ABHISHEK BORAH

Contact Information

USC Marshall School of Business
Department of Marketing
3660 Trousdale Parkway, ACC 306E
Los Angeles, CA 90089-0443
Email: aborah@usc.edu
Mobile: 213-631-1957
Site: www.abhishekborah.com

Education

Ph.D. Marketing   Anticipated 2013
Marshall School of Business, University of Southern California, Los Angeles, CA

M.A. Applied Operational Research – 1ˢᵗ rank in University (1ˢᵗ Class Honors)   2004
University of Delhi, Delhi, India

B.A. Mathematics (1ˢᵗ Class Honors)   2001
Hindu College, University of Delhi, Delhi, India

Research Interests

Consumer Conversations in Social Media, Internet, Innovation, Behavioral Economics

Papers under Review[*]

"To Make or Not to Make? An Empirical Analysis of the Choice and Payoff to Make vs. Buy Innovations," with Gerard Tellis
Revise & Resubmit: Under **Revision** for 3ʳᵈ submission to **Marketing Science**

"Is All That Twitters Gold? Market Value of Brand Conversations in Social Media," with G. Tellis
Under **Review** at **Marketing Science**
Recognition: University wide 1ˢᵗ prize in the Social Sciences category at USC's 4ᵗʰ Annual Graduate Student Poster Symposium showcasing dissertation research
EMAC 2012 conference bursary award for selection as a finalist for Best Paper based on Doctoral Dissertation, European Marketing Academy Conference, 2012, Lisbon, Portugal

Working Papers[*]

"Do Recalls of One Brand Hurt or Help Rival Brands: Halo Effects in Social Media," with G. Tellis
 Job Market Paper

---

[*]Indicates Abstracts in Appendix

ABHISHEK BORAH (USC MARSHALL)

Work In Progress[*]

"Does Offline Brand Advertising Affect Online Brand Conversations?" with Gerard Tellis
Recognition: Winner and Principal Investigator of **Marketing Science Institute's** "Challenges of
  Communications and Branding in a Digital Era" Research Competition

"What Drives Online Behavior? Role of Offline Ads vs. Online Ads vs. Online Chatter," with
  Gerard Tellis
Recognition: Winner of Research Proposal Competition from **Wharton Customer Analytics
  Initiative** and Organic Co.

Awards

- 2012 Summer Research Travel Grant – USC Marshall School of Business (USD $700)
- EMAC 2012 conference bursary award for selection as a finalist for Best Paper based on
  Doctoral Dissertation, European Marketing Academy Conference, May 2012, Lisbon
- Graduate Student award to attend 2012 Theory & Practice in Marketing Conference,
  May 2012, Harvard University, Boston, USD $500
- University wide 1st prize in the Social Sciences category at USC's 4th Annual Graduate Student
  Poster Symposium for paper "Is All That Twitters Gold? Market Value of Brand Conversations
  in Social Media". Winner among 116 entrants overall and presented with a certificate and cash
  prize of USD $1,000 by the Vice Provost for Graduate Programs
- Jeffry Abbott Memorial Scholarship Award, USC Marshall, 2011, USD $1,000
- Winner and Principal Investigator of Marketing Science Institute's "Challenges of
  Communications and Branding in a Digital Era" Research Competition, with Gerard J. Tellis,
  USD $13,600, June 2011
- Student grant to attend the 8th Annual Quantitative Marketing and Economics Conference, Oct
  2010, UCLA, Los Angeles
- Best Student Reviewer: 2010 Product Development and Management Association (PDMA)
  Annual Research Forum, Oct 2010, Orlando, FL
- Winner of Research Proposal Competition from Wharton Customer Analytics Initiative and
  Organic on display and search advertising (June 2010)
- Travel Grant for Wharton Customer Analytics Initiative's and MSI's Emergence and Impact of
  User-Generated Content Conference, Dec 2009, UPenn, Philadelphia, PA, USD $500
- Ewing Marion Kauffman Scholarship for 7th West Coast Research Symposium on Technology
  Entrepreneurship (15% acceptance rate), Sep 2009, UW, Seattle, WA
- University of Southern California Graduate School Fellowship, 2007-2012
- McKinsey & Company Excellence award for Knowledge Development, 2006
- 1st Rank Holder in Masters in Applied Operational Research, University of Delhi (2004)
- 7th Rank Holder in the High School Leaving Certificate (H. S. L.C.) examination (1996)
- Highest grade in the state for the Social Sciences subject in the H.S.L.C. exams (1996)

Honors and Workshop Acceptances

- Marketing Science Doctoral Consortium Fellow (2012) - Boston University
- 30th Annual University of Houston Doctoral Symposium Fellow as Presenter, TX, 2012
- Accepted candidate for the Columbia-Duke-UCLA Workshop on Quantitative Marketing and
  Structural Econometrics, Aug 10th-12th, 2010 – Duke University

ABHISHEK BORAH (USC MARSHALL)

- 28th Annual University of Houston Doctoral Symposium Fellow as Discussant, TX, 2010
- Marketing Science Doctoral Consortium Fellow (2009) – Univ. Of Michigan

Dissertation

Essays on Consumer Conversations in Social Media[*]
Chair: Gerard J. Tellis
Committee: Lan Luo, Thomas W. Valente, Donna Hoffman (UC Riverside)
Proposal Defended: August 3rd 2011

Essay 1: Is All That Twitters Gold? Market Value of Brand Conversations in Social Media
Essay 2: Do Recalls of One Brand Hurt or Help Rival Brands: Halo Effects in Social Media
Essay 3: Does Offline Brand Advertising Affect Online Brand Conversations?

Conference Presentations

Borah, Abhishek, Tellis, Gerard, "Do Recalls of One Brand Hurt or Help Rival Brands: Halo Effects in Social Media," **34th INFORMS Marketing Science Conference**, June 7th - 9th, 2012, Boston Univ., Boston, MA

Borah, Abhishek, Tellis, Gerard, "Is All That Twitters Gold? Market Value of Brand Conversations in Social Media", **41st European Marketing Academy Conference**, May 22nd -25th, 2012, ISCTE Business School, Lisbon, Portugal (Presented by Co-Author)

Borah, Abhishek, Tellis, Gerard, "To Make or Not to Make? Analysis of the Choice of and Payoff to Make versus Buy Innovations," **2012 Theory & Practice in Marketing Conference**, May 3rd-5th 2012, Harvard University, Boston, MA, Acceptance Rate (29%)

Borah, Abhishek, Tellis, Gerard, "Does a Crisis for One Brand Hurt or Help A Rival? Halo across Rival Brands in Online Conversations," **30th Annual University of Houston Doctoral Symposium**, April 20th -21st, 2012, Univ. of Houston, Houston, TX

Borah, Abhishek, Tellis, Gerard, "Is all that Twitters Gold? Market Value of Digital Conversations in Social Media," **33rd INFORMS Marketing Science Conference**, June 8th -11th, 2011, Rice Univ., Houston, TX

Borah, Abhishek, Tellis, Gerard, "To Make or Not to Make? The Role of Marketing Capability in the Payoff to Make vs. Buy Innovations," **2nd Marketing Strategy Meets Wall Street Conference**, May 12th -14th, 2011, Boston Univ., Boston, MA

Borah, Abhishek, Tellis, Gerard, "To Make or Not to Make? Payoff to Make versus Buy Innovations," **AMA Winter Educator's Conference**, 19th -22nd February 2010, New Orleans, LA (Presented by Co-Author)

Borah, Abhishek, Tellis, Gerard, "To Make or Not to Make? Assessing Market Returns to Make or Buy Innovation," **33rd Annual International PDMA Conference**, Oct 31st - Nov 1st 2009, Anaheim, CA

ABHISHEK BORAH (USC MARSHALL)

Borah, Abhishek, Tellis, Gerard, "To Make or Not to Make? Stock Market Returns to Make versus Buy Innovations," **7th West Coast Research Symposium on Technology Entrepreneurship**, Sep 11th -12th, 2009, Univ. of Washington, Seattle, WA

Borah, Abhishek, Tellis, Gerard, "To Make or Not to Make? Assessing Market Returns to Make or Buy Innovation," **31st INFORMS Marketing Science Conference**, June 4th-6th, 2009, Univ. of Michigan, Ann Arbor, MI

Borah, Abhishek, Tellis, Gerard, "The Market Returns of Make versus Buy as Alternate Paths to Innovations," **38th European Marketing Academy Conference**, May 26th-29th 2009, Audencia Nantes School of Management, Nantes, France

Invited Presentations

Borah, Abhishek, Tellis, Gerard, "What Drives Online Behavior? Role of Offline Ads vs. Online Ads vs. Online Chatter," July 14th 2011, **Wharton Customer Analytics Initiative**, Wharton School, Philadelphia, PA

Borah, Abhishek, Tellis, Gerard, "To Make or Not to Make? The Role of Marketing Capability in the Payoff to Make vs. Buy Innovations," **Center for Global Innovation Advisory Board Meeting**, Sep 11th 2010, USC, Los Angeles (Presented to top innovation executives from Fortune 500 organizations)

Borah, Abhishek, Tellis, Gerard, "Media and Non Media Acquisitions by Digital Giants and their Impact on Stock Price," **USC's Institute for Communication Telecommunication** and Management (CTM) & **Nanyang Technological University** (Singapore) Institute for Media Innovation Interactive Digital Media Workshop Program, 1st August 2008, LA, CA

Technical Skills

- ➲ Modeling: Time Series, Natural Language Processing, Textual Data Mining, Dynamic Panel Data Analysis, Quasi-Experimental Techniques, Social Network Analysis, Empirical I.O.
- ➲ Programming Languages: Visual Basic, C, Perl, HTML
- ➲ Software Packages/Databases: MATLAB, STATA, EViews, AMPL, SAS, SPSS, Minitab, Sawtooth, WinBUGS, MS Access, MS Excel

Teaching

Designed and lectured an undergraduate course on **Internet Marketing and Social Media** during Fall 2010 to a class of 38 students from various disciplines (MKT-425)

Teaching Interests

Social Media, New Product Development, Marketing Strategy, Marketing Research

Service

- ➲ Conference Reviewer: 2010 PDMA Annual Research Forum, Orlando, FL (Oct 2010)
- ➲ Conference Reviewer for Internet Marketing Track: 40th European Marketing Academy Conference, Ljubljana, Slovenia (May 2011)
- ➲ Chair of Special Session on Twitter and Social Media: 33rd INFORMS Marketing Science Conference, Houston, TX (June 2011)

Academic Experience

- ➲ University of Southern California, Los Angeles, CA
  - *Teaching Assistant* for Allen Weiss (Internet Marketing MKT 556)   Spring 2011-12
  - *Teaching Assistant* for Diane Badame (Core Marketing GSBA 509)   Fall 2009
  - *Research Assistant* for Gerard Tellis   2008-2012
  - *Research Assistant* for Lan Luo   Fall 2007
- ➲ Center for Global Innovation, University of Southern California, Los Angeles, CA
  Research Associate: Data collection, analysis for consulting projects   2008-2010

Business Experience

- ➲ McKinsey & Company, Gurgaon, India
  Analyst   Dec 2004-Jun 2007
  - Team Leader of group focusing on marketing analytics
  - Principal analyst for the proprietary Asia Personal Financial Services survey
  - Participated in the design of the research methodology and implemented statistical analysis for a Knowledge Investment Project (KIP), which was a collaboration between the Purchasing and Supply Management (PSM) practice and the Supply Management Institute at the European Business School, Germany
- ➲ CE Info Systems, New Delhi, India
  Research Associate: Participated in the development of the business solutions platform for MapmyIndia.com: India's first online interactive map portal   Jun-Nov 2004
- ➲ Publicis Groupe, New Delhi, India
  Management Trainee: Worked for the strategic planning department carrying out primary & secondary research for clients across industries   2003

Graduate Coursework

Grade Point Average – 3.9/4 (56 units)

Marketing – Core Seminars

Marketing Models in Consumer and Business-to-Business Market:	S. Dutta & A. Dukes
Understanding Consumer and Organizational Buying Behavior:	V. Folkes & D. MacInnis
Buyer Behavior and Interorganizational Marketing:	Gary Frazier & C. W. Park
Strategic and Marketing Mix Models:	G.J. Tellis & S. Siddarth

Economics

Selected Issues in Economic Theory:	Anthony Marino
Econometric Methods:	Roger Moon

ABHISHEK BORAH (USC MARSHALL)

Economic and Financial Time Series I:	Cheng Hsiao
Applied Econometrics:	Cheng Hsiao
Industrial Organization, Price Policies, and Regulation II:	Daniel Ackerberg (UCLA)
Economic and Financial Time Series II:	Roger Moon
Program Evaluation (Quasi-experiments, Descriptive Econometrics):	Geert Ridder & John Strauss

Models

Foundations of Statistical Inference:	Peter Radchencko
Advanced Methods-Quantitative Research:	Merril Silverstein
Quantitative Analysis II:	Halil Toros
Advanced Quantitative Methods in Marketing:	Anthony Dukes & Ken Wilbur
Bayesian Methods and Internet Marketing Models (Audit):	A. Ainslie & R. Bucklin (UCLA)
Survival Analysis:	Gang Li (UCLA)
Social Network Analysis:	Thomas W. Valente

Strategy

Seminar in Strategic Management:	Mark T. Kennedy

Other Training

- ➲ Workshop on Current Methods of Analysis for Experimental Data - Mediation and Moderation Analyses, by **Andrew Hayes** of OSU, Jun 2011
- ➲ Workshop on Dynamic Modeling and Estimation, by **Andrew Ching** of UToronto, Jun 2011
- ➲ Workshop on **Quantitative Marketing & Structural Econometrics**, Duke Univ., Aug 2010
- ➲ Workshop on Research Designs for Causal Inference, **Mathew McCubbins** of USC, Jun 2010
- ➲ Sawtooth Software Workshop on Conjoint Analysis, Seattle, WA, by **Bryan Orme**, March 2007
- ➲ Customized Executive Education program on Business Management **(McKinsey & Company), Indian School of Business**, 2005

Memberships

INFORMS, Society for Marketing Science, International Network for Social Network Analysis (INSNA)

Extra Curriculars

- ➲ Marathon: USC Marathon Team coach & treasurer (2009-2012); USC Marathon Team member (2007-2012); CPR certified; Relay for Life participant (2007, 2008); Completed 10 full marathons; Webmaster for USC Marathon site
- ➲ Quiz: President of Hindu College Quiz Society (1999-2001); Winner of numerous national & university quiz competitions, India; Runner-up twice out of 3 nationally televised quiz shows

ABHISHEK BORAH (USC MARSHALL)

References

Gerard J. Tellis
Professor Marketing, Management, and Organization
Neely Chair of American Enterprise
Director of the Center for Global Innovation
Marshall School of Business
University of Southern California
P.O. Box 90089
Los Angeles, CA, USA
Tel: +1.213.740.5031
Fax: +1.213.740.7828
tellis@usc.edu

Allen M. Weiss
Professor of Marketing
Marshall School of Business
University of Southern California
P.O. Box 90089
Los Angeles, CA, USA
Tel: +1.213.740.5035
Fax +1.213.740.7828
amweiss@marshall.usc.edu

Lan Luo
Assistant Professor of Marketing
Marshall School of Business
University of Southern California
P.O. Box 90089
Los Angeles, CA, USA
Tel: +1.213.740.2497
Fax: +1.213.740.7828
lluo@marshall.usc.edu

Thomas W. Valente
Professor
Director, Master of Public Health Program
Department of Preventive Medicine
Keck School of Medicine
University of Southern California
1000 Fremont Ave
Bldg A Room 5110
Alhambra, CA 91803, USA
Tel: +1.626.457.4139
Fax: +1.626.457.6699
tvalente@usc.edu

Donna Hoffman
Albert O. Steffey Professor of Marketing
Co-Director, Sloan Center for Internet Retailing
A. Gary Anderson Graduate School of Management
Cooperating Faculty, Dept. of Psychology
University of California, Riverside
900 University Avenue
Riverside, CA 92521
Tel: +1.951.827.4848
Fax:+1.951.827.3970
donna.hoffman@ucr.edu

APPENDIX

Dissertation Details (With Abstracts)

Essays on Consumer Conversations in Social Media
Chair: Gerard J. Tellis
Committee: Lan Luo, Thomas W. Valente, Donna Hoffman (UC Riverside)
Proposal Defended: August 3rd 2011

Consumer conversations in social media provide a rich forum for market research. They are spontaneous, passionate, information rich, and live. The ubiquity and availability of such conversations at higher disaggregate temporal levels (e.g., minutes) than sales and market shares mean that such conversations can provide an early diagnosis of firm performance. These conversations can also enable firms to gauge if their marketing mix efforts, such as advertising, are effective. My dissertation uses natural language processing and time series methods to investigate if (1) conversations in Twitter can be a leading indicator of stock returns (2) recalls of one brand can influence negative online conversations of another brand (3) firms' offline advertising is being able to generate interest and positive perceptions for the firm in social media.

Essay 1: Is All That Twitters Gold? Market Value of Brand Conversations in Social Media

Prior researchers have used Twitter to forecast movie revenues (Asur and Huberman 2010; Rui et al. 2010) and the Dow Jones Industrial Average (Bollen et al. 2011). However, no research has investigated the relationship between tweets about brands and the stock market value of firms that own those brands. Moreover, no study links a word-of-mouth metric of a directed social network with stock returns. I collect around 9 million tweets for ten brands such as iPhone, Xbox, Kindle. I use text mining and natural language processing techniques (i.e., vector support machine algorithm) to create measures of volume, valence, and word of mouth for tweets. I find a significant positive relationship between Twitter metrics and stock returns. However, retweet affects and explains stock returns the most. The effect of Twitter metrics on stock returns wears-in immediately reaching an asymptote around the 8th day.

I further collect other media data such as print media (e.g., Wall Street Journal), influential blogs, and consumer forums for the 10 brands and find that the significant effect of retweet persists even after controlling for other media. Further, I find that the volume of media citations and influential blogs has a significant short-term and long-term effect on retweets. However, media citations are retweeted at a faster rate than influential blogs. These results can enable managers to know if they need to monitor consumer conversations in social media, identify the most important metric to monitor, and determine the time they have to nip negative conversations or boost positive conversations.

Essay 2: Do Recalls of One Brand Hurt or Help Rival Brands: Halo Effects in Social Media

Halo refers to the phenomenon whereby positive affect for one brand increases positive affect for a rival. I define **perverse halo** as the phenomenon whereby a negative event for one brand increases negative conversations for a rival. I define **reverse halo** as the phenomenon whereby a negative event for one brand decreases negative conversations for a rival.

I test the existence of such halo effects in a unique context consisting of 6062 online conversations of Japanese and American automobiles during a series of recalls between January 2009 and April 2010 such as the Toyota acceleration crisis. Online conversations are important because

they are spontaneous, passionate, rich, and live. Thus, they can provide an early warning and diagnosis of potential problems. I analyze halo in online conversations using the Vector AutoRegressive (VAR) model, taking advantage of the natural experiment on automobile recalls.

I find strong perverse and reverse halo effects. These halo effects have a short wear-in and a wear-out of about 4 days. Further, I find competitive effects of advertising whereby a firm's advertising increases concerns for rivals. The results indicate that firms must keep an eye on rival's recalls, monitor online conversations, engage in a two-way dialogue in social media, and use advertising when a rival has a product recall.

Essay 3: Does Offline Brand Advertising Affect Online Brand Conversations?

Over the years, offline advertising's efficacy has been repeatedly questioned (Forrester 2010). Clemons (2009) argues that any form of advertising may fail because consumers have low trust in advertising messages from commercial entities (Ariely 2008). He argues that consumers do not trust and need advertising anymore - they get most of their information from online conversations. Thus, there is a suspicion that offline advertising is divorced from online conversations. Managers and academicians want to know if firms' offline advertising can generate interest and positive perceptions for the firm in social media. Indeed, there is a possibility for such positive effects. The creatives of offline advertisements are elaborate and rich in information. These creatives use affect laden content and argument (Tellis 2004). Consumers may respond positively to these claims and emotions online.

In this essay, I first assess the effect of volume of offline advertising on various measures of consumer conversations (volume, valence, retweet, subjectivity, speed, entropy) for 23 product categories (more than 70 brands) across social media sites. I collect daily and hourly level data from two sets of online conversation types – 1) Online Reviews, Blogs and Forums (daily) and 2) Social network Site - (daily and hourly). I next test the effect of the content of advertising on various measures of consumer conversations across 5 product categories. The results of the research can enable managers to know 1) if offline advertising affects online conversations, and in what product categories and social media sites. If yes, managers can use online conversations as an indicator of the efficacy of offline advertising, much before sales and market share results. Prior research has shown that online conversations affects sales (Chevalier and Mayzlin 2006; Liu 2006), 2) what product categories benefit most and least from offline advertising 3) if emotion focused advertisements lead to more positive conversations. Preliminary results indicate that offline advertising affects conversations more in online reviews and forums than in social network sites such as Twitter. Further, consumer durables such as automobiles and digital products such as eReaders, video consoles, and data storage get affected most from offline advertising.

ABHISHEK BORAH (USC MARSHALL)

Abstracts of Papers under Review/Work in Progress

To Make or Not to Make? An Empirical Analysis of the Choice and Payoff to Make vs. Buy Innovations, with Gerard Tellis

Firms constantly grapple with the question of whether to internally develop (make) or acquire (buy) innovations. The literature has not addressed jointly the choice of and payoff to make versus buy innovations for the same sample of firms. Moreover, the literature is unclear whether outcomes of prior innovations affect the make or buy choice. The authors explore the choice and payoff to around 2300 make and buy innovations for 192 firms across 108 industries over a period of 5 years. The authors use the event study method to calculate the payoff, control for firm heterogeneity using random effects models, and use both Heckman selection and Propensity Score Matching models to ensure robustness of the results.

The authors find that make generates a significantly higher payoff than buy. Nevertheless, firms continue to buy. An in-depth analysis provides two reasons for this behavior. First, firms seem to have a memory for the payoff to make but no memory for the payoff to buy. Second, firms tend to buy when they lack commercializations, even though the strategy seems not to pay off. These results suggest that firms see buy as a quick fix for what may be a deep strategic problem. Further analysis suggests that if firms must buy, then they can obtain positive payoffs to buy if they focus on innovations that are related to their expertise and have high customer benefit.

What Drives Online Behavior? Role of Offline Ads vs. Online Ads vs. Online Chatter, with Gerard Tellis

On one hand, more and more advertisers believe that offline advertising (e.g., TV ads) is far less effective than it used to be. On the other hand, US marketers continue to spend billions in paid search and online display advertising (eMarketer 2011). Prior research has not compared the merits of offline versus online advertising. However, researchers are questioning whether any form of advertising, offline or online, relative to user generated content has any impact on affecting buyer behavior (Clemons 2009). Most online consumers get most of their information from online reviews (online chatter). Prior research has not provided an understanding of the impact of online chatter relative to offline and online advertising.

In this paper, we combine individual level daily data of impressions of display advertisements (ads) and clicks on display ads, search ads and success activities (e.g., search inventory button, find a dealer button) with aggregate daily offline advertising data and aggregate daily online chatter data. We estimate a panel vector autoregressive model, and use the generalized impulse response and generalized forecast error variance decomposition functions to estimate the relative effects of online ads, offline ads, and online chatter on clicks of display ads, search ads, and success activities in an automobile manufacturer's website. We find that 1) online chatter is more effective than online and offline ads for clicks on success activities 2) online ads are more effective than both online chatter and offline ads for clicks on search and display ads 3) the wear-time for the effects are short, and 4) offline ads have no positive impact on clicks on display ads, search ads and success activities.