ and $2k + 1$, where $k \geq 0$. The limiting value of these averages is proportional to the largest singular value of the associated adjacency matrix, and to its largest eigenvalue in the special case of an undirected graph. We interpret the results for one-sided relations (e.g., between leaders and followers) and two-sided relations (e.g., between friends).</p>	

R2M Index 1.0: Assessing the Relevance to Marketing of Academic Marketing Research

Kamel Jedidi, Bernd Schmitt, Malek Ben Sliman, and Yanyan Li. Revision invited at *Journal of Marketing*.

Has marketing academia lost its relevance for marketing practice? To move beyond the long-lasting conceptual debate, this article assesses this question empirically by employing a text-mining methodology on academic marketing articles. We develop version 1.0 of the R2M (Relevance to Marketing) Index and validate it against external measures: the index correlates with relevance measures, such as practice awards and practitioner evaluations of articles, and articles in marketing journals have a higher score than articles in disciplinary journals in psychology and economics. Moreover, we find that articles published in the *Journal of Marketing* have the highest R2M score followed by *Marketing Science*, *Journal of Marketing Research*, and *Journal of Consumer Research*. We suggest that journal editors and authors use the R2M Index to assess the relevance of an article, and marketing practitioners to identify relevant articles. Because the index will always be a work in progress that requires continuous improvement, we discuss how to overcome limitations by including more journals, designing further safeguards against “gaming the system,” and moving from relevance to business impact.

WORK IN PROGRESS

Leveraging the Friendship Paradox for Seeding in Asymmetric Networks

Malek Ben Sliman and Rajeev Kohli. In preparation, to be submitted at *Management Science*.

A critical assumption of the friendship paradox is the symmetry of the relationship. That is, if two people are friends, then each is the other’s friend. In social networks like Facebook where this assumption is satisfied, the friendship paradox implies that firms can potentially achieve faster and more widespread diffusion of information by seeding it with the friends of a group of people than with people in the group itself. We generalize the result to allow one-sided (leader/follower) relations and examine the implications for seeding in social networks like Twitter where messages (such as tweets) can be transmitted in only one direction, from leaders to followers. We use the results to compare seeding with (1) leaders, (2) followers, and (3) “friends,” a sample of users selected by ignoring the asymmetry in relations. We obtain necessary and sufficient conditions under which each of three seeding methods obtains the highest number of followers per seed. We analyze a subset of Twitter data and find that seeding with leaders performs better than the other two methods.

Adaptive Customization

Rajeev Kohli, Khaled Boughanmi and Malek Ben Sliman. In preparation, to be submitted at *Marketing Science*.

To facilitate product search, e-commerce websites often allow online shoppers to screen alternatives by sequentially selecting product features. Such screening provides two types of information about the shopper: an explicit preference for the selected features, and an implicit preference ordering over the features he/she might subsequently select. We propose a methodology for customizing the feature menu and recommending alternatives each time a shopper uses an additional screening feature. The proposed method assumes that there are segments of consumers, each using a different EBA rule for screening alternatives. Both the segment-membership probability and the probability to using a sequence of one or more of still-available features is updated each time a shopper selects a feature. We use this information to iteratively customize the filtering menu and the recommended products displayed to the shopper. We show how choice data may be used to estimate the model and illustrate its use for customization using data on consumer choices for electronic tablets. Only a few screening steps are needed to identify segment membership. We describe situa-

tions in which the seller's profit is maximized by delaying product recommendations until a shopper has screened alternatives using one or more features. We consider how and why the seller should select a single attribute (e.g., brand name) to design a choice task (e.g., which best-selling brand would you like to see?) that provides the most information and maximizes the expected profits for the seller.

Network Externalities in the Art Market

Malek Ben Sliman, Rajeev Kohli, and Kamel Jedidi. In preparation.

CONFERENCE PRESENTATIONS

"Asymmetric relations and the friendship paradox," *Marketing Science*, Philadelphia, PA, June 2018

DOCTORAL COURSEWORK

- Stochastic Models I, Professor Ward Whitt
- Stochastic Models II, Professor Karl Sigman
- Applied Multivariate Statistics, Professor Kamel Jedidi
- Foundations of Optimization, Professor Jacob Leshno
- Random Graph Theory, Professor Mariana Olvera-Cravioto
- Econometrics I, Professor Jushan Bai
- Econometrics II, Professor Cristoph Rothe
- Economic Theory I-II, Professor Geoffrey Heal
- Economic Theory III-IV, Professor Paolo Siconolfi
- Bayesian Methods in Marketing, Professor Asim Ansari
- Mathematical Models in Marketing, Professor Rajeev Kohli
- Analytical Models, Professor Kinshuk Jerath
- Empirical Models in Marketing, Professor Oded Netzer
- Consumer Behavior I, Professor Eric Johnson
- Consumer Behavior II, Professors Michel Pham and Bernd Schmitt
- Marketing Decisions and Methods, Professor Donald R. Lehmann
- Causal Inference, Professor Jose Zubizarreta
- Industrial Organization I, Professor Andrea Prat
- Industrial Organization II, Professor Kate Ho

TEACHING EXPERIENCE

- Teaching Assistant
 - Pricing Strategies, Columbia Business School, *MBA*, Spring 2017, Spring 2018, Spring 2019
 - Marketing Strategy, Columbia Business School, *EMBA*, Spring 2017, Summer 2017, Spring 2018, Summer 2018, Fall 2018, Spring 2019
 - Marketing Models, Columbia Business School, *MS*, *MBA*, Fall 2016
 - Applied Multivariate Statistics, Columbia Business School, *Ph.D.*, Summer 2015, Fall 2016, Fall 2017, Fall 2018
 - Marketing, Columbia Business School, *MBA*, Fall 2017
 - Digital Marketing, Columbia Business School, *EMBA*, Summer 2018

- MBA Exemption Exam, Columbia Business School, *MBA*, Fall 2017, Spring 2018, Fall 2018
- Introduction to Marketing, School of Professional Studies, *Elective*, Fall 2015, Spring 2016
- Tutorials
 - Introduction to programming in SAS
 - Introduction to programming in R

EXPERIENCE **Graduate Research Assistant** Summer 2014 - Summer 2015
 Columbia University, New York, NY

Summer Intern Summer 2012
 Plasteurop-Panelco SAS, Vonnas, France

**OTHER
 ACTIVITIES and
 INTERESTS**

- Certification in Mixology provided by Columbia Bartending Agency (2014)
- President of the Wine Club at Ecole Centrale Paris (2011-2013)
- Captain of the **Tennis** team at Ecole Centrale Paris (2012-2013)
- Co-Founder and Vice-Captain of the Centrale Cricket Club (2012-2013)