Thursday, 8:30AM

TA01

Trade Room- Lobby Level
ML: Applications I
Contributed Sessions

Session Chair
Vanessa Tianying Song, The University of Sydney, Sydney, Australia.

Thursday, 8:30AM

TA01

Trade Room- Lobby Level
ML: Applications I
Contributed Sessions

1 Predicting Customer Life-Changing Events Based on Individual-Level Financial Transaction Data

Yanhan (Savannah) Tang, Alan Montgomery, Carnegie Mellon University, Pittsburgh, PA, Contact: yanhanta@andrew.cmu.edu

Life-changing events may trigger changes to customers' financial status, spending behavior and income, which in turn could be helpful in optimizing promotional marketing strategies. Practitioners have used life-changing event data for their direct marketing strategies, but this typically requires information from third-party vendors. Predicting customers' life-changing events using financial transactions could help financial services target customers more accurately and faster. Existing research on marketing through life-changing events is underdeveloped; we fill in this gap by reviewing contemporary applied work and developing a novel hierarchical Bayesian model that exploits individual-level financial transaction data to predict life-changing events. The proposed hierarchical Bayesian model enables learning across related transaction time series and dynamically grouping time series based on their similarities and information extracted from transaction descriptions. Semi-structured transaction description information is efficiently integrated into a dynamic knowledge graph, which may be of independent interest and can also interact with the time series. Our methodology can be applied to many other applications (e.g., inventory data, stock market data) as it integrates text labels that describe transactions as well as the numeric and date information of the transactions.

Thursday, 8:30AM

TA01

Trade Room- Lobby Level
ML: Applications I
Contributed Sessions

2 The Effects of Diversity in Algorithmic Recommendations on Digital Content Consumption: A Field Experiment

Guangying Chen[1], Tat Y. Chan[1], Dennis J. Zhang[1], Senmao Liu[2], Yuxiang Wu[2], [1]Washington University in St. Louis, St. Louis, MO, [2]NetEase Cloud Music, Inc., Hangzhou, China. Contact: guangyingchen@wustl.edu

Social media platforms such as TikTok and Facebook are criticized for trapping consumers in "filter bubbles" (Pariser 2011) through personalized recommendations based on users' detailed individual information. Practitioners and regulators have been calling for platforms to tackle the problem by incorporating more diversified content in their recommender systems. We aim to study the causal effects of more diversified personalized recommendations on users' behaviors in practice. By collaborating with NetEase Cloud Music, the world's third-largest music-streaming service company, we developed a new recommender system with more content diversity based on their existing state-of-the-art recommender system. We then conducted a large-scale field experiment where hundreds of millions of users were randomly assigned to receive video recommendations either from the platform's current recommender algorithm or our modified algorithm. Although the new algorithm increased the diversity of recommended content to users, overall there is no clear evidence that it increased the diversity of consumed content, and it also decreased users' consumption level. However, for active users, we find that a 1% increase in recommendation diversity boosted their consumption diversity by 0.55% without reducing their consumption or engagement level. We show that the accuracy of predicting users' preferences is key for the new algorithm to increase the consumption diversity and, when users also highly value the platform, their consumption and engagement levels will not be hurt. The company later adopted our algorithm modification and now uses it to serve millions of customers daily.

Thursday, 8:30AM

TA01

Trade Room- Lobby Level
ML: Applications I
Contributed Sessions

3 Catching Best-Selling Deals Using a Semiparametric Gaussian Copula Approach

Mantian Mandy Hu[1], Xiang Zhou[1], Yuxin Chen[2], Irwin King[1], Jingcun Cao[3], [1]The Chinese University of Hong Kong, Shatin, Hong Kong; [2]New York University - Shanghai, Shanghai, China; [3]Hong Kong University, Southern, Hong Kong. Contact: xiangzhou@link.cuhk.edu.hk

Like predicting the top hits, it is challenging to predict the best-selling deals when they arrive sequentially in contexts such as daily deal websites or live-streaming sales. When making such predictions, the basic idea is to correlate the characteristics of the current options, those of the previous ones, the characteristics of the consumers, and the temporal factors indicating the sequence with the choice decisions of consumers at that moment. It essentially forms a complex high dimensional interdependent joint distribution. The existing machine learning algorithms perform well for most of the options in the data but lose efficiency for those rare ones with low densities in the joint distribution. Low density doesn't imply low purchase likelihood. So this often leads to missing some potential best-selling deals in predictions and eventually results in chaos in logistics and unrealized revenue of sellers and platforms. We propose a semiparametric Gaussian Copula (SGC) approach to address this problem. Specifically, we leverage the means of SGC to generate a complex but flexible joint distribution encompassing all variables. Consumer choice predictions are then derived based on each consumer's likelihood of making that choice and calculated using the conditional posterior of the joint distribution. We apply our model to a proprietary dataset that comprises customers' clickstream data from a daily deal platform. The results show that SGC outperforms the other existing algorithms, such as logit, Cox, and SVM, for deals with low densities and lying as outliers in the joint distribution and when deals exhibit nonlinear dependence at the tail of distributions. It explains the SGC's superior performance in capturing the best-selling deals. This study is the first time in marketing literature to document the advantage of a copula approach in predicting low-density but high-effect events from the perspective of capturing the best-selling products. It pins point a potential reason why it's hard to capture the best-sellers using the existing algorithms.

Thursday, 8:30AM

TA01

Trade Room- Lobby Level
ML: Applications I
Contributed Sessions

4 Recommending the "Right" Product to the "Right" Customer with the "Right" Message via Structural Neural Recommender

Vanessa Tianying Song[1], Shuai Zhang[2], Lina Yao[3], Jake An[4], Steven Qiang Lu[1], [1]The University of Sydney, Sydney, Australia; [2]Amazon, Santa Clara, CA, [3]University of New South Wales, Sydney, Australia; [4]University of Technology Sydney, Sydney, Australia. Contact: tson8934@uni.sydney.edu.au

We propose a new recommender system - structural neural recommender (SNR), which is based on neural networks and operates on a hierarchy paradigm. SNR aims to explore the effectiveness of incorporating different structural information for recommendation.Many recent neural network based recommendation models exploit the nonlinear transformations for modeling the complex user-item interaction patterns and user historical behaviors, ignoring the item-item structural relationship, which is uncomplicated to derive and useful for inferring item characteristics. To utilize this structural information, SNR simultaneously learns representation from user-item interactions and item-item relationships. Empirical studies on eight real-world datasets demonstrate the effectiveness of incorporating such structural information by outperforming classic and recent baselines. Following the model development, we conduct a field experiment to demonstrate that the effectiveness of algorithmic recommender systems can be further improved by using different types of message framing when communicating recommendations to consumers. Our results suggest that recommendations framed with a *relevance* appeal (e.g. "Top 5 brands for you") are more effective in general, yet recommendations that are framed with a *popularity* appeal ("Top 5 most popular brands") are more effective for customers who were acquired via social media (versus non-social media) advertising or for those who have stronger (versus weaker) social orientation.

Thursday, 8:30AM

TA02

Flagler - Lobby Level
Social Media: Engagement I
Contributed Sessions

Session Chair
Qingli Zeng, Singapore Management University, Singapore, Singapore.

Thursday, 8:30AM

TA02

Flagler - Lobby Level
Social Media: Engagement I
Contributed Sessions

1 The Effect of Temperature on Image Creation and Image Engagement

Işıl Büdeyri Turan, M. Tolga Akçura, Özyeğin University, Istanbul, Turkey. Contact: isil.turan@ozu.edu.tr

Image content on social media can generate higher user engagement, and viral effects on brands. Recent studies focus on image analytics using deep learning frameworks to determine which image components are more effective platform-wise and content-wise in creating higher engagement. The image creation process of users, however, involves a convoluted process which can be affected by individual mood and preferences, technical tools used to create an image, and environmental cues. High temperature levels, as a part of environmental cues, increase the volume of user-generated comments on social media, and affect the valence of these comments. Yet, we don't know if high or low temperature levels affect the image engagement behavior and image creation process or not. This study, therefore, examines how the image sharing and liking behaviors change, and how the image creation differs under different temperature levels. The study is a two-part study, where in the first part, the temperature impact is examined through analyzing the components of user-generated images, and the likes of these images on Instagram. The first part results indicate that high and low temperature changes along with calendar effects can predict the components of an image at an acceptable prediction level. For the product presence prediction, the model achieves 80% total correct prediction. The second part is experimental, where participants create images to post on their social media accounts under different room temperature levels, using the provided backgrounds, products, and color filters. We also control for the mood changes, product preferences, and publicity of products. The research produces unique outcomes regarding image creation process and weather-social media engagement studies.

Thursday, 8:30AM

TA02

Flagler - Lobby Level
Social Media: Engagement I
Contributed Sessions

2 Maximizing Engagement Through Caption Optimization: Insights from Social Media Field Data

Thomas Reichstein[1], Ines Brusch[1], Florian Dost[1], Michael Brusch[2], [1]Brandenburg University of Technology, Cottbus, Germany; [2]Hochschule Anhalt University of Applied Science, Köthen, Germany.

Social media managers are constantly seeking ways to maximize engagement with their content. While prior research has shed light on strategies for creating engaging content, the impact of captions on engagement has been under-explored. Our study focuses specifically on the relationship between caption length and engagement in social media posts. Contrary to previous literature, we find that the relationship between caption length and engagement follows an inverted U-shape. Using field data from an omnichannel retailer (Facebook) and a travel influencer (Instagram), we determine the optimal caption length for maximizing engagement and present surprising results. Our results are robust for different model and identification specifications, indicating that captions are often too short, rather than too long, and that optimizing caption length in our case can increase engagement by up to 25%. These findings have important implications for social media managers and influencers seeking to enhance the impact of their posts.

Thursday, 8:30AM

TA02

Flagler - Lobby Level
Social Media: Engagement I

Contributed Sessions

3 **Role of Anchor Emotions on Audience Engagement and Revenue: Evidence from Live Streaming Audio and Video Analysis**

Qingli Zeng[1], Sandeep R. Chandukala[1], Hai Che[2], Lifeng Yang[3], [1]Singapore Management University, Singapore, Singapore; [2]University of California, Riverside, Riverside, CA, [3]ShanghaiTech University, Shanghai, China. Contact: zengql.1997@gmail.com

Live streaming market has been rapidly growing in the past few years with Instagram reportedly growing at 70% in April 2020 and Twitch growing at 83% year-on-year. However, research investigating the role of live streaming platforms has been sparse. This research delves into understanding the relationship between live streaming platform anchors and audience engagement and their gift-giving behavior. We aim to determine the factors that contribute to the growth of viewership and revenue on live streaming platforms. Data for the research was collected from one of the largest gaming-focused live streaming platforms consisting of over 1000 hours of video and audio recordings for the top 25 English-speaking live streamers between April 1st and May 10th 2021. Our findings suggest that there is a strong correlation between anchor emotions and audience engagement, however, emotions expressed by anchors can also negatively affect revenue, despite increasing engagement. In addition, we explore the differences between existing subscribers and new subscribers, finding that existing subscribers are more susceptible to the emotions displayed by the broadcasters. The results of this study provide useful insights for both platforms and anchors. Platforms can utilize the findings to identify high-potential live streamers and enhance their offerings, while anchors can improve their performance and attract additional viewers by understanding the key drivers of engagement and revenue. We also offer practical guidelines to help anchors increase their revenue and engage their audience more effectively and strategically while balancing the trade-off between attracting new followers and reinforcing relationships with existing ones.

Thursday, 8:30AM

TA03

Dupont - Lobby Level

Decision Making, Measurement, and Experimentation 1

Special Session

Session Co-Chair

Simha Mummalaneni, University of Washington, Seattle, WA

Thursday, 8:30AM

TA03

Dupont - Lobby Level

Decision Making, Measurement, and Experimentation 1

Special Session

Session Chair

Shirsho Biswas, University of Washington, Seattle, WA

Thursday, 8:30AM

TA03

Dupont - Lobby Level

Decision Making, Measurement, and Experimentation 1

Special Session

1 **Gender Diversity on Cable News: An Analysis of On-Screen Talent and Viewership**

Ali Goli, Simha Mummalaneni, University of Washington, Seattle, WA

This research analyzes the implementation of gender diversity in cable news networks in the United States, focusing on the three major networks (CNN, Fox News, and MSNBC) from 2010 to 2021. We examine the amount of time women are shown on screen compared to men, the topics women are asked to discuss compared to their male counterparts, and the effect of the gender of on-screen talent on viewership. We also investigate how these patterns differ on a number of important dimensions: across the three major networks, through time, between different types of programs, between male vs. female viewers, and depending on viewers' familiarity with the on-screen talent. We find that viewers respond positively when women receive a greater portion of screen time, and that this effect becomes more favorable over the second half of the study period. Despite these changes among viewers, the cable news networks have not adjusted their on-screen product. This suggests that cable news networks are losing potential viewers by not implementing greater levels of gender diversity on screen.

Thursday, 8:30AM

TA03

Dupont - Lobby Level
Decision Making, Measurement, and Experimentation 1
Special Session

2 Consumer Learning in the Presence of Personalized Recommendations

Omid Rafieian[1], Si Zuo[2], [1]Cornell University, New York, NY, [2]Cornell University, Ithaca, NY, Contact: sz549@cornell.edu

Recommender systems are now an integral part of the digital ecosystem. However, the increased dependence of users on recommender systems has heightened concerns among consumer protection advocates and regulators. Past studies have documented various threats personalization algorithms pose to different aspects of consumer welfare, through violating consumer privacy, unfair allocation of resources, or creating filter bubbles that can lead to increased political polarization. In this work, we bring a consumer learning perspective to this problem and examine whether personalized recommender systems hinder consumers' ability to learn their own preference preferences. We develop a multi-armed bandits framework where consumers learn their preference parameters in the presence of a recommender system. We introduce a notion of regret which is defined as the regret when consumers make decisions on their own. We theoretically show that the presence of the recommender system acts as a barrier to consumer learning. We then discuss different consumer protection policies and document the welfare implications of each.

Thursday, 8:30AM

TA03

Dupont - Lobby Level
Decision Making, Measurement, and Experimentation 1
Special Session

3 Channel Viewership and Consistent Estimation of the Advertising-Elasticity of Demand

Shirsho Biswas[1], Jean-Pierre H. Dube[2], Andrey Simonov[3], [1]University of Washington, Seattle, WA, [2]University of Chicago, Chicago, IL, [3]Columbia University, New York, NY, Contact: shirsho@uw.edu

We address the potential attenuation bias in estimates of the advertising elasticity of demand due to measurement error in aggregate measures of advertising exposure. We use novel, geographically granular data tracking a television channel's viewership over time. We then rely on the quasi-random assignment of channels to positions across local cable markets to construct a "shift-share" instrument, implemented using a GMM estimator that is robust to measurement error as well as the traditional simultaneity concerns associated with strategic advertising placement. In a case study of over 250 leading, national CPG brands, we find that our GMM estimates are larger in magnitude than a comparable set of estimates reported in Shapiro et. al. 2021. Our findings refute recent claims that large consumer brands may be wasting most of their television advertising budgets.

Thursday, 8:30AM

TA04

Tuttle - Lobby Level
Advertising: Advertising Revenue and Spending
Contributed Sessions

Session Chair
Sridhar Moorthy, University of Toronto, Toronto, ON, Canada.

Thursday, 8:30AM

TA04

Tuttle - Lobby Level
Advertising: Advertising Revenue and Spending
Contributed Sessions

1 Bias from Voluntary Disclosure of Advertising Spending: Consequences and Remedies

Ashwin Malshe[1], Yi Yin[2], Koen Pauwels[3], [1]University of Texas-San Antonio, San Antonio, TX, [2]Northeastern University, Boston, MA, [3]Northeastern University, Boston, MA, Contact: ashwin.malshe@utsa.edu

Public firms have considerable discretion to disclose advertising spending in their annual (10-K) reports, and they may strategically make such disclosure decisions to meet their earning targets. This study shows that the firms with and without voluntary advertising disclosure systematically differ in size, market value, financial leverage, profitability, and industry. Demonstrating the differences, the authors propose to predict undisclosed advertising spending leveraging machine learning. After generating the predicted advertising, the authors examine whether and how the differences between the firms with and without voluntary advertising disclosure lead to a discrepancy in estimating advertising effectiveness. Empirical analyses show that the firms without voluntary advertising disclosure have significantly lower returns of advertising on sales compared to the firms with voluntarily disclosed advertising. At the same time, firms without voluntary advertising disclosure face a higher systematic risk related to advertising expenses. This implies that the firms that keep advertising information private are the ones that benefit less from advertising spending in both the product market and the financial market. The result shows that correcting for the bias results in lower advertising's sales elasticity and insignificant effect of advertising on firms' systematic risk.

Thursday, 8:30AM

TA04

Tuttle - Lobby Level

Advertising: Advertising Revenue and Spending

Contributed Sessions

2 On the Dynamics of Advertising Strategy: The Case of Movies

Sridhar Moorthy[1], Tirtha Dhar[2], [1]University of Toronto, Toronto, ON, Canada; [2]University of Guelph, Guelph, ON, Canada. Contact: moorthy@rotman.utoronto.ca

In this paper we examine empirically the dynamics of advertising strategy in the movie industry with a view to shedding light on the role of advertising for an experience good. Two dimensions of advertising are examined: content and spending level. Both show significant heterogeneity in the movie industry, which we trace to the heterogeneity in advertisable assets at inception, and how those assets evolve over a movie's lifetime. Our empirical results suggest that advertising spending in the entertainment industry is ultimately in the service of advertising content, which, in turn, depends on the product's search attributes.

Thursday, 8:30AM

TA05

Gusman - Lobby Level

Information Provision and Targeting on Digital Platforms

Special Session

Session Chair

Xu Zhang, London Business School, London, United Kingdom.

Thursday, 8:30AM

TA05

Gusman - Lobby Level

Information Provision and Targeting on Digital Platforms

Special Session

1 Does the Content of Managerial Responses to Consumer Reviews Affect Consumer Behavior?

Surya Ierokomos[1], Sridhar Narayanan[1], Georgios Zervas[2], [1]Stanford University, Stanford, CA, [2]Boston University, Boston, MA, Contact: siero@stanford.edu

Online review platforms such as Yelp and TripAdvisor have seen tremendous usage growth in recent years. Consumers rely on these platforms to provide them with information about businesses they are considering in industries such as hospitality, retail, and service industries. Many of these platforms allow businesses to respond to consumer reviews, and these responses are typically visible to subsequent visitors to the platform. A nascent literature in marketing has explored the impact of whether businesses respond to consumer reviews on subsequent consumer evaluations.
In this paper, we explore the effect of the content of managerial responses to hotel reviews on evaluations by subsequent visitors to the review platform. We develop a unique identification strategy that exploits the quasi-random allocations of responses to respondents in businesses with more than one respondent. We find tailored responses with a positive tone lead to higher subsequent star ratings. Furthermore, these more positive reviews tend to focus on service-related aspects of the stay, as opposed to the infrastructure or location of the hotel.

Thursday, 8:30AM

TA05

Gusman - Lobby Level

Information Provision and Targeting on Digital Platforms

Special Session

2 Quality Certification, Demand, and Doctor Response: Evidence from an Online Healthcare Platform

Jiajia Zhan[1], Xu Zhang[2], Hongqiao Fu[3], [1]Imperial College London, London, United Kingdom; [2]London Business School, London, United Kingdom; [3]Peking University, Beijing, China. Contact: xzhang@london.edu

Quality certification systems are commonly used in digital platforms with large assortments and abundant pre-purchase information to help consumers make informed choices. However, the impact of these systems on suppliers' pricing and buyers' demand remains unclear, especially in the context of online healthcare platforms where doctors make both pricing decisions and decisions regarding service quality and quantity, subject to a capacity constraint. This study examines the impact of the "Excellent Doctor" certification system in a leading online healthcare platform in China. We find that certification increases demand for certified doctors, particularly from experienced consumers. Certified doctors respond by raising their service prices and increasing their service quantity, leading to a significant increase in revenue. The research also assesses the impact on service quality by examining various metrics such as login frequency, waiting time, consultation duration, and patient feedback. The findings have implications for online healthcare platforms and policymakers in understanding the effects of quality certification systems in digital markets.

Thursday, 8:30AM

TA05

Gusman - Lobby Level

Information Provision and Targeting on Digital Platforms

Special Session

3 Lookalike Targeting on Others' Journeys: Brand Versus Performance Marketing

K. Sudhir[1], Seung Yoon Lee[1], Subroto Roy[2], [1]Yale School of Management, New Haven, CT, [2]University of New Haven, Cheshire, CT, Contact: k.sudhir@yale.edu

Lookalike targeting is a widely used model-based ad targeting approach that uses a seed database of individuals to identify matching "lookalikes" for targeted customer acquisition. An advertiser has to make two key choices: (1) who to seed on and (2) seed-match rank range. First, we find that seeding on others' journey stage can be effective in new customer acquisition; despite the cold start nature of customer acquisition using Lookalike audiences, third parties can indeed identify factors unobserved to the advertiser that move individuals along the journey and can be correlated with the lookalikes. Further, while journey-based seeding adds no incremental value for brand marketing (click-through), seeding on more downstream stages improves performance marketing (donation) outcomes. Second, we evaluate audience expansion strategies by lowering match ranks between the seed and lookalikes to increase acquisition reach. The drop in effectiveness with lower match rank range is much greater for performance marketing than for brand marketing. Performance marketers can alleviate the problem by making the ad targeting explicit, and thus increase perceived relevance; however, it has no incremental impact for higher match lookalikes. Increasing perceived targeting relevance makes acquisition cost comparable for both high and low match ranks.

Thursday, 8:30AM

TA05

Gusman - Lobby Level

Information Provision and Targeting on Digital Platforms

Special Session

4 Improving Job Satisfaction of Marketing Managers: A Text-Based Approach Based on Employee Reviews

Yanqing Gui[1], Piyush Anand[2], Vrinda Kadiyali[1], [1]Cornell University, Ithaca, NY, [2]Rice University, Houston, TX, Contact: yg523@cornell.edu

What motivational levers can companies leverage to improve the job satisfaction of marketing managers? To answer this question, we study aspects of job satisfaction, including both monetary and non-monetary job rewards. While pay transparency laws and online salary-sharing websites make it easier to assess monetary rewards, non-monetary job rewards are harder to ascertain, hence our study's focus. Using publicly available employee reviews for large firms in the US, we employ a text-based treatment-discovery method to measure both monetary and nonmonetary aspects associated

with higher job satisfaction. Importantly, we extract a measure of meaningfulness that is predictive of job satisfaction and is decorrelated from monetary incentives. Based on this measurement, we can examine the impact of meaningfulness on job satisfaction at three levels of granularity. We show meaningfulness as a whole matter for job satisfaction. We then view meaningfulness as fulfilling three psychological needs (autonomy, competence, and relatedness) at the basis of self-determination theory and examine which need matters the most. Finally, we estimate a topic model that extracts non-monetary topics. These non-monetary topics deliver a more fine-grained discussion of specific meaningful needs and allow the data to speak flexibly about what needs feature most prominently in employee reviews. Our approach will be of interest to firms in monitoring and improving marketing managers' job satisfaction using nonmonetary levers as they aim to retain top talents.

Thursday, 8:30AM

TA06

Marti - Lobby Level
Marketing Strategy:Firm Performance I
Contributed Sessions

Session Chair
Debanjan Mitra, University of Connecticut, Glastonbury, CT

Thursday, 8:30AM

TA06

Marti - Lobby Level
Marketing Strategy:Firm Performance I
Contributed Sessions

1 The Marketing Mix and Firm Benchmarking: An Examination Using Textual Measures of the Four Ps

Didem Kurt[1], Ahmet C. Kurt[2], Dhruv Grewal[3], [1]Northeastern University, Boston, MA, [2]Bentley University, Waltham, MA, [3]Babson College, Babson Park, MA, Contact: d.kurt@northeastern.edu

This paper investigates the firm value and benchmarking implications of the marketing mix elements using new text-based measures of the four Ps. To construct the new measures, the authors perform a textual analysis of firms' annual reports, utilizing dictionaries developed for each of the four Ps. The validation tests confirm that the measures work as intended (e.g., firms with a greater price emphasis have lower gross margins). As an initial test of the validated measures, the authors examine the relation of firm value with the four Ps and uncover contingencies based on industry type (e.g., promotion emphasis is positively (negatively) associated with firm value in high (low) growth industries). Regarding their main hypotheses, the authors find that financial analysts and corporate boards pay particular attention to firms' and their peers' emphasis on product and promotion features when engaging in performance and compensation benchmarking, respectively. Focusing on the marketing mix in this context matters, because when analyst-chosen (board-chosen) benchmarking peers and the focal firm have dissimilar product (promotion) emphasis, the analysts' individual forecast accuracy (CMO compensation) suffers. The new measures of the four Ps offer various uses for both researchers and practitioners.

Thursday, 8:30AM

TA06

Marti - Lobby Level
Marketing Strategy:Firm Performance I
Contributed Sessions

2 Intra-Industry Spillover Effects of Negative News and Rival Firms' Strategic Reactions

Xiaobo Lin[1], Guiyang Xiong[2], [1]Syracuse University, Syracuse, NY, [2]Syracuse University, Syracuse, NY

Negative news about a firm may have spillover effects on the firm's competitors. In contrast to the conventional wisdom which suggests that a firm's competitors are likely to benefit from its negative news, this research reveals the heterogenous spillover effects across rival firms. Based on a large-scale dataset compiled from various sources, the authors (1) compare the spillover effects of different types of negative news, (2) identify the antecedents that explain the heterogeneity in the spillover effects across rival firms, and (3) examine rival firms' strategic reactions in response to the negative news. Results indicate that upon the release of marketing-related negative news about a firm, its rival firms' abnormal stock returns vary depending on their R&D investments, marketing investments, brand strengths. In turn, such stock market reactions lead to rivals' strategic changes in future brand portfolio, product portfolio, and recruitment emphasis. The authors also identify both firm-level and industry-level moderators that mitigate or amplify these effects. Implications for managers, investors, and policymakers are discussed.

Thursday, 8:30AM

TA06

Marti - Lobby Level

Marketing Strategy:Firm Performance I

Contributed Sessions

3 Marketing Drivers of Corporate Venture Capitalists' Investment Proactive Exits

Mayukh Dass, Manaswini Acharya, Abhishek Nirjar, Texas Tech University, Lubbock, TX, Contact: macharya@ttu.edu

With the growing need for market expansion and resource acquisitions, an increasing number of firms are relying on investments through their venture capital divisions called corporate venture capitalists (CVCs). However, like other investments, CVC investments experience a large number of exits. Some of these exits are the outcome of market conditions reactions, whereas other exits are proactive actions that the CVC plan at the time of the investment decision. In this paper, we focus on proactive investment exits by CVC, and (1) using the theory-in-use approach and input from 50 C-level CVC managers, we examine the marketing drivers that affect CVC investment and introduce a model of Corporate Venture Capitalists' investment proactive exits, (2) test the model using empirical data on 418 CVC marketing investments, and (3) finally, validate our model using a different set of C-level respondents. The theoretical model identifies the marketing factors related to the four categories, market governance, customer orientation, competitor orientation, and learning orientation that affects the proactive exits of CVC. The empirical test validates the main effects of the theoretical model and suggests that higher vertical connectedness and higher resource asymmetry increase the exit propensity of CVC, and a higher deal amount reduces the propensity. And the validation study reemphasizes the above findings. The paper concludes by discussing the managerial and theoretical contributions of the study.

Thursday, 8:30AM

TA06

Marti - Lobby Level

Marketing Strategy:Firm Performance I

Contributed Sessions

4 Emotion Elasticity

Peter N. Golder[1], Debanjan Mitra[2], Mariya Topchy[2], [1]Tuck School of Business, Hanover, NH, [2]University of Connecticut, Glastonbury, CT, Contact: debanjan.mitra@uconn.edu

Empirical research in marketing and economics reveal elasticities quantifying comparable and unitless impact of various marketing activities. While the service-satisfaction literature has widely documented customer emotions to play a central role in how service performance impacts customers' satisfaction, we know little about emotions' elasticities, i.e., how much positive and negative emotions are generated by different service performance elements and how much these emotions impact customer satisfaction. In fact, given that price and advertising elasticities in service contexts are often found to be much smaller compared to those for physical products, it is imperative to quantify the role of emotions in services and identify emotions' elasticities and its patterns under varying conditions. The authors build on the service-emotion-satisfaction chain framework incorporating potential asymmetries and interactions with respect to important human (i.e., service provider competence) and non-human (i.e., wait time) service elements as well as positive and negative emotion dimensions. This framework enables us to conceptualize emotion generation elasticity and emotion impact elasticity that capture emotion response to service performance and satisfaction response to emotion, respectively. Using longitudinal survey data from a customer panel of a large U.S. bank, we estimate customers' emotion elasticities and find that they are (1) asymmetric - more positive and negative emotions are generated by service provider competence than wait time; (2) interactive - the impact is larger when positive emotions are generated along with a small (as opposed to none) amount of negative emotions or vice-versa; and (3) differential - the overall resultant of emotion generation and their impact on satisfaction are such that transactions that generate more (less) emotions are not necessarily the ones that obtain larger (smaller) changes in satisfaction.

Keywords: emotion, satisfaction, elasticity, service, employees

Thursday, 8:30AM

TA07

Merrick 1 - Lobby Level

Influencer Marketing Track: Special Session 1

Special Session

Session Co-Chair
Maximilian Beichert, Mannheim, Germany.

Thursday, 8:30AM

TA07

Merrick 1 - Lobby Level
Influencer Marketing Track: Special Session 1
Special Session

Session Chair
Andreas Lanz, HEC Paris, Paris, France.

Thursday, 8:30AM

TA07

Merrick 1 - Lobby Level
Influencer Marketing Track: Special Session 1
Special Session

1 Targeting Nearby Influencers: The Acceleration of Natural Triadic Closure by Leveraging Interconnectors
Jacob Goldenberg[1], Andreas Lanz[2], Daniel Shapira[3], Florian Stahl[4], [1]Reichman University, Herzliya, Israel; [2]HEC Paris, Paris, France; [3]Ben-Gurion University, Beer Sheva, Israel; [4]University of Mannheim, Mannheim, Germany.
On user-generated content platforms, individuals and firms alike seek to build and expand their follower base to eventually increase the reach of the content they upload. The bulk of the seeding literature in marketing suggests targeting users with a large follower base—the high-status influencers. In contrast, some recent studies find targeting lower status influencers to be a more effective seeding policy. In this paper, we shift the focus from the follower base of the seeding target to the one of the focal content creator: We propose accelerating natural triadic closure by leveraging the first-degree followers as interconnectors to target the low-status second-degree followers—i.e., the *nearby* low-status influencers (who are interconnected with the focal content creator). In empirical studies, we find that this seeding target is much more effective for building and expanding the follower base, than targeting influencers who are not interconnected with the focal content creator—i.e., the *remote* high-status and low-status influencers (by 2,300% and 46%, respectively). We augment these studies on the acceleration of natural triadic closure with a pre-registered field experiment to obtain convergent validity of our findings.

Thursday, 8:30AM

TA07

Merrick 1 - Lobby Level
Influencer Marketing Track: Special Session 1
Special Session

2 Improving Influencer Recommendation with Brand Portfolio
Bindan Zhang[1], Jeremy Yang[2], Pankhuri Malhotra[3], [1]Northwestern University, Evanston, IL, [2]Harvard University, Boston, MA, [3]University of Oklahoma, Norman, OK, Contact: bindan.zhang@kellogg.northwestern.edu
Selecting the right influencers is crucial for the success of influencer marketing campaigns. As a result, many platforms recommend influencers to brands based on their fit, follower count, and engagement rate. In this paper, we build a graph-based recommender system using Instagram data to investigate if an influencer's past brand collaborations, or her brand portfolio, has additional predictive power of campaign performance in the future. We measure the relationship between brands along the dimensions of competition and image with brand bios and test two potential mechanisms. First, how does the number and variety of brands in the portfolio predict performance? Second, how does the relationship between the focal brand and brands in the portfolio predict performance? For practical implications, we discuss how platforms and brands can leverage influencers' brand portfolios to improve the recommendation and selection, and how influencers can better manage their brand portfolios.

Thursday, 8:30AM

TA07

Merrick 1 - Lobby Level
Influencer Marketing Track: Special Session 1
Special Session

3 Collaboration Among Creators in Content Markets
Jasmine Yang[1], Qifan Han[2], Kinshuk Jerath[1], [1]Columbia

University, New York, NY, [2]Boston University, Boston, MA

We study an emerging phenomenon in the content marketing space - content collaboration, in which competing creators mutually agree to collaborate on a joint content and negotiate the production decisions of all their content. Using a game theory model with creators competing for consumers on a Hotelling line, we explain why and when creators collaborate, how creators differentiate the content they jointly create from their typical content, and the impact of collaboration on creators' incentives to produce individual content vs free ride, market content variation and welfare. We conceptualize the optimal decisions of creators by considering a setting in which each creator determines the positioning and length of their individual content when there is no collaboration. When creators find collaboration mutually beneficial, they adopt a general Nash bargaining framework to negotiate the partition of profits and production decisions of all content. We show that collaboration increases content variation and softens competition by creating some form of collusion among creators, allowing creators to use their individual content to expand into new market. Collaboration, however, may not always increase consumer surplus, given that content length and monetization increase due to reduced competition. When creators have heterogeneous abilities in providing entertainment values and their content's entertainment value differential is large, the creator producing content of lower entertainment value has a greater incentive to free ride on the collaborated content. However, free-riding may raise welfare for consumers who watch a content of low entertainment value when there is no collaboration, thereby improving both total profit and consumer surplus. Our results shed light on the value of collaboration and provide guidance for industry practitioners designing tools to facilitate collaborations.

Thursday, 8:30AM

TA07

Merrick 1 - Lobby Level

Influencer Marketing Track: Special Session 1

Special Session

4 When and How Individual Behavioural Models Benefit Seeding Policies

Radu Tanase, René Algesheimer, Manuel Sebastian Mariani, Department of Business Administration, University of Zurich, Zurich, Switzerland.

The opportunity to capitalise on social contagion has led many firms to invest significant resources in identifying the best seeding policies for new products and services. Many studies on seeding policies investigate whether and how an individual's centrality in her social network relates to her ability to trigger large-scale adoption processes. However, it remains unclear how to integrate social network centrality with individual-level behavioural characteristics to improve seeding performance. As a paradigmatic example, complex social contagion models assume that individuals' adoption choices are determined by an individual behavioral characteristic -- her threshold levels. Yet we lack studies attempting to measure the empirical threshold levels and integrate them into the seeding decisions.

Here we propose a framework to estimate individual-level thresholds from observed product choices, and to integrate the empirical thresholds into diffusion modeling and seeding policies. We first demonstrate that individual-level thresholds can be derived analytically from canonical discrete-choice models, and accurately measured in discrete-choice experiments based on conjoint design. We subsequently design and validate "behaviour-based" seeding policies based on the empirical individual threshold levels. Leveraging calibrated agent-based simulations, we identify the main factors determining the relative performance of behaviour-based and traditional centrality-based policies: the degree of homophily of the underlying social network, the shape of the threshold distribution, and the dependence of targeting cost on individual centrality.

Thursday, 8:30AM

TA08

Merrick 2 - Lobby Level

Digitization 1: UGC

Special Session

Session Co-Chair

Ayelet Israeli, Harvard Business School, Boston, MA

Thursday, 8:30AM

TA08

Merrick 2 - Lobby Level

Digitization 1: UGC

Special Session

Session Co-Chair
Pinar Yildirim, University of Pennsylvania, Philadelphia, PA

Thursday, 8:30AM

TA08

Merrick 2 - Lobby Level
Digitization 1: UGC
Special Session

Session Chair
Georgios Zervas, Boston University School of Management, Brookline, MA

Thursday, 8:30AM

TA08

Merrick 2 - Lobby Level
Digitization 1: UGC
Special Session

1 **Online Rating Manipulation and Consumer Welfare**
Brett Hollenbeck, Ashvin Gandhi, University of California Los Angeles, Los Angeles, CA
Using a large panel dataset of products observed buying fake reviews to manipulate their Amazon ratings, this paper investigates how and to what extent consumers are harmed by review manipulation. By modeling consumer demand for products and how demand is shifted by ratings, reviews, prices, and product visibility, this paper seeks to quantify the different mechanisms by which consumers are harmed by rating manipulation and sellers benefit. Rating manipulation may causes consumers to buy lower quality products or pay higher prices, or may result in worse product matches if consumers place too little weight on quality ratings. Rating manipulation may also increase price competition and benefit consumers by lowering prices on high quality products. We use counterfactual policy simulations explore the effectiveness and welfare and profit implications of different methods of regulating fake reviews.

Thursday, 8:30AM

TA08

Merrick 2 - Lobby Level
Digitization 1: UGC
Special Session

2 **More, Faster, and Better? Effects of Rewards on Incentivizing the Creation of User-Generated Content**
Elisabeth Honka[1], Mahsa Paridar[2], Mina Ameri[3], [1]UCLA Anderson School of Management, Los Angeles, CA, [2]University of California Los Angeles, Los Angeles, CA, [3]University of Pittsburgh, Pittsburgh, PA
We quantify the effects of monetary and non-monetary rewards on the quantity, timeliness, and quality of user-generated content (UGC). Users can receive both types of rewards from the platform and/or other users. Understanding the effectiveness of different types of rewards provides platforms with guidance on how to encourage desired user content generation. Our data come from an online board game platform and consist of information on three types of UGC: writing initial forum posts, replying to peers' questions, and writing game reviews. Our results show that monetary rewards from other users, such as tips, lead to more frequent but shorter and more casual content, while non-monetary rewards from peers, such as likes, lead to longer and richer content. Interestingly, monetary rewards from the platform have a similar impact on UGC creation as non-monetary rewards from other users. Furthermore, non-monetary rewards from the platform that use goal milestones, such as badges, speed up UGC production when a user is close to reaching the next badge, but lead to a decrease in UGC creation after the milestone has been reached.

Thursday, 8:30AM

TA08

Merrick 2 - Lobby Level
Digitization 1: UGC
Special Session

3 **The End of Tourist Traps: A Natural Experiment on the Impact of Tripadvisor on Quality Upgrading**
Dante Donati, Columbia Business School, New York, NY
Asymmetric information can distort market outcomes. I study how the online disclosure of information affects consumers' behavior and firms' incentives to upgrade product quality in markets where information is traditionally limited. I first build a model of consumer search with firms' endogenous

quality decisions. In this model, lower search costs reallocate demand toward higher-quality producers, raising firms' incentives to upgrade quality, and more so for firms selling ex-ante lower-quality products. I then use the access to online reviews to proxy for reductions in consumers' search costs and estimate its impact on the restaurant industry in Rome, exploiting the abolition of mobile roaming charges in the EU in 2017 for identification. Based on a unique dataset combining monthly information from Tripadvisor with administrative social-security records, I find that, after the policy, revenues and total employment in mid- and high-rating restaurants grow by 3-10%. In turn, the probability for low-rating restaurants to exit the market doubles compared to the pre-policy period, while surviving low- and mid-rating establishments hire workers with higher wages and better curricula, eventually improving their Tripadvisor ratings. Overall, the share of low-rating restaurants in the most tourist areas decreases by 2.5 pp. My findings have implications for the role of review platforms in the performance of offline industries under asymmetric information.

Thursday, 8:30AM

TA08

Merrick 2 - Lobby Level
Digitization 1: UGC
Special Session

4 Modeling Conversational Agents: The Case of Online Managerial Responses

Shrabastee Banerjee[1], Ishita Sunity Chakraborty[2], Hulya Karaman[3], [1]Tilburg University, Tilburg, Netherlands; [2]University of Wisconsin, Madison, WI, [3]Singapore Management University, Singapore, Singapore.

Online reviews have now become more interactive with most businesses deciding to respond to customer complaints/ praises on public review platforms. While there is some consensus that responding (especially to negative reviews) has a positive impact on future reviews, the cost/benefit of different response styles has not been studied in the past; for example, it is low-cost for the business to just apologize or deny the problem, however, it takes more effort to tailor each response to a given review, explain what went wrong or suggest a corrective action. Furthermore, as generative models like ChatGPT become commonplace, there is value for managers in understanding whether supplementing these algorithms with certain conversational styles may be better suited for some downstream outcomes than operating a fully unsupervised response generation system, which may be canned and impersonal. In this paper, we use a large conversational dataset of over a million review-response pairs from a service provider's proprietary portal to : 1) Develop a deep learning model which automatically categorizes these responses into one of the dominant styles observed in social media response data (excuses, apologies, justification, denials or corrective action) and 2) Validate the predictive power of these response styles on certain future outcomes (e.g, future reviews). Once developed, our tool hopes to make managerial recommendations on optimal response styles for specific outcomes.

Thursday, 8:30AM

TA08

Merrick 2 - Lobby Level
Digitization 1: UGC
Special Session

5 Moderation-Based Echo Chambers- An Analysis of Content Removals on Reddit Using Nlp

Justin T. Huang[1], Jangwon Choi[2], Yuqin Wan[1], [1]University of Michigan Ross School of Business, Ann Arbor, MI, [2]University of Michigan, Ann Arbor, MI

Echo chambers are online spaces where individuals are met with reinforcing viewpoints and insulation from opposing viewpoints, and they are of increasing interest amidst rising political polarization in the US. Selective participation and algorithmic recommendations are commonly cited as drivers of echo chamber formation, however this work identifies and examines a novel mechanism for the formation of echo chambers on social media sites: the politically-biased content removal decisions of human moderators. We document consistent patterns of adverse content removal (left-leaning content gets removed by right-leaning moderators, and vice-versa) in a dataset of 1.2 million users' removed content on Reddit, utilizing a combination of network analysis, deep learning, tree-based methods, and BERT to characterize the political leanings of users and their textual content. Utilizing a propensity score matching approach, we further show that content removals have an indirect chilling effect on censored users' subsequent political speech. These findings are of broad interest to users, platforms and regulators who weigh the costs and benefits of freedom of expression with the logistics of moderating massive online spaces.

Thursday, 8:30AM

TA09

Grove - Lobby Level

AI: Applications I

Contributed Sessions

Session Chair

David A. Schweidel, Emory University, Atlanta, GA

Thursday, 8:30AM

TA09

Grove - Lobby Level

AI: Applications I

Contributed Sessions

1 Improving the Efficacy of Online Learning Using Artificial Intelligence

Chul Kim[1], Ritu Agarwal[2], Pallassana K. Kannan[3], Bill Rand[4], [1]Baruch College, New york, NY, [2]Johns Hopkins Carey Business School, Baltimore, MD, [3]University of Maryland-College Park, College Park, MD, [4]NC State University, Raleigh, NC

Digital learning platforms that offer virtual education are growing rapidly, with online learning increasingly replacing or complementing traditional in-person instruction. To the extent that online learning opportunities create both societal value - by expanding access to education, and economic benefits - reflected in new business models, the demand for efficacious online learning is accelerating. We propose an artificial intelligence (AI)-based approach for more efficacious online learning by incorporating three theoretically and empirically supported pedagogical factors- relevancy, embeddedness, and variety. We implement the proposed approach in an online learning platform for K-12 mathematics education. Using data from a natural experiment, we obtain robust empirical evidence of the efficacy of the proposed approach in improving learners' proficiency. Our analyses further confirm that by increasing the proficiency of learners through relevancy, embeddedness, and variety, the proposed system also contributes to learner retention.

Thursday, 8:30AM

TA09

Grove - Lobby Level

AI: Applications I

Contributed Sessions

2 Artificial Intelligence Analyst and Individual Investor Activities: Empirical Evidence from Mutual Fund Investment

Yue Guo[1], Siliang(Jack) Tong[2], Tao Chen[2], Subodha Kumar[3], [1]Southern University of Science and Technology, Shenzhen, China; [2]Nanyang Technological University, Singapore, Singapore; [3]Temple University, Philadelphia, PA, Contact: jack.tong@ntu.edu.sg

Many retail investment platforms have introduced artificial intelligence (AI) analysts to help individual investors gather insights and evaluate investment products. Yet, there is scant empirical effort examining the business impact of such an AI tool on individual investors' financial market investments. To fill this gap, we collaborate with Ant Fortune (an affiliate of Alibaba), the largest retail investment platform in China, and explore a unique dataset wherein an AI analyst was introduced to facilitate individual investors' investment activity. Our analyses provide the first empirical evidence showingthat individual investors who use the AI analyst perform more manual investment sessions and invest more than those who do not use the AI tool. Interestingly, our further analyses document both positive and negative effects across heterogeneous investor groups. Specifically, we demonstrate that, on the one hand, the use of an AI analyst could drive more investment activity from individual investors who lack adequate financial knowledge, indicating a positive financial inclusion effect. On the other hand, we find that AI analyst use reduces investment activity from investors who are less familiar with financial technology, suggesting a negative resistance effect of AI applications. More importantly, using an AI analyst alters investors' risk tolerance, increasing their investment in products carrying increased volatility. Despite the positive effects of using AI analysts for investment returns, information overload causes moderate negative impact for investors with less finance knowledge. Our results help platform managers understand whether and how they should implement AI analysts to promote individual investors' standing in financial markets

Thursday, 8:30AM

TA09

Grove - Lobby Level

AI: Applications I

Contributed Sessions

3 Using Ai to Support Creative Processes: The Role of Baseline Creativity and Intrinsic Motivation

Yehjun Lee[1], Dipankar Chakravarti[2], [1]Virginia Tech, Blacksburg, VA, [2]Virginia Tech, Ellicott City, MD, Contact: yehjun@vt.edu

Even as AI makes inroads into domains previously seen as exclusively human capabilities (e.g., art, music, and creative writing) little research addresses how AI can potentially support/augment the output of human creative processes. ChatGPT (Open AI's language model) has aroused much concern regarding the future of existing academic and business models that rely on conventional human creative processes. At the same time, it opens new avenues for harnessing AI's potential as an "autonomous innovator" (Benbya et al., 2021).

We report three studies that explore this emerging space. ChatGPT is the focal AI tool to support the creation of ad copy. Study 1 examines how an individual's intrinsic motivation and baseline creativity influences their perception (assessment) of ChatGPT's creative output. Intrinsic motivation and baseline creativity are measured in an initial calibration task involving writing ad copy for a set of products and then matched to how they evaluate ChatGPT on the same creative tasks. Undergraduates evaluate all copy samples using provided criteria.

Study 2 compares creative ad copy for familiar products with and without ChatGPT support. Participants first write ad copy on their own and their baseline creativity is evaluated as before. They then write additional copy with ChatGPT support. Both intrinsic motivation and baseline creativity influence creativity gains: higher for low and high baseline creativity (versus moderate baseline creativity).

Study 3 tests the impact of different sequences of self-generation and AI use in writing ad copy. Participants first write ad copy on their own and then are randomly assigned to one of three conditions: (1) write copy on their own and then use ChatGPT to improve; (2) use ChatGPT to write the initial copy and then improve it themselves; and (3) freely use ChatGPT with the sequence left up to the participant. Creativity gains from different task structures vary based on individual factors.

The studies show that AI's potential for supporting creative processes rests on pertinent individual differences and task structure.

Thursday, 8:30AM

TA09

Grove - Lobby Level

AI: Applications I

Contributed Sessions

4 The Value of an Artist's Name in Ai-Generated Art

Jason Bell[1], Jeff Dotson[2], David A. Schweidel[3], Wen Wang[4], [1]Oxford University, Oxford, United Kingdom; [2]Brigham Young University, Provo, UT, [3]Emory University, Atlanta, GA, [4]University of Maryland, College Park, college park, MD

The emergence of generative AI has raised questions about the very nature of artistic endeavors. Trained on large volumes of images, image generators such as Stable Diffusion and Midjourney have "learned" the styles of artists, often without artists explicit consent. In this research, we investigate the extent to which the inclusion of an artist's name in the prompt that is inputted into these image generators affects consumer liking of the resulting imagery. We develop a deep learning model to predict consumer liking, and compare images that were generated with and without the inclusion of an artist's name. We also conduct a conjoint study in which we evaluate the price premium resulting from including an artist's name. Taken together, our work demonstrates how one can quantify the value of an artist's name and style to content produced by generative AI, which may suggest the need to compensate content creators for the use of their work in the development of such models.

Thursday, 8:30AM

TA10

Oxford - Level 2

Digital Marketing: Digital Content

Contributed Sessions

Session Chair

Baohong Sun, Cheung Kong Graduate School of Business, New York, NY

Thursday, 8:30AM

TA10

Oxford - Level 2

Digital Marketing: Digital Content

Contributed Sessions

1 **Golden Age of Piracy? Svod Market Entry, Content Supply, and Piracy Channels**

Khimendra Singh[1], Shijie Lu[2], Rajdeep Grewal[3], [1]kelley school of business, Bloomington, IN, [2]University of Notre Dame, Granger, IN, [3]UNC Chapel Hill, Chapel Hill, NC

The impact of subscription video-on-demand (SVoD) services on the consumption of pirated digital content is ambiguous. In particular, the standard focus of piracy literature around the productized piracy (peer-to-peer torrent sharing) does not explore the servicized piracy (illegal streaming websites) channel, which is starting to dominate the video piracy consumption globally. Using the introduction of the SVoD service Disney+ into a highly competitive market (India) in 2020, we use the synthetic difference-in-differences estimator to examine whether legitimate content consumption channels influence content consumption on illegitimate channels. We analyze daily-level piracy (consisting of both channels; streaming and torrent) for more than 100 movies in India and five other countries, which we use to create a synthetic control. We find that piracy consumption increased in India after the SVoD entry, highlighting that an SVoD service may unintentionally lead to an increase in piracy despite providing consumers more legal options to access content. To the best of our knowledge, this study provides the first empirical evidence of the dominant piracy market expansion effect due to an SVoD service entry. We suggest the highly competitive nature of the market as the possible reason for this outcome. We examine both demand- and supply-side piracy expansion drivers (i.e., buzz and pirated content supply effects) that manifest due to the firm's market entry. We portray a holistic picture of the piracy landscape by studying both productized and servicized piracy channels. We also document a positive spillover effect on the competitor and discuss the implications for firms and policymakers.

Thursday, 8:30AM

TA10

Oxford - Level 2

Digital Marketing: Digital Content

Contributed Sessions

2 **Regulating Digital Piracy Consumption**

Jieteng CHEN[1], Yuetao Gao[2], T. Tony Ke[3], [1]Chinese University of Hong Kong, Hong Kong, Hong Kong; [2]Xiamen University, Xiamen, China; [3]Chinese University of Hong Kong, Shatin, Hong Kong.

Regulators across the globe have imposed penalties on consumers for digital piracy consumption. Contrary to expectations, however, digital piracy consumption has continued to grow. We develop a simple model of competition between a copyright holder and a pirate firm to offer a plausible account for this observation as well as actionable guidelines for optimal regulation design. The core of our idea is to endogenize the pirate firm's strategic investment in anti-tracking technologies that help consumers evade a regulator's penalty. We find that as the penalty rises, piracy consumption can surprisingly increase after decreasing first; relatedly, the copyright holder and the society may suffer from tighter regulation. Depending on the cost of anti-tracking technologies of the pirate firm, the regulator should optimally set the penalty to operate in two different regimes. When the technology is available at a low cost, the regulator can achieve the goals of maximizing social welfare and minimizing piracy consumption simultaneously by setting a moderate penalty that maximizes consumers' expected penalty and tolerates some level of piracy consumption. In contrast, when the technology is costly, the regulator should set a relatively high penalty to completely impede piracy supply. Lastly, we identify complex non-monotonic long-run effects of piracy consumption regulation on the copyright holder's incentives for content creation.

Thursday, 8:30AM

TA10

Oxford - Level 2

Digital Marketing: Digital Content

Contributed Sessions

3 **Seller Experience and Nft Resale Prices: A Study in Generative Art Nfts**

Chaoran Liu, Anja Lambrecht, Xu Zhang, London Business School, London, United Kingdom. Contact: chaoranl@london.edu

In conventional e-commerce marketplaces, buyers face uncertainty about product quality and transaction safety. As a result, seller attributes such as seller experience or their ratings, serve as quality signals for buyers and may become determinants of the final transaction price. We ask whether in the market for Non-Fungible Tokens (NFTs) where the blockchain technology removes uncertainty over product quality and transaction safety seller attributes still affect transaction. Using data from the largest NFT platform OpenSea, we quantify the effect of seller experience on resale price and explore the underlying mechanisms.

We adopt a unique identification strategy leveraging the randomized allocation of tokens in the initial minting stage of generative art NFTs. We find that sellers with more experience, measured by seller tenure or the number of their previous transactions, sell at a higher price. However, this price premium for experienced sellers is not a result of increased demand due to quality signalling but instead a result of more experienced sellers making more profitable pricing decisions, such as setting a higher initial list price and making fewer price changes. We discuss the implications for NFT platforms and NFT marketers.

Thursday, 8:30AM

TA10

Oxford - Level 2

Digital Marketing: Digital Content

Contributed Sessions

4 Detecting Nft Communities - a Dynamic and Hierarchical Graph Representation Learning Approach

Baohong Sun[1], Jiaxin Du[2], Yingda Lu[3], Keran Zhao[4], [1]Cheung Kong Graduate School of Business, New York, NY, [2]Texas A&M University, College Station, TX, [3]University of Illinois-Chicago, Chicago, IL, [4]University of Houston, Houston, TX, Contact: bhsun@ckgsb.edu.cn

As an excellent application of blockchain technology, non-fungible token (NFT) has garnered growing interest among researchers who are studying the popularity and pricing of NFTs. In this study, we explore how the formation of the NFT community affects the demand and pricing of NFT. Specifically, we aim to address the following questions: 1) who collects which NFTs and for what reason, 2) how NFT communities are formed and how the evolution drive community specialization, 3) what factors influence the demand/price and their relative importance, 4) how smart contract designs, such as royalty fee, transaction fee and rarity, affect the consensus and hence demand/price? In this paper, we construct a heterogeneous, attributed and dynamic network that is extended from the recently developed multi-level graph representation learning method. In this framework, we treat collectors and NFTs as nodes connected by time-stamped transactions and incorporate a hierarchical structure to identify the NFT collections. The attention-based deep-learning graph neural network maintains multi-level memories for nodes and the node embeddings are continuously updated using historical transactions. The framework jointly learns the formation of community clusters and predicts the NFT transactions/pricing based on the network information. Applying the model to the transaction archive of 0.8 million NFTs transacted on OpenSea from 2017 to 2022, we demonstrate the importance of community and consensus, two common concepts in decentralized Web3 business model, in driving the popularity and pricing of NFT in the marketplace. Our results show that both prediction accuracy and interpretability can be improved by incorporating behavioral and economic components to the machine learning models.

Thursday, 8:30AM

TA11

Cambridge - Level 2

ISMS Doctoral Dissertation Winners I

Special Session

Session Chair

Jiwoong Shin, Yale School of Mangement, New Haven, CT

Thursday, 8:30AM

TA11

Cambridge - Level 2

ISMS Doctoral Dissertation Winners I

Special Session

1 Doctoral Award Winners Special Session

Jiwoong Shin, Yale School of Mangement, New Haven, CT

Doctoral Award Winners will give their presentations.

Thursday, 8:30AM

TA11

Cambridge - Level 2

ISMS Doctoral Dissertation Winners I

Special Session

2 Designing Promises with Reference-Dependent Customers: The Case of Online Grocery Delivery Time

George Gui, Stanford GSB, Stanford, CA

Firms often need to promise a certain level of service quality to attract customers, and a central question is how to design promises to balance the trade-off between customer acquisition and customer retention. For example, most E-commerce platforms need to promise a certain delivery time. Over-promising may attract more customers now, but its impact on future retention depends on consumer inertia, learning, and loss aversion. Empirical analysis of this topic is challenging because the realized and promised service qualities are often unobserved or lack exogenous variation. We leverage a novel dataset from Instacart that directly observes variation in promised and actual delivery time to study this problem. We apply a generalized propensity score method to nonparametrically estimate the impact of delivery time on customer retention. Consistent with reference dependence and loss aversion, we document that customers are around 92% more responsive once the delivery becomes late. Our results inform a structural model of learning and reference dependence that illustrates the importance of estimating loss aversion and distinguishing promise-based reference points from expectation-based reference points: the company would forgo millions of dollars in revenue if it underestimates loss aversion or assumes expectation-based reference points.

Thursday, 8:30AM

TA11

Cambridge - Level 2
ISMS Doctoral Dissertation Winners I
Special Session

3 Measuring Fair Competition

Lukas Jürgensmeier, Goethe University Frankfurt, Frankfurt am Main, Germany.

Digital platforms use recommendations to facilitate the exchange between platform actors, such as trade between buyers and sellers. Platform actors expect, and legislators increasingly require that competition, including recommendations, are fair—especially for a market-dominating platform on which self-preferencing could occur. However, testing for fairness on platforms is challenging because offers from competing platform actors usually differ in their attributes, and many distinct fairness definitions exist. This article considers these challenges, develops a five-step approach to measure fair competition through recommendations on digital platforms, and illustrates this approach by conducting two empirical studies. These studies examine Amazon's search engine recommendations on the Amazon marketplace for more than a million daily observations from three countries. They find no consistent evidence for unfair competition through search engine recommendations. The article also discusses applying the five-step approach in other settings to ensure compliance with new regulations governing fair competition on digital platforms, such as the Digital Markets Act in the European Union or the proposed American Innovation and Choice Online Act in the United States.

Thursday, 8:30AM

TA11

Cambridge - Level 2
ISMS Doctoral Dissertation Winners I
Special Session

4 Economic Value of Visual Product Characteristics

Ankit Sisodia, Yale University, New Haven, CT, Contact: ankit.sisodia@yale.edu

Demand models typically use structured data for estimating the value of product characteristics. However, for several product categories such as automobiles, consumers emphasize that visual characteristics of the product are significant demand drivers. Since visual characteristics are typically in high-dimensional unstructured data (e.g., product images), this poses a challenge to incorporate them in demand models. We introduce a method that enables estimation of demand using visual characteristics, by building on the BLP demand model with recent advances in disentangled representation learning Our method also overcomes the challenge of not having supervised signals, which are required for good disentanglement, by using the demand model as supervisory signal. We discover independent and human interpretable visual characteristics directly from product image data, while simultaneously estimating equilibrium demand in a competitive automobile market in the UK. We conduct a counterfactual analysis using a recent dramatic change in the visual design language of BMW cars, and show our predicted results align with actual changes in BMW market share. To our best knowledge, this work is the first to link visual product characteristics with demand-in other words, to quantify the economic value of design.

Thursday, 8:30AM

TA12

Trinity - Level 2
Branding: Brand Equity
Contributed Sessions

Session Chair
Sajeev Nair, University of Kansas, Overland Park, KS

Thursday, 8:30AM

TA12

Trinity - Level 2
Branding: Brand Equity
Contributed Sessions

1 The Growing Power of Online Juggernauts: Aamazon'S Private Label Threat(?)

Zhiling Bei[1], Katrijn Gielens[2], [1]University of Missouri, Columbia, MO, [2]University of North Carolina-Chapel Hill, Chapel Hill, NC

Increasingly, rather than offering a gateway to consumers for national brands (NBs), online platforms, such as Amazon, started competing upfront by offering private labels (PLs) in their own names (e.g., Amazon Basics). This practice is deemed controversial and raises regulatory antitrust concerns leading to new proposed legislation in many jurisdictions. The Ending Platform Monopolies Act proposed in 2021 passed the House Judiciary Committee in the United States, which prohibits large online platforms, like Amazon, from selling PLs on their platforms. However, it is still unclear whether these antitrust concerns are justified and whether NBs are negatively affected by the platform's PLs. In this study, we investigate whether and how the introduction of Amazon PLs affects the NBs' performances. Specifically, we track the brand performances of more than 18,000 NBs sold on Amazon before and after Amazon PL introductions between 2015 and 2018. On average, PL introduction directly cannibalizes on NBs' sales (-1.53%). The cannibalization increases when PLs use similar (textual) product descriptions but different product images as NBs', and when NBs are low-priced and do not have a strong presence in offline stores. Furthermore, NB's sales are indirectly lifted by PL introduction via increasing NBs' review volume and the product availability sold by third-party sellers (3P). However, the indirect lift is insufficient to compensate for the indirect cannibalization caused by PL introduction via increasing NBs' price relative to PLs, reducing NBs' consumer review valence and homogeneity, and decreasing the product availability sold by platforms.

Thursday, 8:30AM

TA12

Trinity - Level 2
Branding: Brand Equity
Contributed Sessions

2 Inferring Brand Loyalty from Substitution Patterns After Product Removal

Simha Mummalaneni[1], Jonathan Z. Zhang[2], [1]University of Washington, Seattle, WA, [2]Colorado State University, Fort Collins, CO, Contact: Jonathan.Zhang@colostate.edu

Identifying and measuring brand loyalty from secondary data is of immense interest to brands and retailers. However, extant approaches suffer from the limitations of consumers' unobservable consideration set, making the observed brand choices indistinguishable between habit vs. conscious brand loyalty decisions. To address this issue, we employ the non-parametric method of product diversion ratio from economics as an alternative measure of brand loyalty in the context of permanent product removal, in which SKUs are permanently removed from the store. This type of product removal serves as an external shock that forces consumers to change to another SKU within the same brand, switch to another brand, or forgo the category. Using IRI store-level data in the peanut butter category from 2001-2011, we examine what happens after more than 200,000 different product removal events. In particular, we measure three key outcomes: (1) the impact on its own brand's category share, (2) on each of the competing brand's category share, and (3) on the total revenue change of the category for the store. Across all stores, our results indicate significant ranges in diversion ratio and changes in total category revenue, indicating large differences in brand loyalty. Furthermore, we find that brands' diversion ratios are moderated by the number of brands available and by store sizes, indicating the contextual nature of brand loyalty. Our method and results can provide a rank of brand loyalty from aggregate scanner data, and can be used to guide brands' product line management and retailers' shelf-space management decisions.

Thursday, 8:30AM

TA12

Trinity - Level 2
Branding: Brand Equity
Contributed Sessions

3 A Bayesian Dynamic Linear Model for Brand Equity

Morgan Bale[1], Eric T. Bradlow[2], Elea McDonnell Feit[3], [1]Drexel University, Philadelphia, PA, [2]University of Pennsylvania, Philadelphia, PA, [3]Drexel University, Philadelphia, PA, Contact: mab825@drexel.edu

This paper presents a statistical model to measure brand equity as it changes over time, and gauges the impact of changing brand equity on consumers' product choices. Our model extends traditional models of brand equity by using weekly UPC-level product choices (nested within brands in a hierarchical way) to estimate a brand's dynamic equity, while also (in a new to the literature way) accounting for dynamic brand equity's affect on marketing mix coefficients. Due to the potential for both marketing mix and price endogeneity, we introduce a two-level copula structure as price and marketing enter our Bayesian models at different levels. We apply the proposed model in an empirical application using a panel data set of households' purchases in the diet soda category, demonstrating that brand equity has a measurable effect on price sensitivity and other marketing mix coefficients. We utilize our model to optimize the timing and depth of marketing and to derive optimal weekly prices comparing those results to simpler benchmark models. As we show, this extended model provides firms and researchers with a more comprehensive view of brand equity, and leads to novel strategies for building and exploiting the strength of a brand.

Thursday, 8:30AM

TA12

Trinity - Level 2
Branding: Brand Equity
Contributed Sessions

4 Shrinkflation - the Effect of Subtle Package Downsizing on Brand Performance

Timpe Callebaut[1], Kathleen Cleeren[1], Kelly Geyskens[2], Kristiaan Helsen[3], [1]KULeuven, Antwerpen, Belgium; [2]Maastricht University, Maastricht, Netherlands; [3]HKUST, New Territories, Hong Kong. Contact: timpe.callebaut@kuleuven.be

Shrinkflation is a package downsizing trend which combines a subtle decrease in package size with an increase in price per volume unit. While ubiquitous in today's retail environment, this is underresearched in the marketing literature. Emerging at the intersection of package downsizing and implicit price increases, this trend depends on various consumer mechanisms. In particular, seeing as the downsizing is meant to go by unnoticed, shrinkflation is the ideal intermediary to look at how consumers react to subtle adaptations of brand assortment, and whether this attempt to bypass the perceived (un)fairness of a price increase can prove successful. Using IRI retail scanner data from five large Dutch grocery chains, we study the effect of more than 400 shrinkflation introductions on brand performance and investigate the moderating effect of shrinkflation characteristics (i.e., magnitude of size decrease, price increase), brand characteristics (i.e., private label/national brand, assortment depth), and category characteristics (i.e., perceived healthiness, hedonic vs utilitarian, interpurchase time).

Thursday, 8:30AM

TA12

Trinity - Level 2
Branding: Brand Equity
Contributed Sessions

5 The Role of Brand Strength on Quantity Discounts: An Empirical Investigation

Sajeev Nair[1], Kissan Joseph[2], [1]University of Kansas, Lawrence, KS, [2]University of Kansas, Lawrence, KS, Contact: sajeev.nair@ku.edu

Quantity discounts have been commonly viewed as a price discrimination tool in the economics and marketing literature. Traditionally, quantity discounts are set by considering consumer storage costs, consumption rates, and transaction costs. However, previous literature has not considered the role of brand strength in setting quantity discounts. While it is well-documented that national brands are priced higher than private labels in most product categories, it is not clear whether this pricing power influences the quantity discounts that national brands set. Using retail sales data from multiple product categories, we develop a model that captures the effect of brand strength on quantity discounts. The model accounts for category characteristics by controlling for the private label quantity discounts. We also investigate whether the promotional activity of brands in their small packs reduces their pricing power for large packs. Preliminary results show that the effect of brand strength on quantity discounts varies by product category.

Thursday, 8:30AM

TA13

Escorial - Level 2
Privacy & Marketing Analytics
Special Session

Session Chair
Gilian Ponte, University of Groningen, Groningen, Netherlands.

Thursday, 8:30AM

TA13

Escorial - Level 2
Privacy & Marketing Analytics
Special Session

1 Determining Advertising Spillovers and Attribution Under Emerging Privacy Regulation

Pallassana K. Kannan[1], Zipei Lu[2], Xian Gu[3], [1]University of Maryland-College Park, College Park, MD, [2]University of Maryland, College Park, MD, [3]Indiana University, Bloomington, Bloominton, IN

With consumer privacy concerns becoming more salient, obtaining granular data on customer touchpoints is becoming increasingly difficult given the recent privacy regulations and changes in data policy by Big Tech firms. While firms can collect granular first-party data, the previously granular second-party and third-party data are either available only in aggregate form or not available at all. We discuss solution methodologies based on recent developments in generative AI techniques to measure the advertising spillovers and value of advertising instruments in effecting conversions. Based on a simulation, we show that our model is able to generate and recover original granular data with a high degree of confidence. We show how firms will be able to determine advertising spillovers and attribution using such generated data in real life applications.

Thursday, 8:30AM

TA13

Escorial - Level 2
Privacy & Marketing Analytics
Special Session

2 Reidentification Risk in Panel Data: Protecting For*K*-Anonymity

Matthew Schneider[1], Shaobo Li[2], Yan Yu[3], Sachin Gupta[4], [1]Drexel University, Philadelphia, PA, [2]University of Kansas, Lawrence, KS, [3]University of Cincinnati, Cincinnati, OH, [4]Cornell University, Ithaca, NY, Contact: mjs624@drexel.edu

We consider the risk of reidentification of panelists in marketing research data that are widely used to obtain insights into buyer behavior and to develop marketing strategy. We find that 17%-94% of the panelists in 15 frequently bought consumer goods categories are subject to high risk of reidentification through a potential record linkage attack based on their unique purchasing histories even when their identities are anonymized. We first demonstrate that the risk of reidentification is vastly understated by unicity, the conventional measure. Instead, we propose a new measure of reidentification risk, termed sno-unicity, which accounts for the longitudinal nature of panel data, and show that it is much larger than unicity. To protect the privacy of panelists, we consider the well-known privacy notion of k-anonymity and develop a new approach called graph-based minimum movement k-anonymization (k-MM) that is designed especially for panel data. The proposed k-MM approach can be formulated as an optimization problem in which the objective is to minimally distort variables in the original data based on weights that users prespecify corresponding to their use case. We further show how our approach can be extended to achieve l-diversity. We apply the k-MM approach to two different panel data sets that are widely used in marketing research. To achieve a given privacy level, compared with several benchmark protection methods, the protected data from our method result in the least distortion in inferences about key marketing metrics, such as brand market shares, share of category requirements, brand switching rates, and marketing-mix parameters estimated from a hierarchical Bayesian brand choice model.

Thursday, 8:30AM

TA13

Escorial - Level 2
Privacy & Marketing Analytics

Special Session

3 Coppacalypse? the Youtube Settlement'S Impact on Kids Content Creation

Garrett A. Johnson[1], Tesary Lin[2], James Cooper[3], [1]Boston University, Boston, MA, [2]Boston University, Cambridge, MA, [3]George Mason University, Arlington, VA, Contact: garjoh@bu.edu

We examine the impact of the FTC's COPPA settlement with YouTube. As part of the settlement, YouTube agreed to remove all forms of personalization for child-directed content. This included personalized advertising, which content creators worried would limit their revenue. To study this, we compare the child-directed content creators on YouTube to their non-child-directed counterparts. We find that child-directed content creators reduced the number of videos that they released after the settlement in 2020. We also find that creators pivoted away from child-directed content to non-child directed content: particularly for content creators that created both types of content prior to 2020.

Thursday, 8:30AM

TA13

Escorial - Level 2

Privacy & Marketing Analytics

Special Session

4 Private Causal Neural Networks

Gilian Ponte[1], Tom Boot[1], Thomas Reutterer[2], Jaap Wieringa[1], [1]University of Groningen, Groningen, Netherlands; [2]Vienna University of Economics and Business, Vienna, Austria.

Marketing's motivation to spend every dollar efficiently has resulted in an unprecedented level of sophistication in designing optimal targeting policies. Such practices are often experienced as intrusive and give rise to consumers' privacy concerns — making policymakers and firms grapple with consumers' privacy protection. For example, recently Meta's ad practices were ruled illegal under E.U. law. We develop a causal neural network training approach that estimates the incremental effect of targeting, i.e., the conditional average treatment effect (CATE). To protect privacy, we incorporate differential privacy into this framework and develop a "private causal neural network". In two simulation studies, we demonstrate the private causal neural network's ability to accurately learn the true population CATE. In a field experiment, we employ the private causal neural network to learn the incremental effect of a targeted discount coupon while simultaneously limiting the customers' privacy risk. In a second field experiment, we use trained private causal neural networks (that satisfy varying levels of differential privacy) to (out-of-sample) predict the CATE over 400,000 new customers, who based on these predictions receive a physical discount coupon. Ultimately, we estimate the treatment effect of the privacy risk (from differential privacy) on targeting's profits.

Thursday, 8:30AM

TA14

Alhambra - Level 2

Game Theory: Channels

Contributed Sessions

Session Chair

Weixuan Zhou, 1</sup

Thursday, 8:30AM

TA14

Alhambra - Level 2

Game Theory: Channels

Contributed Sessions

1 Upstream Competition and Manufacturer Disclosure Strategies

Arash Roghani[1], Mrinal Ghosh[2], [1]University of Arizona, Tucson, AZ, [2]University of Arizona, Tucson, AZ, Contact: arashr@arizona.edu

The literature on voluntary disclosures (Grossman 1981) suggests that when buyers have rational expectations, the seller fully discloses private information (e.g., relevant product attributes) under an unraveling equilibrium. We investigate the impact of the upstream channel structure on the downstream manufacturer's disclosure strategy. Specifically, we explore the interaction between the quality of the manufacturer's offering and the level of suppliers' competition on the manufacturer's disclosure decision. In contrast with a setting with a monopoly supplier, we find that perfect competition between suppliers leads to a full disclosure equilibrium across all quality levels. However, when supplier competition is imperfect, we obtain a partial disclosure equilibrium where, despite disclosure being costless, the manufacturer discloses for high and medium-low quality levels but avoids disclosure for low and medium-high quality levels. This is a result of three different effects of an increase in quality levels on the manufacturer's profit: the positive demand-enhancing effect, the negative margin-reducing effect, and the positive supplier competition effect. We analytically explain why high-quality levels will be disclosed in a partial disclosure equilibrium. Furthermore, we show that for certain quality levels, suppliers can prod the manufacturer to disclose quality either by providing incentives through side payments or by pre-committing to a wholesale price.

Keywords: information disclosure, marketing channels, upstream competition, unraveling equilibrium, partial disclosure

Thursday, 8:30AM

TA14

Alhambra - Level 2

Game Theory: Channels

Contributed Sessions

2 Resale Price Maintenance in Franchising: Franchisee Selection and Service Provision

Weixuan Zhou, Hong Kong University of Science and Technology, Hong Kong, Hong Kong. Contact: wzhouac@connect.ust.hk

We study the market outcome and welfare implication in a setting in which a monopoly franchisor directly determines the resale price of its franchisees. Potential franchisees have different service costs, which are unknown to the franchisor. The service level is non-contractible and affects the payoffs of the franchisor. We find that allowing for price restrictions by the franchisor can improve every party's payoff. We also discuss the welfare consequence of price restrictions and lump-sum payments in different cases.

Thursday, 8:30AM

TA15

Michaelangelo - Level 2

CRM: Consumer Behavior I

Contributed Sessions

Session Chair

Sungwook Min, CSU- Long Beach, Long Beach, CA

Thursday, 8:30AM

TA15

Michaelangelo - Level 2

CRM: Consumer Behavior I

Contributed Sessions

1 Developing Customer Engagement Behaviour and Brand Loyalty Through Perceived Value: Perspectives from Lifestyle Branded Mobile Application

Vikrant Janawade, Université Cote d'Azur, Nice, France.

Facilitating value and seeking engagement from customers are highly discussed topics in branded mobile application (app) landscape. Several lifestyle mobile apps have appeared to be offering not only trustworthy, informative services and experiences, but they are also keen in developing their customers' value, engagement, and loyalty. Whilst the demand for lifestyle based branded mobile apps are spiking with popularity, knowledge about the influence of customer experience, information quality, involvement, and trust on perceived value of lifestyle based branded mobile applications remains unclear. Based on the aforementioned aspects, this study aims to examine the influence of customers' experience, information quality, perceived trust and perceived involvement on perceived value of lifestyle based branded mobile apps. Secondly, this study examines whether customer engagement behaviour is influenced by perceived value. Lastly, the study examines whether lifestyle based branded mobile apps loyalty is influenced by perceived value and customer engagement behaviour. Therefore, the principal hypotheses of this study are that customers of lifestyle based branded mobile apps develop their value through trust, involvement, and customer experience, and information quality. Furthermore, brand loyalty of lifestyle based branded mobile apps is influenced by perceived value and customer engagement behaviour.

Thursday, 8:30AM

TA15

Michaelangelo - Level 2

CRM: Consumer Behavior I

Contributed Sessions

2 Capturing Individual Loss Aversion: Evidence from the Casino Industry

Wayne Taylor[1], Jonathan Zhang[2], [1]Southern Methodist University, Dallas, TX, [2]Colorado State University, Fort Collins, CO, Contact: wjtaylor@smu.edu

Loss aversion is fundamental to consumer behavior and marketing. Traditionally, consumer behavior has treated loss aversion as constant across individuals. Only more recent research has shown that loss aversion is heterogeneous and may depend on variables such as demographics and experience. In this research we contribute to this growing work by modeling loss aversion as an individual measure. We do this using unique panel data of over ten thousand slot machine gamblers over a decade of casino visits. Using information on their betting behavior and outcomes across trips, we demonstrate that loss aversion is heterogeneous and depends on the reference construction of the gambler (e.g., a gain or loss relative to the prior outcome as opposed to the absolute gain or loss). Further, we show that these differences across gamblers interact with marketing activity. Our research suggests that by incorporating the estimated loss aversion parameters into the casino's CRM decision making process, the firm can improve room comp and promotional credit efficiency substantially.

Thursday, 8:30AM

TA15

Michaelangelo - Level 2

CRM: Consumer Behavior I

Contributed Sessions

3 Attitudinal and Behavioral Loyalty in International Markets

Freja Lindemann, Kay Peters, University of Hamburg, Hamburg, Germany. Contact: freja.lindemann@uni-hamburg.de

Firms invest billions to achieve customer loyalty. However, most firms fail to achieve true loyalty. Attitudinal and behavioral loyalty must be present to achieve true customer loyalty. Therefore, researchers investigate how to create both dimensions and enforce their relationship through marketing strategies. However, the product category and the culture can be boundary conditions to the relationship of attitudinal and behavioral loyalty. Consequently, they must be considered to design effective loyalty strategies. Surprisingly, effects of these boundary conditions on the relationship of attitudinal and behavioral loyalty are still blind spots in loyalty research. We close this gap by investigating the moderating effect of product category and culture on the relationship of attitudinal and behavioral loyalty. We use online surveys across several countries and Structural Equation Modelling to reveal the effects of product category, culture, and their intertwined effect on the relationship of attitudinal and behavioral loyalty.

Thursday, 8:30AM

TA15

Michaelangelo - Level 2

CRM: Consumer Behavior I

Contributed Sessions

4 Financial Advisor's Service Effort: Decisions and Consequences

Sungwook "Sam" Min[1], Xubing Zhang[2], [1]CSU- Long Beach, Long Beach, CA, [2]Hong Kong Polytechnic University, Kowloon, Hong Kong. Contact: sam.min@csulb.edu

In financial service industry, financial advisors put major effort in providing financial advising services to their clients but face a number of challenges in allocating their service effort. Not all clients seek financial advising, which means that financial advisors need to identify their target clients whose investment activities might be aided by financial advising. At the same time, target clients should be easily influenced by financial advising in advisors' own interests (e.g., promotion of clients' trading and sales of financial products). This challenge becomes salient as the number of clients increases. How many clients should a financial advisor contact if he/she cannot provide financial services to all of them and how frequently should he/she provide the services in a period? How are these decisions influenced by customer characteristics and market situations? To address these questions, we analyze service efforts of over 600 financial advisors for their 26,000 clients in 16 quarters. Service effort is measured by the number of financial service interactions provided by financial advisor to a client in a quarter. We found that a financial advisor's service effort become highly selective as the number of clients increases. In general, a financial advisor provides more service effort to the clients who have a bigger asset in their account and in a bull market than in a bear market. Overall, service effort increases trading turnover and sales of financial products. Nevertheless, the impact of service effort on trading are much less for those clients who have a bigger investment asset. Furthermore, the impact of financial effort on client's trading is negligible in a bear market.

Thursday, 8:30AM

TA16

Raphael - Level 2
Marketing for Environmental Sustainability I
Special Session

Session Co-Chair
Yewon Kim, Stanford Graduate School of Business, Stanford, CA

Thursday, 8:30AM

TA16

Raphael - Level 2
Marketing for Environmental Sustainability I
Special Session

Session Co-Chair
Bryan K. Bollinger, NYU Stern School of Business, New York, NY

Thursday, 8:30AM

TA16

Raphael - Level 2
Marketing for Environmental Sustainability I
Special Session

Session Co-Chair
Kristina Brecko, Stanford University, Rochester, NY

Thursday, 8:30AM

TA16

Raphael - Level 2
Marketing for Environmental Sustainability I
Special Session

Session Chair
TI Tongil Kim, University of Texas at Dallas, Richardson, TX

Thursday, 8:30AM

TA16

Raphael - Level 2
Marketing for Environmental Sustainability I
Special Session

1 Voluntary Provision of Sustainability Claims: Evidence from Consumer Packaged Goods

Kristina Brecko[1], Yewon Kim[2], [1]University of Rochester Simon Business School, Rochester, NY, [2]Stanford Graduate School of Business, Stanford, CA, Contact: yewonkim@stanford.edu

We study firms' voluntary provision of sustainability claims in the consumer packaged goods (CPG) market using detailed information on product labels. Analyzing product-level information and sales data across 43 product markets in the health and beauty care, detergents, and household cleaners categories from 2012 to 2020, we find that firms' decisions to provide sustainability claims are systematically correlated with the nature of competition within a product market, while not much correlated with the market's average demand for sustainability claims. The pattern is robust even within a single brand that covers multiple product markets, suggesting that brands make strategic choices when providing claims based on market-specific competition. Our findings have implications on market interventions for sustainability including anti-greenwashing regulations.

Thursday, 8:30AM

TA16

Raphael - Level 2
Marketing for Environmental Sustainability I
Special Session

2 State Dependence in Sustainable Product Purchases

Levin Zhu[1], Bryan K. Bollinger[2], Randi Kronthal-Sacco[3], [1]Duke University Fuqua School of Business, Durham, NC, [2]NYU Stern School of Business, New York, NY, [3]NYU Stern Center for Sustainable Business, New York, NY, Contact: levin.zhu@duke.edu

Market shares for sustainability-labelled products in consumer packaged goods (CPG) have grown rapidly relative to those without sustainability claims in the US in recent years. However, the prevalence of such products is still widely varying across geographies and product categories. Choice experiments and observational studies using aggregate market-level data have previously shown that while the presence of sustainability claims generally increase consumers' preferences for products, there is substantial heterogeneity depending on socio-demographics, psychographics, social influences, and firm, product, and claim characteristics. We utilize household trip-level retail store purchases across five CPG categories over five years from 2017 to 2021 to investigate whether purchase histories are another source of consumer heterogeneity in driving sustainable product demand. In our preliminary findings, we find consumers on average exhibit state dependence towards sustainability labels ("sustainability loyalty") for some product categories but not towards the brand of the product when it has a sustainability claim ("sustainable brand loyalty"). That is, households in our sample are more likely to purchase a sustainable product if their previous product purchased in the category was also sustainable, but they are no more or less likely to purchase the same sustainable product if the previous product purchased was from the same brand. We explore the implications of introducing new sustainable products or sustainability claims to existing products for firms and consumers.

Thursday, 8:30AM

TA16

Raphael - Level 2

Marketing for Environmental Sustainability I

Special Session

3 Hen or Human? a Study on Potential Trade-Offs Between Animal Welfare Legislation and Environmental Sustainability

TI Tongil Kim, Yeowoon Park, University of Texas at Dallas, Richardson, TX, Contact: yxp210025@utdallas.edu

Recent shifts in public opinion have spurred states to implement animal welfare legislation in the US. For example, in January 2015, California started mandating that egg-laying hens be raised in spacious living conditions. We study the impact of this law by comparing fresh egg markets in California and neighboring states. We first find increases in the number of products, especially cage-free eggs, as well as the average egg price in California post-policy. We also find increased overall demand for eggs, suggesting that animal welfare legislation may lead to a higher environmental impact in terms of land use, water consumption, and greenhouse gas emissions. Overall, the results highlight the need for policymakers to consider the trade-offs between social goals such as animal welfare and environmental sustainability.

Thursday, 8:30AM

TA17

Balmoral Level 2

Analytic Models of Communication

Special Session

Session Chair

Aniko Oery, Yale School of Management, New Haven, CT

Thursday, 8:30AM

TA17

Balmoral Level 2

Analytic Models of Communication

Special Session

1 Duopoly Competition with Consumer Ratings

Tommaso Bondi, Cornell University, New York, NY

How does the presence of ratings affect firm competition? We study this question theoretically by modeling duopoly competition with endogenous ratings. In the model, firms and consumers learn simultaneously as ratings arrive. We show that, contrary to the case of one-sided learning, learning from ratings often increases firms' welfare and hurt consumers' welfare once the firms' strategic responses are endogenized. We decompose these responses in a price effect and a differentiation effect. Consumers' rationality increases their welfare compared to the case of naïve learning, but needs not make them better off than in the no-learning case.

Thursday, 8:30AM

TA17

Balmoral Level 2

Analytic Models of Communication

Special Session

2 Dynamic Persuasion and Strategic Search

Yunfei Yao, University of California-Berkeley, Berkeley, CA
Consumers frequently search for information before making decisions. Since their search and purchase decisions depend on the information environment, firms have a strong incentive to influence it. This paper endogenizes the consumer's information environment from the firm's perspective. We consider a dynamic model where a firm sequentially persuades a consumer to purchase the product. The consumer only wishes to buy the product if it is a good match. The firm designs the information structure. Given the endogenous information environment, the consumer trades off the benefit and cost of information acquisition and decides whether to search for more information. Given the information acquisition strategy of the consumer, the firm trades off the benefit and cost of information provision and determines how much information to provide. This paper characterizes the optimal information structure under a general signal space. We find that the firm only smooths information provision over multiple periods if the consumer is optimistic about the product fit before searching for information. Moreover, if the search cost for the consumer is high, the firm designs the information such that the consumer will be certain that the product is a good match and will purchase it after observing a positive signal. If the search cost is low, the firm provides noisy information such that the consumer will be uncertain about the product fit but will still buy it after observing a positive signal.

Thursday, 8:30AM

TA17

Balmoral Level 2
Analytic Models of Communication
Special Session

3 A Unifying Framework of Information Sharing and Implications on Informational Value and False Information

Chi-Ying Wang[1], Aniko Oery[1], Hung-Ni Chen[2], [1]Yale School of Management, New Haven, CT, [2]Ludwig-Maximilians-Universität München, Munich, Germany. Contact: chi-ying.wang@yale.edu
We present a unified framework of information sharing that accommodates different incentives to share verifiable information. A sender with unknown past experience decides whether to share a signal about a payoff-relevant state with a receiver. She wants to persuade the receiver to take a particular action (persuasive incentive) while also caring about her reputation as an expert (self-enhancement incentive). In this setting, the sender's experience can provide additional information to the receiver about the state. We show that a receiver might prefer to face a biased sender. The optimal bias depends on the prior belief, the sender's prior reputation, the information's exclusivity, and the strength of the self-enhancement motive. We then study the implication on disinformation--sharing of information by the sender that contradicts her own posterior beliefs--and misinformation--sharing of information that turns out to be wrong ex-post. In particular, we present conditions when a higher sender's prior reputation can lead to more sharing of misinformation and disinformation. Finally, we generalize our framework to accommodate other incentives, such as social bonding and emotion regulation, and show how these motives affect the outcomes. This framework is relevant for information-sharing platforms such as Twitter, where users with various degrees of information (senders) can re-tweet content so that it is viewable by their followers (receivers).

Thursday, 8:30AM

TA18

Windsor - Level 2
Retailing:Consumer Choice I
Contributed Sessions

Session Chair
David Jaud, Kedge Business Schoo, Talence, France.

Thursday, 8:30AM

TA18

Windsor - Level 2
Retailing:Consumer Choice I
Contributed Sessions

1 Nudging Healthier Foods or Dishes: A Collaborative Field Experiment Between Manufacturers and Retailers

Qinghan Yan[1], Paulo Albuquerque[2], Pierre Chandon[2], [1]INSEAD, Fontainebleau, France; [2]INSEAD, Fontainebleau, France. Contact: qinghan.yan@insead.edu
Despite promising results in laboratory studies, information nudges such as nutrition labels designed for healthier food purchases only have disappointingly small effects in the field. In addition, food labeling is opposed by manufacturers of

products, such as cheese, that cannot be reformulated to obtain a better label while remaining attractive to consumers. Conversely, fruits and vegetables, which are universally recognized as healthy, have typically been less promoted at the point of purchase than calorie-rich and nutrition-weak food products. To address this challenge, we co-created novel interventions by collaborating with half a dozen food manufacturers and a large retail chain and tested them in a large field experiment in 21 supermarkets and hypermarkets over more than one year.
The first intervention consisted in an end-of-aisle display promoting products from different manufacturers selected because of their superior nutritional value as measured by the Nutri-Score label. Each intervention focused on a common theme (e.g., "let's reduce sugar"). The second intervention focused on food products such as cheese, that could not be promoted alone because they have an intrinsically low Nutri-Score label due to their fat or calorie content. These products were promoted as ingredients in plant-based dishes, and as means to consume more fruits and vegetables. Fruits or vegetables were displayed alongside the promoted products, with a coupon offering a discount if the promoted product was purchased with the fruits or vegetables.
Difference-in-difference estimates in the sales of the treated food products, controlling for price, reveal that the nudges were effective in selling the promoted products. Ongoing research is examining the effects on consumer attention and evaluation of the nudges, measured via a survey sent to the loyalty card holders in both treated and control stores. Overall, this research shows that innovative food marketing can be a force for good in promoting healthier food purchases and can help align the goals of manufacturers, retailers, and public health.

Thursday, 8:30AM

TA18

Windsor - Level 2
Retailing:Consumer Choice I
Contributed Sessions

2 Impact of Prior Consumption on Purchases

Henri Defoor[1], Kathleen Cleeren[2], Neomie Raassens[3], Jeff Inman[4], [1]KU Leuven, Antwerpen, Belgium; [2]KU Leuven, Antwerpen, Belgium; [3]Eindhoven University of Technology, Eindhoven, Netherlands; [4]University of Pittsburgh, Pittsburgh, PA, Contact: henri.defoor@kuleuven.be

Consumers are often faced with uncertainty during grocery shopping due to concerns regarding product quality and performance during consumption. To cope with this uncertainty, theory suggests two types of information sources available to consumers: external and internal sources. The former refers to factors related to the grocery shopping context, such as the marketing stimuli (e.g., packaging, promotion). The latter focuses on memories and experiences residing in consumers' minds. For instance, research shows the importance of purchase history during current choices. Additionally, consumer behavior literature suggests that, next to purchase history and external sources, prior consumption should be considered as another internal information source due to its vividness. Indeed, prior research reveals that information vividness facilitates retrieval. However, the extent to which prior consumption plays a role during grocery shopping is still undetermined empirically. That is our focal question: how does prior consumption affect current purchase decisions? Based on the "decision making under uncertainty framework" and "vividness theory", we posit that prior consumption influences current purchase decisions, next to purchase history and external factors. We have access to a unique dataset combining information from consumption diaries and purchase scanner data for the same panel of households. Using a multinomial logit model, we examine the impact of prior consumption incidence on current brand choices and the moderating role of product-category and household characteristics that demonstrate the underlying mechanisms of uncertainty and vividness. The results show that prior consumption incidence is crucial during brand choice next to marketing stimuli and prior purchase behavior. Moreover, category and household characteristics determine the importance of prior consumption vis-à-vis other sources. Overall, our research contributes to enhancing the choice literature by revealing the pivotal role of prior consumption.

Thursday, 8:30AM

TA18

Windsor - Level 2
Retailing:Consumer Choice I
Contributed Sessions

3 Customer Search and Product Returns

Marat Ibragimov[1], Siham El Kihal[2], John R. Hauser[3], [1]Massachusetts Institute of Technology, Cambridge, MA, [2]Frankfurt School of Finance & Management gGmbH, Frankfurt Am Main, Germany; [3]MIT, Cambridge, MA, Contact: s.elkihal@fs.de

Online retailers are challenged by frequent product returns with $428 Billion in merchandise returned to US retailers in 2020 (National Retail Foundation 2021). Previous research has focused on linking customers' purchase and return decisions. However, online retailers have access to the information which precedes the purchase decision - customer search. We demonstrate that customer search information provides important insights about product returns. Using data from a large European apparel retailer, we propose and estimate a joint model of customer search, purchase, and return decisions. We then provide theoretical and empirical evidence indicating that customers with an extensive search for the product (e.g. many different products) are more likely to return the product.

Thursday, 8:30AM

TA18

Windsor - Level 2
Retailing:Consumer Choice I
Contributed Sessions

4 Is Less More? the Effect of Product Label Design on Sales

David A. Jaud[1], Esther E. D. T. Jaspers[2], Valentyna Melnyk[3], [1]Kedge Business School, Talence, France; [2]Massey University, Albany, New Zealand; [3]UNSW, Sydney, Australia. Contact: david.jaud02@kedgebs.com

We examine the effects of objective characteristics of label design on sales of hedonic products. Despite a consensus in the literature that label design influences product evaluations, less is known about whether, when, and which aspects of label design drive actual purchases over and above the effects of the other marketing mix elements (i.e., price, product, promotion and distribution). We test our predictions on a large dataset of observed weekly sales for 127 wine labels over 105 weeks across two stores. We find that label design, i.e., objective measures of design fluency that the marketer can directly control: contrast, complexity, and self-similarity, has a distinct effect on product sales while controlling for other marketing mix variables. Specifically, we find that low complexity (e.g., labels with less overall variation in their visual features), high contrast (e.g., easier to read labels with textual or pictorial elements clearly distinct from the label background) and high self-similarity (e.g., labels that appear similar to their own parts, such as labels with a repetitive pattern) enhance sales. Yet, price is an important boundary condition of the above effects. In line with the Fluency Amplification Model, while fluency of label design hardly matters for cheaper products, it becomes important for higher-priced products. This research has implications for marketing academics, practitioners, and retailers. It provides recommendations on which front-label design elements drive sales across different price points, which is particularly relevant in usually cluttered retail environments.

Thursday, 8:30AM

TA19

Sandringham - Level 2
Pricing: Algorithmic Pricing
Contributed Sessions

Session Chair
Jiaqi Shi, UC Irvine, Irvine, CA

Thursday, 8:30AM

TA19

Sandringham - Level 2
Pricing: Algorithmic Pricing
Contributed Sessions

1 The Challenges of Deploying an Algorithmic Pricing Tool: Evidence from Airbnb

Mohsen Foroughifar[1], Nitin Mehta[2], [1]University of Toronto, Toronto, ON, Canada; [2]University of Toronto, toronto, ON, Canada. Contact: mohsen.foroughifar@rotman.utoronto.ca

We study the deployment of an algorithmic pricing tool, Smart Pricing (SP), on Airbnb's platform. SP is a machine learning algorithm that uses past data to predict demand and employs proxies correlated with the host's marginal cost to set prices for listings. The success of such deployments depends on how well the algorithm performs and how sellers use the tool for their business decisions. Our analyses suggest that adopting SP is associated with higher benefits for hosts who rarely change their prices compared to those who flexibly adjust their prices before adoption. However, hosts who rarely change their prices are surprisingly less likely to adopt SP. To understand how the platform can overcome this challenge, we propose and estimate a dynamic structural model in which hosts make adoption decisions based on their expectations of the algorithm's behavior. Our estimation results identify a gap between the actual performance of the SP algorithm and the host's prior belief about it. Specifically, hosts with a pessimistic prior belief about SP think they will need to manually correct algorithmic prices if they adopt SP, and this belief is disproportionately stronger for hosts with higher adjustment costs, making SP adoption less attractive to them. Our counterfactual simulations indicate that the introduction of SP has had a small positive impact on the average host profit and the total platform revenue. But this boost can be significantly raised if Airbnb educates hosts to correct their beliefs about SP. This highlights the need for proper communication of the algorithm's benefits and how it works in order to successfully deploy a machine learning tool. The counterfactual analyses also demonstrate that, since the platform does not fully capture the host's private marginal cost in training the algorithm, using estimated costs from the structural estimation to re-train the algorithm can significantly increase the profitability of SP for both hosts and the platform. It suggests that combining the results of structural models and machine learning tools can help platforms design better algorithms.

Thursday, 8:30AM

TA19

Sandringham - Level 2
Pricing: Algorithmic Pricing
Contributed Sessions

2 Algorithmic Pricing: Consumer Reactions and Effective Retailer Responses

Arnd Vomberg[1], Panagiotis Sarantopoulos[2], Christian Homburg[1], [1]University of Mannheim, Mannheim, Germany; [2]The University of Manchester, Manchester, United Kingdom. Contact: vomberg@uni-mannheim.de

The widespread adoption of pricing algorithms in online markets has led to increased price volatility, conflicting with consumers' preference for price stability. Yet, so far, the effects of such pricing algorithms on consumers are unclear. This paper investigates algorithmic dynamic pricing (ADP), the focal form of algorithmic pricing in online markets. Drawing on price fairness and range-frequency theory, five studies (one real-life ADP-encounter and four incentive-aligned experimental studies) explore the effects of ADP on consumer trust and price search behavior. Overall, consumers are averse to ADP; they trust ADP retailers less and compare prices more frequently under ADP. However, the negative effect of ADP on trust is nullified if consumers have already experienced ADP as they have likely accepted ADP as a pricing rule (the habituation effect). Moreover, ADP's effect on price search actually reverses (an asymmetric effect) if consumers are price-advantaged or if ADP is the market norm—a favorable effect from a retailer's perspective. To effectively manage ADP, managers should offer cash price-matching guarantees. Consumers trust ADP retailers offering such guarantees more and compare prices less. However, retailers should be cautious when communicating a reactive ADP approach (i.e., the automatic matching of competitor prices). Its communication can stimulate consumer trust but can also have the unintended consequence of nudging consumers to compare competitor prices more frequently.

Thursday, 8:30AM

TA19

Sandringham - Level 2
Pricing: Algorithmic Pricing
Contributed Sessions

3 Consumer Aversion to Algorithm-Driven Price Volatility: Empirical Investigation of Airbnb

Jiaqi Shi, UC Irvine, Irvine, CA, Contact: jiaqis@uci.edu

Dynamic-pricing algorithms have enabled frequent price adjustments to improve sales. Yet, overly frequent price fluctuations may complicate consumers' purchase decisions. This paper empirically investigates how algorithm-driven price volatility influences the occupancy rates of more than 105,000 rental properties in New York City listed on Airbnb. Because properties on Airbnb can be booked up to 12 months in advance, we compile two price-volatility measures: a property's frequency of price changes across travel dates on a given booking date (i.e., volatility over travel dates) and a property's frequency of price changes across booking dates on a given travel date (i.e., volatility over temporal distances). For both measures, the occupancy rates increase from flat pricing to a certain degree of dynamic pricing. However, the occupancy rates start to decrease when prices become too volatile, controlling for the magnitudes of price-level variation. A series of mechanism checks suggest the price volatility across travel dates leads to quality concerns, whereas the price volatility across temporal distances leads to fairness concerns. Our findings imply the algorithmic pricing optimality may not be achieved by ignoring consumers' behavioral reactions.

Thursday, 8:30AM

TA19

Sandringham - Level 2

Pricing: Algorithmic Pricing
Contributed Sessions

4 Comparing Hierarchical Bayesian Modelling and Machine Learning Approaches for Prescriptive Analysis on Multiproduct Pricing Optimization

Luis Aburto[1], Marcel Goic[2], Xavier Zuazagoitía[1], [1]University Adolfo Ibañez, Santiago, Chile; [2]University of Chile, Santiago, Chile. Contact: luis.aburto@uai.cl

A traditional approach to address multiproduct demand prediction is based on Hierarchical Bayesian Modeling (HB). This method improves the estimation of the elasticity matrix by pooling the information across the stores, and also imposing specific prior knowledge on these parameters.
In recent years, new machine learning models have been applied to different marketing settings (churn, product purchase, CRM) obtaining good results in terms of prediction capabilities. This paper compares HB with black-box supervised models like Xgboost and Random Forest, in terms of prediction and explainable capabilities of price elasticity parameters. For machine learning models we use Shapley value to extract the specific contributions of price into the demand model.
We apply our comparison using product category data for a Latin American retail supermarket with 30 stores in 12 SKUs of the Tuna can category. When comparing HB with ML, we get mixed results in terms of out-of-sample prediction, but always a better and more intuitive estimation of elasticity matrix parameters. The HB model was used as input for a sales optimization model recommending price base with improving a 34.13% in the category.

Thursday, 10:30AM

TB01

Trade Room- Lobby Level
ML: Applications II
Contributed Sessions

Session Chair
Ricardo Montoya, Catholic University of Chile, Santiago, Chile.

Thursday, 10:30AM

TB01

Trade Room- Lobby Level
ML: Applications II
Contributed Sessions

1 Unraveling Effective Teamwork Strategies with Graph Neural Networks

Qianyin Xia[1], Yi Zhao[1], Sarang Sunder[2], [1]Georgia State University, Atlanta, GA, [2]Indiana University, Bloomington, IN, Contact: qxia2@gsu.edu

Effective teamwork is crucial in the business field. This study investigates the effective Teamwork strategy using a novel deep learning approach. Given the significant heterogeneity in agents across multiple dimensions, previous literature investigates the appropriate way of teamwork mainly based on separate individuals, which insufficiently takes advantage of the relationship between agent to agent and agent to the working environment. We develop a novel deep learning graph neural networks (GNN) framework to model the interactions between sales agents and provide suggestions for effective teamwork. We fit the GNN model on a dataset of one of the largest insurance companies in the United States. We first encode the characteristics of the agents, previous transaction history and past performance, and the working relationship with other agents to get the node embeddings for each agent through Auto-encoder. Then, based on the connectivity of the nodes, we use the GNN framework to do the node clustering and try to identify the influential nodes from the existing teams. Also, we examine the possibility of connecting multiple agents through one edge by the Hypergraph neural Networks to uncover effective strategies. The result could provide insights into effective teamwork strategies for higher sales performance. Also, the finding investigates whether effective teamwork can substitute job training, which provides a possible alternative for business operations. This study utilizes a state-of-the-art deep learning modeling framework to investigate the effective way of forming teams and provides insights for future research in the field of team formation and performance.

Thursday, 10:30AM

TB01

Trade Room- Lobby Level
ML: Applications II
Contributed Sessions

2 Basket Model with Graph Neural Network

Xuliang Li, University of Sydney, Business School, Sydney, Australia. Contact: xuli3128@uni.sydney.edu.au

The product relationship can be represented as a graph, where nodes are commodities and lines represent relationships. Researchers have developed neural networks that operate on graph data (called graph neural networks, or GNNs) for over a decade. We use Graph Embedding Vector generated from the sequence of customer purchases to analyse the relation between products and use the embedding vector on the traditional conditional logit model to analyse customer purchase behaviour.

Thursday, 10:30AM

TB01

Trade Room- Lobby Level

ML: Applications II

Contributed Sessions

3 Using Algorithmic Scores to Measure the Impacts of Targeted Promotional Messages

Annie L. Shi[1], Dennis J. Zhang[1], Tat Y. Chan[1], Haoyuan Hu[2], Binqiang Zhao[2], [1]Washington University in St. Louis, St. Louis, MO, [2]Alibaba Group, Hangzhou, China. Contact: l.shi@wustl.edu

Nowadays, managers' targeting promotion decisions are often facilitated by machine learning (ML) algorithms. These algorithms often aggregate a large amount of customer demographic and behavioral information into several personalized scores, based on which managers then algorithmically make targeting or pricing decisions. We propose matching on these ML-generated scores used in targeting decisions to measure the effectiveness of targeting promotions. Our strategy can effectively address the issue of selection bias introduced by personalized targeting, and it could overcome the curse of dimensionality in matching when these ML systems use a large amount of consumer information. In order to test our proposed approach, we conducted a large field experiment on targeting promotions with a large retailing platform and analyzed customer behaviors. In our empirical application, customers are divided into two groups: the experimental group, where customers are randomly assigned to the treatment and control for receiving the targeting promotion, and the non-experimental (i.e., observational) group, where the algorithm will decide who receives the promotion. We first demonstrate that receiving the targeting promotions successfully increases store visits and purchases but also increases customers' likelihood of unsubscribing from the promotional message service. We then compare the results from experimental data and those by our matching approach using the non-experimental data. We showed that our proposed matching approach could effectively recover the same effects as the experimental data. By contrast, the estimated effects without matching are seriously over-biased, and traditional matching methods cannot mitigate such biases due to the curse of dimensionality.

Thursday, 10:30AM

TB01

Trade Room- Lobby Level

ML: Applications II

Contributed Sessions

4 The Effect of Pregnancy and Childbirth on Consumption Behavior

Veronica Diaz[1], Ricardo Montoya[2], Oded Netzer[3], [1]Universidad Adolfo Ibañez, Santiago, Chile; [2]Catholic University of Chile, Santiago, Chile; [3]Columbia Business School, New York, NY, Contact: ricardo.montoya@uc.cl

Major life transitions such as relocation, a new job, pregnancy, and the birth of a child can have significant implications on one's lifestyle and consumption patterns. In this research, we study how the consumption behavior of first-time parents is affected, both during pregnancy and after birth. We combine a unique dataset that identifies precisely the date of childbirth with supermarket credit card data. We use detailed supermarket transactions and aggregated purchases made at different external companies using the credit card to investigate the relationship between pregnancy and childbirth, and consumption. To examine the causal effect of pregnancy and childbirth on consumption, we combine a difference-in-differences approach with a causal random forest model that matches each first-time parent with comparable non-parents. Preliminary results show that grocery purchase behavior is significantly affected during pregnancy and after childbirth. In particular, we identified a significant decrease in total spending and purchasing frequency during the first quarter of pregnancy. And an increase in these purchase behaviors from the last quarter until the baby was one year old. We also identified significant changes in spending on diverse categories, such as beauty care and pets-related products that decrease after birth.

Thursday, 10:30AM

TB02

Flagler - Lobby Level
Social Media: Engagement II
Contributed Sessions

Session Chair
Yu Song, 1</sup

Thursday, 10:30AM

TB02

Flagler - Lobby Level
Social Media: Engagement II
Contributed Sessions

1 Music-Motion Synchronicity: A Crossmodal Transformer Modelof Customer Engagement with Social Media Videos

Erya Ouyang[1], Wen Wang[2], Xueming Luo[1], [1]Temple University, Philadelphia, PA, [2]University of Maryland, College Park, MD, Contact: tun64385@temple.edu

The use of short-form videos have been growing rapidly and have been adopted by social media platforms as a main content format.This paper proposes a novel framework, Music-Motion Synchronicity (MM Sync), to predict the video engagement of dance videos from a model-based perspective. Specifically, we apply MultimodalTransformer (MulT) with crossmodal attentions to predict video engagement (i.e. share count and play count). Our proposed frameworkMM Sync captures the fit between two modalities (i.e. music and motion) of dance videos and can be used as an index to evaluate the video engagement. Our model demonstrates the best performance compared to unimodal models and classic machine learning models. Beyond prediction, we add interpretabilities to our model by conducting heterogeneity analyses by influencer types and music genres, and counterfactual analyses, which offer a decision-making tool of how to select music and influencer to enhance video performance.Finally, our findings and methods provide managerial implications for influencers, brands and short-video platforms to improve the virality and engagement of dance videos in this booming entertainment market.

Thursday, 10:30AM

TB02

Flagler - Lobby Level
Social Media: Engagement II
Contributed Sessions

2 How to Hook Customers with Facebook? an Empirical Analysis of Grocery Stores' Social Media Engagement

Tom J. P. Wielheesen[1], Laurens M. Sloot[2], Tammo H A Bijmolt[1], [1]University of Groningen, Groningen, Netherlands; [2]Rijksuniversiteit Groningen, Groningen, Netherlands. Contact: t.j.p.wielheesen@rug.nl

With an adoption rate of 59 percent worldwide and an average usage time of two and a half hours a day, social media has become an integral part of today's society. To inform and convince consumers to become (loyal) customers, local businesses increasingly have an 'online presence'. Particularly, because social media allow them to quickly interact with their local target group. In this research, we examine the impact of social media post characteristics (i.e., post theme, level of vividness, posts featuring employees) on online engagement (i.e., the number of likes, comments, and shares) of 2,780 Facebook posts. In addition, we analyze how these effects are moderated by brand page (i.e., page followers, post frequency) and physical store characteristics (i.e., store size, urbanization level) across 139 local grocery stores. Given the over-dispersed nature of the count outcome variables, we estimated the models with a negative binomial regression. Results reveal that visual content and featuring employees increase social media engagement. In addition, we discover that the level of engagement is determined by the theme and is moderated by brand page and store characteristics. The insights of this study can be used by local grocery retailers to improve online customer engagement, and thus, their social media strategy. Hence, our research may guide local grocery stores in deciding which content characteristics to share and what type of content strategy is most effective based on their locational setting.

Thursday, 10:30AM

TB02

Flagler - Lobby Level
Social Media: Engagement II
Contributed Sessions

3 Does Carrying News Increase Engagement with Non-News Content on Social Media Platforms?

Yu Song, Puneet Manchanda, University of Michigan, Ann Arbor, MI, Contact: yyusong@umich.edu

With the rapid growth of online news aggregators, the debate on whether news aggregators should pay news publishers for redistributing their content has become very salient. However, there is little understanding of the effects of carrying news on news aggregators, especially for their non-news content. Our research fills this gap by examining the impact of news on non-news user engagement and content generation on Facebook. We leverage a natural experiment, Facebook's Australian news shutdown, and adopt difference-in-differences to study the question. We find that both user engagement and content generation of non-news content decreased after the news shutdown on Facebook. We also find that these effects were more pronounced for more influential, socially active, experienced, and verified accounts. These results show the positive spillover effects of news on non-news content. Our results provide timely and relevant implications for regulators and social media platforms.

Thursday, 10:30AM

TB03

Dupont - Lobby Level

Consumer Behavior: Decision Making I

Contributed Sessions

Session Chair

Yegyu Han, IE Business School, Madrid, Spain.

Thursday, 10:30AM

TB03

Dupont - Lobby Level

Consumer Behavior: Decision Making I

Contributed Sessions

1 Social Class Influences on Purchase Intention Following a Product-Harm Crisis: The Mediating Roles of Subjective Social Status and Attribution of Stability

Andy H. Ng, Cardiff University, Cardiff, United Kingdom. Contact: nga4@cardiff.ac.uk

Safety and quality of products are, understandably, of great concerns of consumers. Unfortunately, however, product-harm crises are not at all uncommon across industries (e.g., Toyota recalled vehicles that had the potential for unintended acceleration due to accelerator pedals being trapped in floormats; Samsung recalled mobile phones that had the potential for explosion or ignition). This research investigates the influence of consumer social class and subjective social status on attribution of stability and purchase intention following a product-harm crisis. Four studies were conducted - Study 1A (*n* = 205 Americans), Study 1B (*n* = 202 Indians), Study 2 (*n* = 129 Indians), and Study 3 (*n* = 144 Americans). Results demonstrated that middle- (vs. working-) class individuals (as objectively indicated by their educational attainment) perceive themselves as having a higher social status in the society (Studies 1A and 3), which in turn leads to a stronger tendency to attribute stability to a product-harm crisis (Studies 1A, 1B, 2, and 3), believing to a greater extent that the problem is typical of the brand's products and the brand will likely run into similar problems in the future. Moreover, this stability attribution has downstream consequences for purchase intention - middle- (vs. working-) class individuals are less likely to purchase products from the same brand following a product-harm crisis (Study 3). These results are consistent with current theorizing and empirical findings that middle-class contexts foster solipsism whereas working-class contexts foster contextualism. One implication of this research is that firms need to devote more effort in reactive public relations following a product-harm crisis if they primarily target middle-class, rather than working-class, consumers, and in states or provinces where the proportion of middle-class individuals is relatively high (e.g., Massachusetts in the U.S.), rather than relatively low (e.g., Mississippi in the U.S.).

Thursday, 10:30AM

TB03

Dupont - Lobby Level

Consumer Behavior: Decision Making I

Contributed Sessions

2 Biological Sex or Gender Roles? What Differs Purchase Behavior Between Men and Women

Gil Peleg[1], Enav Friedmann[2], [1]Sy Syms School of Business - Yeshiva University, NYC, NY, [2]Ben Gurion University, Omer, Israel. Contact: gil.peleg@yu.edu

The ongoing debate regarding gender differences in purchase behavior and decision processes was widely explored in the literature. It has been argued that men emphasize functionality while women emphasize hedonism. Thus, it is not clear what creates these differences. In this research, we propose that biological sex reveals part of the phenomena. At the same time, gender roles and feminine or masculine personality attributes may provide more precise differential factors for decision processes. We demonstrate across three product categories how gender roles and feminine or masculine personality attributes are crucial for product evaluation and choosing one over others in a competitive setting. Specifically, investigating decisions regarding sneakers, laptops, and perfume, we show that the role of hedonism in judgment and choice formation is more associated with gender roles than biological sex. For example, consumers who perceive themselves in masculine roles will emphasize hedonism less in their purchase decision regardless of their biological sex. Our findings enable us to expand the debate regarding gender differences beyond biological sex. Moreover, we found that sexual attraction, which is aligned with gender roles more than biological sex, enables us to infer that gay men who perceive themselves as more feminine than straight men will emphasize hedonism more similarly to straight women. Moreover, lesbians, who perceive themselves as more masculine than straight women, will emphasize hedonism less, similar to straight men. This adds to the theoretical nature-nurture debate, as our findings emphasize socialization influences consumers' brand preference formation more than biological sex.

Thursday, 10:30AM

TB03

Dupont - Lobby Level

Consumer Behavior: Decision Making I

Contributed Sessions

3 Gender Inequality and Product Choice

Han Zhong, Zemin(Zachary) Zhong, University of Toronto, Toronto, ON, Canada. Contact: han.zhong@rotman.utoronto.ca

We study how gender inequality is reflected and influences product choices. Using administrative data on car registration in China, we find that females own fewer cars than males, and the gap is positively associated with measures of local gender inequality. Conditional on ownership, consumers in regions with high gender inequality are not only more likely to buy male-preferred cars but also more likely to choose male-preferred colors for the same car model. We use China's one-child policy (OCP) and its spatial-intertemporal variation in the enforcement as a natural experiment and find that stricter enforcement of OCP is associated with higher female bargaining power reflected in both ownership and color preferences of car purchase. We test the potential mediating roles of education and employment on the economic bargaining powers of females and males in car purchase decisions.

Thursday, 10:30AM

TB03

Dupont - Lobby Level

Consumer Behavior: Decision Making I

Contributed Sessions

4 A Smart Agent's Voice: Pitch Effects on Consumer Perceptions and Persuasion

Yegyu Han[1], Dipankar Chakravarti[2], [1]IE Business School, Madrid, Spain; [2]Virginia Tech, Ellicott City, MD, Contact: yegyu.han@ie.edu

Rapid development in emerging technologies and natural language processing have enabled consumers to readily communicate and interact vocally with smart machine agents. Pitch along with tempo (speed), timbre, and volume are salient characteristics of speech in human communication. However, there is little research addressing how the pitch of a smart agent's voice may influence perceptions in human-machine interactions and persuasion in consumption contexts. We suggest that a smart agent's voice pitch can influence personality perceptions as well as the degree to which the machine agent is anthropomorphized. These influences may also drive liking and trustworthiness and affect consumers' purchase decisions. Voice tones with higher average pitch signal emotionality in interpersonal communication. We explore whether variations in the pitch of a smart agent's voice may correspondingly influence consumer evaluations toward the agent, attitudes, and consequential consumer decision-making processes. We show that a higher (vs. lower) pitch in a smart agent's sales pitch not only enhances personality attributions and anthropomorphism, but also agent trust, liking, and compliance with purchase recommendations. We further show that these positive voice pitch effects are particularly salient when the voice is attributed to a smart agent (vs. a human salesperson). In parallel studies, we are examining how voice tempo (speed) and specific product characteristics moderate the pitch effects that we identify on consumer perceptions and persuasion.

Thursday, 10:30AM

TB04

Tuttle - Lobby Level
Advertising: Consumer Response I
Contributed Sessions

Session Chair
Rex Du, University of Texas at Austin, Austin, TX

Thursday, 10:30AM

TB04

Tuttle - Lobby Level
Advertising: Consumer Response I
Contributed Sessions

1 Content Strategies for Streamers to Mitigate Viewers' Ad Avoidance in Live Streams

Yun Seob Choi, QianQian Wu, Jae Young Lee, Yonsei University, Seoul, Korea, Republic of.

With the size of the live stream market increasing rapidly, numerous companies are generating huge profits by utilizing advertising promotions with individual live streamers. Individual streamers can also earn immediate revenue from advertising promotions, but advertising does not always have a positive effect on streamers due to viewers' tendency to avoid ad. Nevertheless, research on efficient advertising strategies for individual streamers is limited. Therefore, this study aims to propose strategies that can reduce ad avoidance of viewers by using the content history of individual streamers. In this study, we used a unique data set obtained from Twitch.TV, one of the world's largest live stream platforms. After quantifying variables that capture various aspects of live stream (i.e., interaction with viewers, content diversity, frequency of live stream, and emotion of content title) with topic modeling, we analyze the effect of content related variables on the average number of viewers in the live stream. To solve the endogeneity problem such that ads are more likely to be conducted on live streams with larger number of viewers, we used the propensity score matching method. Results show that the average number of viewers is smaller when the live stream contains ads than when the live stream does not contain ads, suggesting that viewers tend to show ad avoidance. Furthermore, it is found that live stream viewers' ad avoidance decreases as the less streamers interact with viewers, the higher the diversity of content, the higher the frequency of live streams, and the less negative the content title. Based on these results, we discuss theoretical contributions for researchers and marketing implications for practitioners.

Thursday, 10:30AM

TB04

Tuttle - Lobby Level
Advertising: Consumer Response I
Contributed Sessions

2 Advertising to Businesses: An Experimental Investigation

Michael Thomas[1], Marcel Goic[2], Kirthi Kalyanam[3], [1]National University of Singapore, Singapore, Singapore; [2]Universidad de Chile, Santiago, Chile; [3]Santa Clara University, Santa Clara, CA, Contact: mthomas8@chicagobooth.edu

We investigate the impact of advertising electronics components sold to businesses with multi-year field experiments. Customers of the focal component spend many months designing hundreds of components into their end product before purchase. While this long, high-consideration process could reduce advertising effects relative to consumer advertising, we instead estimate a large, long-lasting lift in purchases. Advertising exerts no detectable influence on sales the month it is delivered but lifts sales in later months with an average time to first purchase of four months; 10% of customers wait seven months or longer to make their first purchase in response to an ad. Additionally, we find that advertising generates more purchases of new parts by existing business customers than it generates new business customers. Together, we interpret these results as evidence that business customers face significant search friction, advertising can reduce this friction, and business customers can retain the information delivered by advertising over long periods of time.

Thursday, 10:30AM

TB04

Tuttle - Lobby Level
Advertising: Consumer Response I
Contributed Sessions

3 Leveraging Granular Single-Source Data for Causal Identification of Tv Ad Effects

Tsung-Yiou Hsieh[1], Rex Du[2], [1]University of Houston, Houston, TX, [2]University of Texas at Austin, Austin, TX

Quantifying the causal effects of TV ad impressions using observational data presents a formidable challenge, especially with ad insertions being increasingly microtargeted and in contexts where viewer responses are far removed temporally from ad exposures. In this paper, we develop a novel identification strategy that leverages household level second-by-second linear TV viewing data merged with household level first-party transaction data. As such granular single-source data becomes increasingly available to TV advertisers, thanks to the wide adoption of smart TVs and set-top boxes, and advances in TV measurement technology, we argue our proposed modeling framework for causal identification would allow TV advertisers to better quantify the impact of their ads and improve the efficacy of TV as an advertising medium. The core of our identification strategy lies in the fact that most linear TV advertisers target their ad buys at the show level (and very rarely at specific parts of a show). For each household on any given day, we estimate how many ads from the focal brand each household is expected to see, conditional on the shows targeted by the focal brand and the household's viewing patterns of those shows. We show that the difference between the actual and the expected ad exposures provides the source of exogenous variation that enables causal identification. In our empirical illustration, using data from brands of different categories, we demonstrate the generalizability and scalability of our proposed approach, and compare it with common alternative approaches for causal estimation with observational data.

Thursday, 10:30AM

TB05

Gusman - Lobby Level

Livestream Shopping

Special Session

Session Chair

Xiao Liu, New York University, New York, NY

Thursday, 10:30AM

TB05

Gusman - Lobby Level

Livestream Shopping

Special Session

1 Success and Survival in Livestream Shopping

Zekun Liu[1], Weiqing Zhang[1], Xiao Liu[1], Eitan Muller[1], Feiyu Xiong[2], [1]New York University, New York, NY, [2]Alibaba Group, Hangzhou, China. Contact: zl3126@stern.nyu.edu

The livestream shopping industry, in which consumers can purchase products directly from live video sessions, is expected to exceed $60 billion in China in 2021 and $25 billion in the US in 2023. Despite the popularity of livestream shopping, many sellers fail within just a few weeks. We investigate the lead indicators of the success and survival of livestream shopping sellers. We ask three questions: 1. Livestream viewers can make purchases directly within the session (the "direct selling effect") or can use the session to gain information that may inform purchases later on (the "cross-channel spillover effect"). Which of the two effects is more important for a seller's success? 2. Livestream shopping encompasses three industries: e-commerce, social networks, and entertainment. Which industry-specific key performance indicators (KPIs) predict success? 3. Some sellers use livestream shopping for new product introduction while others use it for mature product inventory liquidation. Which type of seller is more likely to survive? We use a unique dataset from Taobao Live to show that: 1. Sellers who rely more heavily on the direct selling effect (vs. the cross-channel spillover effect) are less likely to succeed. 2. The e-commerce KPI positively predicts success, while the entertainment KPI negatively predicts success. For the social network KPIs, reach positively predicts success, but engagement rate negatively predicts success, reinforcing the advertising effect of livestream shopping. 3. Mature product sellers are more likely to succeed than new product sellers.

Thursday, 10:30AM

TB05

Gusman - Lobby Level

Livestream Shopping

Special Session

2 Doubling Revenues by Adopting Livestream Shopping: A Synthetic Did Approach

Weiqing Zhang[1], Zekun Liu[1], Xiao Liu[1], Eitan Muller[1], Feiyu Xiong[2], [1]New York University, New York, NY, [2]Alibaba Group, Hangzhou, China. Contact: wz1571@stern.nyu.edu

While livestream shopping has attracted enormous attention in the e-commerce world, whether and how it can help online sellers remains questionable. We study the effect of adopting the livestream shopping channel on seller performance. We analyze 2,851 online sellers who adopted the livestream shopping channel from September 2019 to June 2020. To tackle a series of identification challenges, we use three different estimators, two-way fixed effect DiD (TWFE), staggered DiD, and synthetic DiD (SynDiD). We find that adopting the livestream shopping channel increases sellers' total revenue by 107%. Moreover, 47% of the total revenue increase is attributed to the online store channel, suggesting a positive cross-channel spillover effect from the livestream shopping channel to the online store channel. We further examine the mechanisms and find supporting evidence that livestream shopping can not only reduce consumer uncertainty about products via information provision, but also increase consumers' awareness of sellers by offering sellers broader exposure to the public. In addition, although the average price for the same product is 7.6% lower in the livestream shopping channel, which may partially contribute to sellers' increased overall revenue, we find that the salience of price promotions in the livestream shopping channel cannot explain the cross-channel spillover effect.

Thursday, 10:30AM

TB05

Gusman - Lobby Level
Livestream Shopping
Special Session

3 Promoting or Attenuating? A Study on the Role of Virtual Live Streamers in Livestream Shopping

Si Xie, University of Texas at Dallas, Richardson, TX, Contact: sxx170008@utdallas.edu

Livestream shopping has gained huge popularity worldwide in recent years. Most of the livestreamers (aka anchors or presenters) are human beings. With the increasing number of viewers and the demand of creative ways to attract their attention, certain livestream channels have decided to introduce virtual livestreamers which are characters developed with the help of artificial intelligence (AI) technology that bear close resemblance to humans such as three-dimensional body and natural language processing. They can work independently or with their human counterparts to communicate with viewers and present products in more vivid ways. However, little research has been done to understand the effects of the introduction of virtual livestreamers and their interaction with human livestreamers in livestream shopping. To examine the above context, we use session level sales data of more than 500 livestream channels on a well-known Chinese platform. Using high dimensional fixed effect model, we find that the adoption of virtual livestreamers has a positive impact on session sales. This positive impact is more salient for relatively shorter session duration and certain product categories with more hedonic characteristics. We also propose that mechanism of such an increase can be the increase of engagement generated by virtual livestreamers, such as higher number of comments and likes.

Thursday, 10:30AM

TB06

Balmoral Level 2
Analytical modeling in digital marketing and platforms
Special Session

Session Co-Chair
Jason Choi, University of Maryland, Bethesda, MD

Thursday, 10:30AM

TB06

Balmoral Level 2
Analytical modeling in digital marketing and platforms
Special Session

Session Chair
Fei Long, University of North Carolina at Chapel Hill, Chapel Hill, NC

Thursday, 10:30AM

TB06

Marti - Lobby Level
Marketing Strategy: Firm Performance II
Contributed Sessions

Session Chair
Mitsukuni Nishida, Johns Hopkins Carey Business School, Baltimore, MD

Thursday, 10:30AM

TB06

Balmoral Level 2
Analytical modeling in digital marketing and platforms
Special Session

1 **Search Neutrality and the Competition Between First-Party and Third-Party Sellers**
Tianxin Zou[1], Bo Zhou[2], [1]University of Florida, Gainesville, FL, [2]University of Maryland, College Park, FL, Contact: tianxin.zou@warrington.ufl.edu
Many dominant retail platforms self-preferentially prioritize their first-party products, despite their potential lower relevance, over competing third-party products in consumers' search rankings. Antitrust agencies propose search-neutrality regulations that forbid such self-preference practices to protect consumers and third-party sellers. This paper shows that search neutrality, despite its good intention, may unintendedly harm consumers and third-party sellers because of the platform's and third-party sellers' strategic decisions. In the short term, search neutrality can weaken the price competition between the platform and third-party sellers, which will hurt consumers if most of them ex ante prefer the third-party product. In the long term, search neutrality can incentivize the platform to preempt third-party sellers' entry if their entry cost is intermediate, further harming consumers and third-party sellers. Both unintended harms stem from two unique features of online retailing platforms: platforms personalize consumers' search rankings, and consumers observe product prices before searching a product. We also find that search neutrality can increase the platform's profit due to the alleviated competition.

Thursday, 10:30AM

TB06

Balmoral Level 2
Analytical modeling in digital marketing and platforms
Special Session

2 **Better Matching, Higher Revenue? the Price Competition Effect of Ai for Brand-Influencer Matching**
Z. Jessie Liu[1], Yi Liu[2], [1]Johns Hopkins University, Baltimore, MD, [2]University of Wisconsin - Madison, Madison, WI, Contact: yliu2396@wisc.edu
We consider a social media platform that offers a matching service to match marketers with influencers through Artificial Intelligence (AI) technology. We find that, even if the implementation cost is negligible, it is not always in a platform's best interest to perfect the accuracy of such AI technology. The results arise from three effects of AI improvement on platform revenue: (1) the matching enhancement effect, (2) the market expansion effect, and (3) the price competition effect. While the first two effects lead to increased revenue for the platform, the third effect has a negative impact, leading to an ambiguous result overall. In particular, we find that when the social media platform is of intermediate popularity, i.e., when the follower density of influencers is intermediate within a certain range, the platform can be worse off as the accuracy of AI improves. We also suggest that a social media platform need to optimally adjust the commission rate as AI improves to mitigate, although not eliminate in some circumstances, the negative impact of AI improvement. Interestingly, it sometimes requires the platform to charge even less from the influencers when AI becomes more accurate. Managerial implications are also discussed.

Thursday, 10:30AM

TB06

Balmoral Level 2
Analytical modeling in digital marketing and platforms
Special Session

3 **Influence or Advertise: The Role of Social Learning in Influencer Marketing**
Ron Berman[1], Aniko Oery[2], Xudong Zheng[3], [1]The Wharton School, Philadelphia, PA, [2]Yale School of Management, New Haven, CT, [3]Johns Hopkins University, Baltimore, MD
We compare influencer marketing to targeted advertising from information aggregation and product awareness perspectives. Influencer marketing leverages network effects by allowing consumers to socially learn from each other about their experienced content utility, but consumers may not know whether to attribute promotional post popularity

to high content or high product quality. If the quality of a product is uncertain (e.g., it belongs to an unknown brand), then a mega influencer with consistent content quality fosters more information aggregation than a targeted ad and thereby yields higher profits. When we compare influencer marketing to untargeted ad campaigns or if the product has low quality uncertainty (e.g., belongs to an established brand), then many micro influencers with inconsistent content quality create more consumer awareness and yield higher profits. For products with low quality uncertainty, the firm wants to avoid information aggregation as it disperses posterior beliefs of consumers and leads to fewer purchases at the optimal price. Our model can also explain why influencer campaigns either "go viral" or "go bust," and how for niche products, micro-influencers with consistent content quality can be a valuable marketing tool.

Thursday, 10:30AM

TB06

Balmoral Level 2
Analytical modeling in digital marketing and platforms
Special Session

4 "retail Media" and Distribution Strategies

Jason Choi[1], Kinshuk Jerath[2], Amin Sayedi[3], [1]University of Maryland, College Park, MD, [2]Columbia University, New York, NY, [3]University of Washington, Seattle, Seattle, WA, Contact: wjchoi@umd.edu

"Retail media" refers to ads served to consumers on retailers' websites, and is projected to grow to a US $100 billion market by 2026. This paper investigates the impact of retail media on manufacturers' distribution strategies. A key model feature is that retailers possess high-quality first-party data about their customers, which can be leveraged for advertising to consumers by manufacturers who sell through the retailers. However, selling through retailers can be costly for manufacturers because (i) manufacturers pay commission on product sales made through retailers, and (ii) if retailers allow advertising on their platforms, bidding competition further erodes manufacturers' profits. Our main finding is that while retail media allows retailers to extract more surplus from manufacturers through payments for ads, it could also drive manufacturers away from selling through retailers and towards direct selling. As a result, retailers of intermediate market strength forego retail media even if it is costless to implement.

Thursday, 10:30AM

TB06

Balmoral Level 2
Analytical modeling in digital marketing and platforms
Special Session

5 Retail Media at Online Platforms

Fei Long, University of North Carolina at Chapel Hill, Chapel Hill, NC

The emergence of retail media has led to a growing trend of online platforms---such as Amazon, Walmart and Instacart---allowing brands to advertise their products to consumers in addition to selling them. We examine the effects of sponsored advertising on online platforms under two different selling structures: the marketplace format, where the platform acts as an agency, and the reselling format, where the platform acts as a reseller.

Thursday, 10:30AM

TB06

Marti - Lobby Level
Marketing Strategy: Firm Performance II
Contributed Sessions

1 Identifying CEO's Marketing Mental Models Using Unsupervised Topic Modeling

Divya Anand[1], Rajdeep Grewal[2], Min Ding[3], Tongyao Shen[4], [1]University of Kentucky, Lexington, KY, [2]University of North Carolina, Chapel Hill, NC, [3]Pennsylvania State University, University Park, PA, [4]Penn State University, State College, PA, Contact: tqs5651@psu.edu

Given the ambiguity, complexity, and dynamism of information within the business ecosystem, CEOs often rely on their mental models as a cognitive filtering mechanism to process and interpret information. A large body of literature exists on CEO mindsets or mental models, however, none of these underscores the cognitive mechanism behind one of their most pressing and perennial concerns—adapting to new market conditions and driving new growth opportunities, i.e., *CEO's Marketing Mental Models*. Market adaptations require systemic decision-making for the firm on various fronts, such as innovation, R&D, product diversification, branding, etc. However, each of these actions can be implemented differently for the same problem. For example, to curb supply chain issues during COVID, some firms relied on fostering a stronger relationship with their suppliers (e.g., Unilever), while others focused on acquisitions for forward and backward integrations (e.g., American Eagle). By examining CEO marketing mental models, we aim to offer insights into the various ways through which different CEOs implement their market adaptation strategies and how they evolve over time both within and across CEOs. To conduct this analysis, we collected 20,000+ earnings call transcripts of S&P 500 companies from 2010 to 2022. We then extracted marketing-related sentences from CEO's management discussion section using a dictionary with keywords from the famous Kotler and Armstrong (2018) marketing textbook. We utilized hierarchical topic modeling methods to extract several common marketing topics (in a tree structure) discussed by the CEOs. We back the results from topic modeling using theories across marketing and management literature on CEO mental models. We identified several parent topics (such as customer orientation, cost reduction) which reflect CEOs' global mental models. Each parent topic comprises a set of child topics (such as technology enhancement, product innovation, and expansion) representing more specific strategies used by CEOs in marketing adaptation.

Thursday, 10:30AM

TB06

Marti - Lobby Level
Marketing Strategy: Firm Performance II
Contributed Sessions

2 How Far is "Far Away"? - Effects of Cross-Country Distance on Entry Timing and Performance

Marzieh Yaghini[1], Towhidul Islam[2], Yuanfang Lin[1], [1]Lang School of Business and Economics, Guelph, ON, Canada; [2]University of Guelph, Guelph, ON, Canada. Contact: myaghini@uoguelph.ca

The "distance" between the home and destination countries of a multinational firm could be defined using different measurements including geograpahic location, economic condition, cultural difference, etc. Conventional wisdom leads managers to assume that they should delay entries into further distant markets and that firms would perform better after entering less distant markets. Researchers have been questioning such oversimplifying view as neglecting the complexity of the distance effect would result in multinational firms missing valuable opportunities for international market expansion. The objective of this research is to empirically investigate the relationship between country distances and two major outcome variables in international business, namely, entry timing and performance. Using a dataset consisting of 328 market entries by 36 international mobile telecom companies involving 112 countries, we aim to answer two primary research questions: How does the economic (vs geographic) distance between home and destination countries of a multinational firm affect its timing of market entry? How does the distance (in alternative measurements) influence a multinational firm's performance after introducing a new product to a specific country? Our empirical analyses suggest an inverted U-shape relationship between economic distance and entry timing, plus aU-shape relationship between economic distance and post-entry performance. This study contributes to the International Business study by identifying a curvilinear effect of distance on entry timing and firm performance. Our research findings provide important insights that could assist managers in making timely entry decisions and achieving profitable growth post-entry.

Thursday, 10:30AM

TB06

Marti - Lobby Level
Marketing Strategy: Firm Performance II
Contributed Sessions

3 Ability vs. Stability in Partner Selection? Performance Maximization Versus Team Stability Under Varying Reputational and Adjustment Costs

Debjit Gupta[1], Dipankar Chakravarti[2], Atanu R. Sinha[3], [1]Binghamton University, Vestal, NY, [2]Virginia Tech, Ellicott City, MD, [3]Adobe Systems Inc, Bangalore, India.

Prior research (e.g., Hill et al. 2000) has examined how individuals (e.g., a salesperson) select work group partners to maximize team performance, keeping in mind the need for group stability. Conventional wisdom suggests than an individual will select a high ability partner to maximize team performance, there is a risk that high ability partners may abandon the team for more attractive options. Moreover, lay theory suggests that high ability partners may be high maintenance and difficult to work with. Hence, performance gains with such partners may be neutralized if the partnership is potentially unstable. Breakups may impose reputational costs as well as adjustment costs of finding and developing a working relationship with a new partner.
Our research addresses this tradeoff in partner selection

(between a high ability and a median ability potential partner) from the perspective of focal individuals with high vs. median ability. We also manipulate reputation costs (high vs. moderate) as well as adjustment costs (high vs. moderate) that may accrue if the team breaks up. We test our conjectures via a three-factor experiment with a 2 (focal participant ability: high vs. median) x 2 (reputational cost: high vs. moderate) * 2 (adjustment cost: high vs. moderate) design, using 400 subjects from the Prolific web panel. Our dependent measure is the rated likelihood of the focal participant choosing a partner with high (vs. median) capability.

We find that whereas high ability focal participants rate a high ability target partner as more attractive, the rating is attenuated when reputational and adjustment costs are high (vs. low). Interestingly, median ability focal participants rate high ability partners as less attractive and prefer median ability partners. However, this preference is attenuated (higher ability target partners receive higher ratings) when reputation and adjustment costs are high (vs. low). Thus, the median ability participant prefers a partner of compatible ability, but may risk choosing a high ability partner if the cost structure facilitates team stability.

Thursday, 10:30AM

TB06

Marti - Lobby Level

Marketing Strategy: Firm Performance II

Contributed Sessions

4 The Impact of Accepting Mobile Money Payments on Firm Sales: Differences Across Sectors in the Kenyan Case

Otto Afiuc, Mercedes Esteban-Bravo, Jose M. Vidal-Sanz, Universidad Carlos III de Madrid, Getafe, Madrid, Spain.

Financial exclusion of disadvantaged consumers in developing countries has a potential curbing effect on firms' sales. Fintech has facilitated their inclusion, but the overall effect on firms' sales is less known. This article analyzes the impact over firms' sales of adopting mobile money for transactions with their customers, distinguishing between their national sales, indirect exports, and direct exports. For the national sales, we examine the impact on firms' sales across sectors. We focus on the case of Kenyan firms adopting the mobile money (M-PESA) in payment transactions, using a firm panel. To delve into the income and substitution effects across different products, we use a households' panel, analyzing consumer behavioral changes in consumption for different types of expenses (annual, monthly, and weekly) and different product categories. The shift in market sales is generally unaccounted for in the literature about financial inclusion; we discuss how it can further contribute to the development of the economy.

Thursday, 10:30AM

TB06

Marti - Lobby Level

Marketing Strategy: Firm Performance II

Contributed Sessions

5 Who Influences Order of Entry and Performance of Firms? Firms that Started Them

Mitsukuni Nishida, Johns Hopkins Carey Business School, Baltimore, MD

Who influences the entry order and performance of firms? Much of the existing literature has ignored the influence of the firms that established them. This paper documents how firms' entry order and performance are influenced by the entry order of the firms that start them. I use a case study from the Japanese supermarket and convenience-store industries, where the six major convenience-store chains in Japan were established by six major supermarket chains in the 1970s and 1980s, around a quarter of a century after these supermarket chains were founded. Utilizing new data spanning multiple geographic markets for more than 50 years, I find that firms influence the firms they started in three ways. First, the entry order of a given firm (i.e., a convenience-store chain) is positively correlated with the entry order of the firm that established the convenience-store chain (i.e., supermarket chain). Second, by utilizing mediation analysis, I find that the sales performance of a convenience-store chain is not only affected by its own entry order, but also the entry order of the supermarket chain that started it. This relationship weakens after the supermarket chain leaves the shareholders of the convenience-store chain it started. Finally, an analysis based on cross-sectional location information of convenience-store outlets reveals that the earlier a supermarket chain enters the market, the more attractive the outlet locations become for the convenience-store chain that the supermarket chain started, holding the entry order of the convenience-store chain constant. This finding provides empirical support for the supply-side mechanisms underlying the observed entry-order effects of supermarkets, such as prime location.

Thursday, 10:30AM

TB07

Merrick 1 - Lobby Level
Influencer Marketing Track: Special Session 2
Special Session

Session Co-Chair
Maximilian Beichert, Mannheim, Germany.

Thursday, 10:30AM

TB07

Merrick 1 - Lobby Level
Influencer Marketing Track: Special Session 2
Special Session

Session Chair
Andreas Lanz, HEC Paris, Paris, France.

Thursday, 10:30AM

TB07

Merrick 1 - Lobby Level
Influencer Marketing Track: Special Session 2
Special Session

1 Crowding-Out in Content Monetization Under Pay-What-You-Want Pricing: Evidence from Live Streaming

Dai Yao[1], Xingyu Chen[2], Shijie Lu[3], [1]The Hong Kong Polytechnic University, Hong Kong, China; [2]Shenzhen University, Shenzhen, China; [3]University of Notre Dame, Notre Dame, IN, Contact: slyu@nd.edu

Live streaming has emerged as an innovative avenue for content providers (broadcasters) to monetize their content in real time under pay-what-you-want (PWYW) pricing. In a typical live stream, consumers (viewers) watch the content, and may decide to send to the broadcaster tips in the form of virtual gifts purchased with real money, which could be cashed out by broadcasters later. As the payment activities are publicly observable (together with the identities of the senders), and the content is improvised rather than preconfigured in live streams, understanding to what extent and how they influence broadcasters' content production and activities by peer viewers becomes relevant and meaningful. This paper documents findings from a field experiment in a popular live streaming platform in China, which examines the social impact of viewers' tipping activity, a crucial one that determines the profitability of live streams. In the study, we deploy synthetic viewers to both treated and control streams, and only in treated streams let these viewers send random authentic tips at random times, which exogenously alters the tips observed by all participants. We find broadcasters plausibly provide better content in response to tips from viewers. Despite this positive externality, when seeing more tips from peers, viewers tend to tip much less; they also chat less, and show slightly more tendency to leave the current stream. In comparison, their likes, which are displayed without their identities, experience neither dip nor boost. In addition, the crowding-out effects manifest mainly on viewers who have tipped more prior to the study, hence likely having accrued more social status than their counterparts who have tipped less. However, neither viewers' tenure nor their past watching experience moderates these effects. These results collectively suggest social status pursuit as a plausible driver of the observed crowding-out effects. Our study sheds light on the design of marketplaces that facilitate content monetization in real time under PWYW pricing.

Thursday, 10:30AM

TB07

Merrick 1 - Lobby Level
Influencer Marketing Track: Special Session 2
Special Session

2 Growing Sales with Influencers in Livestream Commerce

Xian Gu[1], Xiaoxi Zhang[2], Pallassana K. Kannan[3], [1]Indiana University, Bloomington, Bloominton, IN, [2]Stony Brook University, Coram, NY, [3]University of Maryland-College Park, College Park, MD, Contact: xiangu@iu.edu

A new trend in influencer marketing is livestream commerce, which combines influencers' live video streaming with e-commerce. Little is known, though, about how firms should develop their influencer strategies to maximize product sales in livestreams. Given a specific budget, marketers may choose to employ a single, "big" influencer with a large number of followers to reach a large audience, target an audience of similar size using several small influencers, or use a combination of both big and small influencers. Using data from 1.3 million livestreams on TikTok, we empirically

examine the effectiveness of big and small influencers in generating product sales. We find that big influencers are able to reach a much larger audience, whereas small influencers are more effective at increasing the conversion rates of the audience. However, a big influencer can generate significantly more product sales than a small influencer as the big influencer's higher audience reach more than compensates for her lower conversion rate. Moreover, we find a negative interaction effect when big and small influencers are employed together. We also highlight several important campaign characteristics that moderate the sales effectiveness of big and small influencers in distinct ways. Finally, we conduct a scenario analysis based on influencer cost data to explore the most profitable influencer strategy in various cost scenarios. Our research is one of the first to investigate the sales effectiveness of various influencer marketing strategies using a rich observational setting.

Thursday, 10:30AM

TB07

Merrick 1 - Lobby Level

Influencer Marketing Track: Special Session 2

Special Session

3 The Bright Side of Emotional Extremity: Evidence from Tipping on a Live Streaming Platform

Justin T. Huang, University of Michigan Ross School of Business, Ann Arbor, MI

Live streaming has enabled viewers to interact with broadcasters and peer viewers, as well as tip the broadcaster based on their emotional state. While most tips are small, a minority of viewers tip extremely large. To uncover such unique tipping patterns, we draw on the emotion literature and competitive arousal theory to examine how viewers' emotional extremity affects tipping behavior and how broadcaster's emotional response moderates the baseline effect. This study contributes to the emerging live streaming literature by revealing the differential effects of emotional extremity on tipping amount and frequency and provides practical implications for broadcasters and platforms to steer tipping behavior.

Thursday, 10:30AM

TB08

Merrick 2 - Lobby Level

Digitization 2: Advertising and Search I

Special Session

Session Co-Chair

Ayelet Israeli, Harvard Business School, Boston, MA

Thursday, 10:30AM

TB08

Merrick 2 - Lobby Level

Digitization 2: Advertising and Search I

Special Session

Session Co-Chair

Pinar Yildirim, University of Pennsylvania, Philadelphia, PA

Thursday, 10:30AM

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Merrick 2 - Lobby Level

Digitization 2: Advertising and Search I

Special Session

Session Chair

Giorgos Zervas, Boston University School of Management, Brookline, MA

Thursday, 10:30AM

TB08

Merrick 2 - Lobby Level

Digitization 2: Advertising and Search I

Special Session

1 Online Search and Product Rankings: A Double Logit Approach

Giovanni Compiani[1], Greg Lewis[2], Sida Peng[2], Peichun Wang[3], [1]University of Chicago, Chicago, IL, [2]Microsoft, Cambridge, MA, [3]Unity, Chicago, IL

We develop a flexible yet tractable model of consumer search and choice, and apply it to the problem of product rankings optimization by online retail platforms. In the model, products are characterized by a search index, which governs

what consumers search; and a utility index, which governs which of the searched options is purchased. We show that this framework generalizes commonly used search models. We then consider how platforms should assign products to search ranks. To optimize consumer surplus, platforms should facilitate product discovery by promoting "diamonds in the rough," products whose utility index exceeds their search index. By contrast, to maximize static revenues, the platform should favor high-margin products, creating a tension between the two objectives. We develop computationally tractable algorithms for estimating consumer preferences and optimizing rankings, and we provide approximate optimality guarantees in the latter case.When we apply our approach to data from Expedia, our suggested ranking achieves both higher consumer surplus and higher revenues than is achieved by the Expedia ranking, and also dominates ranking the products in order of utility.

Thursday, 10:30AM

TB08

Merrick 2 - Lobby Level

Digitization 2: Advertising and Search I

Special Session

2 Platform Search Design and Market Power

H. Tai Lam, UCLA Anderson, Los Angeles, CA

On Amazon.com, both Amazon and small businesses compete in offering products. However, Amazon chooses what products consumers see when they search. Amazon's products may have a comparatively better position, but the effects on consumers and small businesses are unclear. Policymakers have expressed antitrust concerns about this, suspecting "self-preferencing" and "gatekeeper" market power. To study this, I develop a model where heterogeneous consumers search for differentiated products arranged on an acyclic graph (i.e., tree). Firms price in response to consumer search and how their products are arranged—highlighting how search design determines market structure. The model endogenizes consideration set formation and recovers the correlated distribution of consumer preferences and search costs. Estimated on Amazon data, I show product arrangement (e.g., search results and BuyBox) is important for correct price elasticity estimates. I provide three counterfactual results on market power and antitrust policies. (i) To isolate the effect of Amazon's position advantage, I remove it through a "neutral" product arrangement. Profits shift from Amazon to small businesses, confirming Amazon's sizable market power. However, consumers reduce their search intensity in response to reduced option value and welfare decreases. Amazon's incentives and consumers' preferences are aligned, weakening the claim of self-preferencing. (ii) A vertical operations ban reduces consumer welfare; prices increase even though product variety is unaffected. (iii) I propose an alternate policy, splitting the platform into an Amazon side and a small-business side. Giving consumers the ability to search for and "support small businesses" alleviates market power imbalance without harming consumers.

Thursday, 10:30AM

TB08

Merrick 2 - Lobby Level

Digitization 2: Advertising and Search I

Special Session

3 Where Does Advertising Content Lead You? We Created a Bookstore to Find Out

Ilya Morozov[1], Anna Tuchman[2], [1]Northwestern University, Kellogg, Evanston, IL, [2]Northwestern University - Kellogg, Evanston, IL

We study how advertisements with varied content influence consumers' decisions. To this end, we create a simulated online bookstore that imitates a real online shopping experience. Consumers can browse the product list, use search tools such as queries and filters, explore books by visiting product pages, and place orders just like they normally would when shopping online. We then conduct a pre-registered and incentive-compatible experiment, in which we randomly expose consumers in our store to display ads, randomizing both advertising exposures and content. Our experimental results suggest that advertising content plays a major role in shaping advertising effects. When ads do not reveal product attributes, they encourage consumers to become informed about the advertised book by making its product page more easily accessible. Revealing the book's attributes generates additional effects on search and choice. Advertising a low price unambiguously increases demand for the advertised book. By contrast, advertising the book's genre induces some consumers to search and buy the book while making others discard this option without search. Our results suggest that researchers need to explicitly account for advertising content when estimating the effects of advertising on demand or assessing the impact of advertising regulations.

Thursday, 10:30AM

TB08

Merrick 2 - Lobby Level
Digitization 2: Advertising and Search I
Special Session

4 How Improved Query Interpretation Algorithms Impact Sponsored Search Auctions: Evidence from Google

Poet Larsen, Davide Proserpio, University of Southern California, Los Angeles, CA

We empirically study how improvements to the quality of query interpretation algorithms used by search engines impact bid costs and the number of auction bidders in sponsored search markets. We analyze changes to the average cost-per-click (CPC) and number of bidders after the October 2019 roll out of Google's BERT. Our results suggest that, on average, better query interpretation algorithms help search engines expand markets, i.e., increase the number of bidders and CPC per auction. However, we find significant heterogeneity in market changes when we break down queries by keyword length, an important moderator that correlates with both search specificity and programmatic interpretation difficulty. More specifically, we find that short queries see the number of bidders and CPC increase, while longer queries see the number of bidders increase and CPC decrease. Our results suggest that improvements to query interpretation algorithms help search engines both expand auction markets for previously understood queries (short queries) and improve matching and advertising quality for previously poorly understood queries (long queries). These results inform marketing theory on broad match auction environments and help advertisers understand how changes to query interpretation algorithms impact their search advertising campaigns.

Thursday, 10:30AM

TB09

Grove - Lobby Level
AI: Applications II
Contributed Sessions

Session Chair

Ming-Hui Huang, National Taiwan University, Taipei, Taiwan.

Thursday, 10:30AM

TB09

Grove - Lobby Level
AI: Applications II
Contributed Sessions

1 Artificial Intelligence Anchors in Broadcast Media

Lin Kim[1], Inyoung Chae[1], Michelle Andrews[2], [1]Sungkyunkwan University, Seoul, Korea, Republic of; [2]Emory University, Atlanta, GA, Contact: lvk925@g.skku.edu

Artificial intelligence (AI) news anchors have recently begun delivering the news at several news channels around the world. Built using deep learning technology, high-fidelity voice integration techniques, and intensive algorithmic learning, AI-powered anchors are modeled after and nearly indistinguishable from human broadcasters. While their ability to "work the desk" around the clock appeals to 24/7 news channels, it remains unknown whether virtual broadcasters complement or substitute their human counterparts. Using news program data posted to YouTube from 2018 to 2022, we examine how the adoption of an AI news anchor at a Korean television broadcasting network impacts consumer engagement. Leveraging a causal inference approach, we focus on two questions: (1) does the adoption of an AI news anchor increase news consumption, as measured by video views and (2) does the AI news anchor complement or substitute its human counterpart, as measured by the change in viewership for the human counterpart's videos. Our findings have implications for the use of automation and augmented reality in broadcast media, video advertising, and the television and movie industry, among other media sectors.

Thursday, 10:30AM

TB09

Grove - Lobby Level
AI: Applications II
Contributed Sessions

2 Interacting with a Physician's Assistant: Do Patients Respond Differently to Humans Versus Avatars?

Hari Ravella, Dipankar Chakravarti, Virginia Tech,

Blacksburg, VA, Contact: ravella@vt.edu

Given contemporary patient loads, it is becoming harder to assure timely availability of physicians. Hence, patients are often provided with an option to visit with a physician's assistant for more timely attention. There is a trade-off involved as the patient may perceived themselves as downgraded when having to interact with a physician's assistant. An alternative is to use a humanoid service robot (an HSR) positioned as the physician's assistant. In this research we address patients' reactions to interacting with a human (vs. an avatar) positioned as the physician's assistant. Our prior research (Ravella and Chakravarti 2022) shows that patients may even more be receptive to avatar interactions as long as the avatar is not introduced as the physician's assistant. However, introducing the avatar as an assistant lowers the avatar's evaluation and weakens the effects of an empathetic (vs. impassive) communication style. In the present research we ask if the effects are likely to be similar when both a human and an avatar are introduced as the physician's assistant. We use a 2 (physician assistant: human/avatar) x 2 (Communication Style: impassive vs. empathetic) between-participants design and include a preamble by the human physician stating that the diagnosis and the related treatment information would be provided on the next visit by a physician's assistant (either human or avatar). An empathetic (vs impassive) communication style elicited greater liking (Means Human: 4.60; Avatar: 4.13 4 p=0.03) but had no effect on persuasion or trust. Indeed, the human scored *higher* than the avatar on persuasion, trust, and liking (Means Human: 5.69; 5.56, and 5.43; Similar: 4.09, 4.19, and 3.29; respectively all p's<.0001). No two-way interactions were significant (all ps>.10). These results suggest that regardless of whether the interaction is with a human or an avatar, the patient feels downgraded when interacting with a physician's assistant. As such, even though patients like the human physician assistant more, there are no effects of communication style on either persuasion or trust.

Thursday, 10:30AM

TB09

Grove - Lobby Level

AI: Applications II

Contributed Sessions

3 Feeling Advantage from Artificial Intelligence(S)

Ming-Hui Huang[1], Roland T. Rust[2], Saurabh Mishra[3], [1]National Taiwan University, Taipei, Taiwan; [2]University of Maryland, College Park, MD, [3]Taiyo.AI, Fremont, CA

Artificial intelligence (AI), designed to mimic human intelligences, can have multiple intelligences, such as the capabilities to perform doing, thinking, and feeling jobs and tasks, as humans do. The historical evolution shows that AI is evolving from *mechanical intelligence* for routine task automation, to *thinking intelligence* for analytical decisions, to *feeling intelligence* for human interactions. Currently, thinking AI, ironically, is increasing the importance of feeling intelligence in the economy creating the opportunity for a "feeling advantage" for both economic sectors and workers. We empirically examine two mechanisms for the multiple AI intelligences to generate the feeling advantage: a congruence mechanism for economic productivity, and a complementarity mechanism for labor productivity. AI, as a form of capital, benefits an economy more if the intelligences of the AI and the economy are congruent. AI, as a productivity tool, benefits workers more if the intelligences of the AI and the workers complement each other. Merging longitudinal global AI investment data and economic indicators from multiple sources from 2010 to 2019, we demonstrate that mechanical AI benefits an agricultural economy more, thinking AI benefits a manufacturing economy, and feeling AI benefits a service economy more. We further find that although thinking AI investments still have the largest impact on economic productivity, feeling AI investments benefit both economic productivity and standard of living. Using gender differences in intelligence as an instance, we demonstrate that skilled female workers benefit more from thinking AI investments than skilled male workers, an indication that females' feeling intelligence may complement thinking AI. The results have important implications for investing in the right AI intelligence(s) for economic and labor outcomes, balancing the economic and labor impacts of AI investments, and reducing the gender gap in the labor market by leveraging the different intelligences of AI.

Thursday, 10:30AM

TB10

Oxford - Level 2

Digital Marketing: Digital Media

Contributed Sessions

Session Chair

Francesca Sotgiu, Vrije Universiteit Amsterdam, Amsterdam, Netherlands.

Thursday, 10:30AM

TB10

Oxford - Level 2

Digital Marketing: Digital Media

Contributed Sessions

1 Call-To-Action or Inaction? Call-To-Action Buttons Hurt In-Feed Social Advertising

Mengchen Xu[1], Sha Zhang[1], Aihui Ding[2], [1]University of Chinese Academy of Sciences, Beijing, China; [2]University of South Florida, Tempa, FL, Contact: zhangsha@ucas.ac.cn

Call-to-Action buttons play a crucial role in digital marketing by encouraging and guiding consumers to take a desired action, such as making a purchase, signing up for a newsletter etc. The use of call-to-action (e.g., "shop now") buttons is a common practice in advertising, with the expectation that it will increase higher click-through rates and sales conversions by creating a sense of urgency and directing attention to specific offers. The limited prior research indeed finds a *positive* effect of call-to-action buttons in direct mailing or outdoor advertising. Departing from the prevailing view, we propose and empirically find that call-to-action buttons have a *negative* impact on click-through rates in social media, where consumers' main objectives are to share daily life and communicate with friends. Using 400 Chinese participants, Study 1 shows the negative effect of various types of call-to-action buttons (a "learn more" button and a "shop now" button) in WeChat. Using 193 U.S. participants, Study 2 replicates the negative call-to-action effect on Instagram and identifies ad nativeness as the underlying mechanism. In addition, this study also excludes several possible alternative accounts: persuasive intent, self-serving motive, ulterior motive, and perceived risk. This paper thus makes important contributions to the literature on call-to-action buttons and in-feed advertising by challenging the key assumption of the *positive* effect of call-to-action buttons in general to the *negative* effect of call-to-action buttons in social media. Our results highlight the need for marketers and advertisers to cautiously consider the use of call-to-action buttons in in-feed social ads.

Thursday, 10:30AM

TB10

Oxford - Level 2

Digital Marketing: Digital Media

Contributed Sessions

2 Navigating the Touchless Economy: A Typology of Virtual Communities

Xin Ge, University of Northern British Columbia, Prince George, BC, Canada. Contact: gex@unbc.ca

Seeking safe interactions with other people for work, play, learning, and commerce, we are increasingly participating in virtual communities. To promote study of this accelerating realm of activity, this essay considers a typology adapted from C. Porter's (2004) typology of virtual communities. The five elements of the proposed typology include (1) purpose (content of interaction), (2) place (location of interaction), (3) platform (design of interaction), (4) population (participants in the interaction), and (5) profit model (return on interaction). This five-element typology facilitates recognition of essential elements of and differences between the many virtual communities that are becoming part of our lives and identification and organization of topics for future research.

Thursday, 10:30AM

TB10

Oxford - Level 2

Digital Marketing: Digital Media

Contributed Sessions

3 The Role of Surprise and Suspense for Digital News Providers

Ron Berman[1], Daniela Schmitt[2], [1]The Wharton School, Philadelphia, PA, [2]Nova School of Business and Economics, Carcavelos, Portugal. Contact: daniela.schmitt@novasbe.pt

Many online news providers moved to a freemium business model where consumers have access to some free content, while the rest of the content appears behind a paywall. As a result editors need to decide what topics to cover and which articles should appear in the paid and free sections. Understanding how content types affect subscriber demand and long-term revenue is hard because editors make an endogenous decision about the content they solicit and the allocation to the paid and free sections. One type of content, however, shows promise in answering this question - suspenseful and surprising content. Suspenseful events are those with high variance in the uncertainty of their outcome, i.e. a close soccer match between two teams. Surprising events are those with a realized outcome that is very different from the expectation prior to the event, i.e., an upset victory by the underdog team. Other important contexts

where suspense and surprise are common include political debates, voting, and elections. The inherent uncertainty in these events allows us to use their realized outcomes for empirical identification when estimating demand and consumer preferences. Although a few theories prescribe a strategy of content creation for information designers such as the editor in this case, these theories have not been tested empirically, and their revenue implications have not been explored. We empirically analyze how content editors should treat surprising and suspenseful events - how much coverage they should allocate to them, and whether the content should be paid or free.

Thursday, 10:30AM

TB10

Oxford - Level 2
Digital Marketing: Digital Media
Contributed Sessions

4 The Effectiveness of Mobile-Specific Content in Mobile In-App Video Advertising

Yusuf Öç[1], Stefan Bernritter[1], Kirk Plangger[1], Francesca Sotgiu[2], [1]King's College London, London, United Kingdom; [2]Vrije Universiteit Amsterdam, Amsterdam, Netherlands. Contact: f.sotgiu@vu.nl

Incorporating embodied locomotory features, such as tilt, tap, and shake, into in-app video advertising creatives enables consumers to engage with the advertisement physically, thus enriching their experience. We utilize the Grounded Cognition theoretical perspective to understand the impact of mobile-specific features on consumer brand choice intention. To achieve this, we develop a new advertising content classification system that incorporates mobile features such as browse, interact, and play into the advertising content. This classification system is tested through an international field experiment involving 284,758 participants from 16 countries. The results of random effect regression show that tilt action and play features in the ad have the highest impact on brand choice. The study also highlights the significance of frequency and recency of exposure to mobile video ads. This research makes several noteworthy contributions to the literature. Firstly, it shows the relationship between frequency of exposure, recency and brand choice in mobile advertising. Secondly, we provide a new advertising content classification system that incorporates mobile features and demonstrates how these affect brand choice. Thirdly, the study sheds light on the impact of the quality and quantity of in-app video advertising on consumer brand choice intentions. The findings of this study have practical implications for advertising professionals and brand managers. They can use the information to optimize their mobile video advertising strategies by incorporating more tilt actions than swipe and shake features and increasing the play elements in the ad. By doing so, they can enhance the success of their mobile advertising campaigns.

Thursday, 10:30AM

TB11

Cambridge - Level 2
ISMS Doctoral Dissertation Winners II
Special Session

Session Chair
Jiwoong Shin, Yale School of Mangement, New Haven, CT

Thursday, 10:30AM

TB11

Cambridge - Level 2
ISMS Doctoral Dissertation Winners II
Special Session

1 Doctoral Award Winners Special Session

Jiwoong Shin, Yale School of Mangement, New Haven, CT

Doctoral Award Winners will give their presentations.

Thursday, 10:30AM

TB11

Cambridge - Level 2
ISMS Doctoral Dissertation Winners II
Special Session

2 Does Customer Feedback Lead to Spillover Effects Through Firm Improvements?

Rupali Kaul[1], Stephen J. Anderson[2], Pradeep Chintagunta[3], Naufel Vilcassim[4], [1]Stanford University, Stanford, CA, [2]McCombs School of Business, University of Texas, Austin, TX, [3]University of Chicago, Chicago, IL, [4]Dept of Management, London School of Economics, London,

United Kingdom.
Academic researchers, as well as industry practitioners, recognize that the voice of the customer is a powerful tool that businesses can leverage to enhance their performance. Thus companies routinely solicit and obtain feedback from a subset of their customers. Whether the feedback then has any effect on the non-solicited customers depends both on whether the company makes organization-level changes, as opposed to responding just to the solicited customers, and whether these changes, if any resonate with those customers. This research seeks to assess the impact of customer feedback on firm learning about dimensions to improve and as a result, understand the spillovers it can cause to non-solicited customers. We conduct a randomized controlled field experiment in Rwanda to study the impact of customer feedback on a sample of small-scale entrepreneurs. We hypothesize that customer feedback could operate through two broad mechanisms - (1) the act of seeking feedback itself could have a direct effect on the customers who were reached out to, or (2) the feedback could cause firms to learn from it and respond by improving the products and experiences they offer, which in-turn could cause spillovers across customers. Our study attempts to tease these effects apart.The results from the experiment show that customer recall of the business increases by about 38% and purchase increases by 77% for customers who were not engaged in the feedback process. We present evidence to suggest that these spillover effects of feedback are driven by changes made by the firms in response to the customer feedback that they were provided. Finally, we also show that customer feedback led to an overall6positive and significant impact on the performance of the treatment firms with a 62% improvement in sales and 54% improvement in profits relative to the control firms while showing suggestive evidence of diminishing marginal returns to feedback. Through this study we also elucidate a simple feedback seeking process which can be adopted by small businesses to improve their performance. These findings can guide firms in leveraging the information available with their customer base to improve the products/experiences they offer and drive greater profits.

Thursday, 10:30AM

TB11

Cambridge - Level 2

ISMS Doctoral Dissertation Winners II

Special Session

3 The Challenges of Deploying an Algorithmic Pricing Tool: Evidence from Airbnb

Mohsen Foroughifar[1], Nitin Mehta[2], [1]University of Toronto, Toronto, ON, Canada; [2]University of Toronto, toronto, ON, Canada. Contact: mohsen.foroughifar@rotman.utoronto.ca
We study the deployment of an algorithmic pricing tool, Smart Pricing (SP), on Airbnb's platform. SP is a machine learning algorithm that uses past data to predict demand and employs proxies correlated with the host's marginal cost to set prices for listings. The success of such deployments depends on how well the algorithm performs and how sellers use the tool for their business decisions. Our analyses suggest that adopting SP is associated with higher benefits for hosts who rarely change their prices compared to those who flexibly adjust their prices before adoption. However, hosts who rarely change their prices are surprisingly less likely to adopt SP. To understand how the platform can overcome this challenge, we propose and estimate a dynamic structural model in which hosts make adoption decisions based on their expectations of the algorithm's behavior. Our estimation results identify a gap between the actual performance of the SP algorithm and the host's prior belief about it. Specifically, hosts with a pessimistic prior belief about SP think they will need to manually correct algorithmic prices if they adopt SP, and this belief is disproportionately stronger for hosts with higher adjustment costs, making SP adoption less attractive to them. Our counterfactual simulations indicate that the introduction of SP has had a small positive impact on the average host profit and the total platform revenue. But this boost can be significantly raised if Airbnb educates hosts to correct their beliefs about SP. This highlights the need for proper communication of the algorithm's benefits and how it works in order to successfully deploy a machine learning tool. The counterfactual analyses also demonstrate that, since the platform does not fully capture the host's private marginal cost in training the algorithm, using estimated costs from the structural estimation to re-train the algorithm can significantly increase the profitability of SP for both hosts and the platform. It suggests that combining the results of structural models and machine learning tools can help platforms design better algorithms.

Thursday, 10:30AM

TB12

Trinity - Level 2

Branding: Branding Strategy and Metrics

Contributed Sessions

Session Chair
John Dawes, UniSA, Adelaide, Australia.

Thursday, 10:30AM

TB12

Trinity - Level 2
Branding: Branding Strategy and Metrics
Contributed Sessions

1 Whether It Could be a Win-Win Situation for All Parties in Live Commerce—The Perspective of Co-Creation in Branding
Jesheng Huang, Chung Yuan Christian University, Taoyuan City, Taiwan. Contact: iamjesheng@gmail.com
Live commerce is now the most typical feature of live stream economy. There are more and more brand marketers using livestreaming e-commerce to draw in customers by making cooperation with live streamer. However, most of gross merchandise volume in live commerce are dominated by few live streamers (taken as social media influencer), causing a critical question that which parties appropriate the branding benefit mostly, live streamer or product brand? This study examines the triple interaction relationships among social media influencer (SMI), product brand and consumers by the perspective of co-creation in branding. That is, co-creation occurs on live stream platforms for marketer-stakeholder engagement with brands. Then the research questions are (1) what is co-created and for whom? (2) who initiates the co-creation process? And (3) how the co-creation occurs, interaction or influencing without interaction? We conducted a structural equation modeling method to examine the hypotheses within our research framework. We categorize four aspects—characteristics of live streamer, co-creation occurs, perceived consumer value willingness-to-buy respectively, and their corresponding research variables. 1048 copies of effective questionnaire are collected. The results reveal the popularity of live streamer is key factor contributing to his/her character attribute, which will bring more hedonic value to consumers and then lead positive brand attitude toward product brand with more brand attachment toward live streamer. Besides, the amount of information is key factor contributing to the content attribute delivered by live streamer, which will bring more utilitarian value to consumers and then lead more positive brand experience toward product brand. Both of the two above paths have significant positive impact on consumer's willingness-to-buy. Therefore, there will be a win-win situation for all of parties in the livestream e-commerce under the above conditions. Finally, future research agenda has been suggested as well.

Thursday, 10:30AM

TB12

Trinity - Level 2
Branding: Branding Strategy and Metrics
Contributed Sessions

2 Impact of Product Returnes on Brand Tier Choice: An Empirical Analysis
Giwon Son[1], Sungho Park[2], Duk Bin Jun[1], [1]Korea Advanced Institute of Science and Techonology, Seoul, Korea, Republic of; [2]Seoul National University, Seoul, Korea, Republic of. Contact: gwson@kaist.ac.kr
Multi-brand companies determine their brand positioning based on the price and quality of their products, and they would like their customers to purchase the brand products with a higher positioning if possible. This study examines how customers' returns affect the choice of brand tier when purchasing multi-brand company products. Using customer purchase and refund transaction data of a multi-brand cosmetics company, we have found that customers have a higher probability of purchasing top-positioning brand products in their next transaction after a return. We also found through robustness tests that the average purchase price per unit weight of products also increases in the next transaction after a return. This study suggests the directionality of promotional strategies that multi-brand companies can have when customers do not completely withdraw after a return and re-purchase again.

Thursday, 10:30AM

TB12

Trinity - Level 2
Branding: Branding Strategy and Metrics
Contributed Sessions

3 Vulture Marketing: How Competitor Brands Can Capitalize on Brand Pullouts
Kristopher Keller[1], Harald Van Heerde[2], [1]Kenan-Flagler Business School, Chapel Hill, NC, [2]University of New South Wales, Sydney, Australia.

Many world-leading brand agglomerates such as Unilever, Proctor and Gamble, and Coca-Cola regularly prune their brand portfolio by pulling their brands out of categories. While the marketing literature offers plenty of guidance for new brand launches, very little is known on how competitor brands can fill the void left behind by another brand's pullout. This paper studies how the pullout of a national brand affects the sales of sister national brands (owned by the same brand manufacturer as the pulled-out brand), competitor national brands (owned by other manufacturers), and private labels (owned by retailers) in the same category. It also documents how these three types of brands can engage in "Vulture Marketing" and may use their marketing mix to take advantage of the pulled-out brand's departure from the market. Using an empirics-first approach (Golder et al. 2023, Journal of Marketing), this paper addresses two pertinent research questions: *First, when a brand is pulled out of a category, who benefits the most: sister national brands, other competitor national brands or private labels? Second, to what extent does marketing conduct drive the degree to which a brand benefits, and does it depend on the type of brand?* The research capitalizes on 33 brands pulled from their categories, and uses US Nielsen scanner data to document the effects of these brand pullouts on more than 550 competitor brands operating in the same categories across 150 designated market areas and 10 years, resulting in almost 10,000 competitor brand-market pairs. The analysis uses a synthetic control approach combined with a Heckman selection model for the pullout decision and instrumental variables to account for marketing mix endogeneity. The empirical findings will be discussed at the conference.

Thursday, 10:30AM

TB12

Trinity - Level 2

Branding: Branding Strategy and Metrics

Contributed Sessions

4 **The Influence of Positive and Negative Likelihood to Recommend on Brand Growth**

John G. Dawes, UniSA, Adelaide, Australia. Contact: john.dawes@unisa.edu.au

A topic of considerable debate in business press and academic research is whether metrics such as customer likelihood to recommend (reflected in the famous 'Net Promoter Score') predict, or drive revenue growth or market share. Empirical tests about this association show mixed results. A key shortcoming of the most prominent recommendation metric, the Net Promoter Score, is that negative word of mouth is inferred from low likelihood to positively recommend. Examining the association between brand growth and negative word of mouth, as well as positive word of mouth, may provide additional insight. Next, likelihood-to-recommend or NPS studies have primarily been administered to current customers of a firm or brand. The question of whether NPS data gained from non-current customers can be used to predict firm growth has been relatively under-explored. While non-customers may have a lower propensity to recommend for or against a brand, that brand may have many more non-customers than current customers (for example, former owners of a car brand). Therefore likelihood to recommend - for or against a brand - among non-customers could potentially be a stronger influence on firm growth than likelihood to recommend among current customers. This study examines how firms' scores relating to positive or negative word of mouth from current, former and not-ever-customers relate to future growth. The study employs likelihood to recommend and market share data over a nine-year period for brands in two industries, motor vehicles and supermarkets in the UK. Preliminary results indicate little association between likelihood to recommend (positive or negative) scores for brands, and their future growth.

Thursday, 10:30AM

TB13

Escorial - Level 2

Recent Research on Consumer Search and Firm Promotions, Pricing, and Investments

Special Session

Session Co-Chair

Yufeng Huang, University of Rochester, Rochester, NY

Thursday, 10:30AM

TB13

Escorial - Level 2

Recent Research on Consumer Search and Firm Promotions, Pricing, and Investments

Special Session

Session Chair

Kosuke Uetake, Yale School of Management, New Haven, CT

Thursday, 10:30AM

TB13

Escorial - Level 2

Recent Research on Consumer Search and Firm Promotions, Pricing, and Investments

Special Session

1 **Time Allocation and Multi-Category Search**

Rafael P. Greminger[1], Yufeng Huang[2], ILYA Morozov[3], [1]UCL School of Management, London, United Kingdom; [2]University of Rochester, Rochester, NY, [3]Northwestern University, Kellogg, Evanston, IL

We use detailed individual-level data to study how consumers allocate time to different retailers and product categories when shopping online. We find that most consumers allocate all of their shopping time to one retailer within each category. When the opportunity cost of time decreases, consumers expand their search to more categories, sample more products in each category, but they do not start visiting more retailers. To explain these empirical patterns, we develop and estimate a time allocation model in which allocating more time to a given category enables the consumer to examine more products before making a purchase decision. We show that modeling search as a time allocation problem allows us to provide a micro-foundation for search costs and to explore how facilitating search in some product categories might have unexpected effects on consumer search and choice in other categories.

Thursday, 10:30AM

TB13

Escorial - Level 2

Recent Research on Consumer Search and Firm Promotions, Pricing, and Investments

Special Session

2 **Measuring the Impact of Targeted B2b Promotions: A Counterfactual Matching Approach**

Paul Ellickson[1], Wreetabrata Kar[2], James Reeder[1], [1]University of Rochester, Rochester, NY, [2]Krannert School of Management, Purdue University, West Lafayette, IN

We examine the use and effectiveness of targeted sales promotions in a novel business-to-business (B2B) context. While the impact of various promotions in the traditional business to consumer (B2C) context have been widely studied, much less is known about B2B settings, in which these marketing interventions are often coupled with in-person sales calls and relationships often long-lasting. Exploiting detailed promotion and outcome data from a dominant, multi-national manufacturer of medical devices, we design and implement an estimation strategy that leverages knowledge of the complete set of targeting variables observed by the firm along with ex ante visit plans that serve as an additional source of exogenous variation. A flexible, machine learning based matching approach allows us to recover both heterogenous and dynamic effects of these promotion, while quantifying potential synergies from the use of sales visits as an additional marketing lever. To estimate these causal effects, we augment the growing literature of counterfactual-based estimators with advances in machine learning to quantify the causal effects of two different promotional types: a single, time-invariant percentage off discount and a contest or compliance-type promotion where clients receive a payoff based on the amount ordered. Initial evidence suggests that these two types of promotions have different levels of effectiveness moderated by client-level characteristics, such as the size of client, their degree of repeat business, and their ties to the focal firm. We provide further guidance for optimal targeting and site visit policies.

Thursday, 10:30AM

TB13

Escorial - Level 2

Recent Research on Consumer Search and Firm Promotions, Pricing, and Investments

Special Session

3 **Demand Spillover and Inequality in the Wic Program**

Jose Miguel Abito[1], Kathleen Hui[2], Yuval Salant[3], Kosuke Uetake[2], [1]University of Pennsylvania (Wharton), Philadelphia, PA, [2]Yale School of Management, New Haven, CT, [3]Northwestern University, Evanston, IL

The Special Supplemental Nutrition Program for Women, Infants, and Children (WIC) is a large U.S. government program that provides infant formula to low income households. States procure infant formula through auctions of sole-sourced exclusive supply contracts and in total, purchases infant formula for about 50% of all U.S. infants. This paper studies the impact of the WIC program on consumer behavior and equilibrium infant formula prices with a focus on the spillover effect of the WIC program on households who are not eligible for the program. Using household-level data and the timing of WIC contract changes across states, we estimate large spillover effects on market shares among non-WIC households but only small changes in retail prices. However, these estimates do not take into account possible equilibrium effects on optimal pricing behavior from introducing a competing WIC-branded product in the market. To account for equilibrium effects on prices, we estimate a structural demand and equilibrium pricing model where we allow for heterogeneous preference for the WIC brand. Preference for the WIC brand may stem from consumer misperception of the WIC brand as a higher quality product hence creating artificial vertical differentiation in the market. We show that the estimated distribution of preference for the WIC brand leads to significantly higher equilibrium spillover effects on retail prices for all infant formula products. Finally, we find that lower income, non-college educated and minority non-WIC households tend to prefer the more expensive premium and WIC-branded products and thus are disproportionally affected by the increase in retail prices.

Thursday, 10:30AM

TB13

Escorial - Level 2

Recent Research on Consumer Search and Firm Promotions, Pricing, and Investments

Special Session

4 The Rise of User Concentration in Mobile App Markets

Yufeng Huang[1], Yukun Liu[1], Xi Wu[2], [1]University of Rochester, Rochester, NY, [2]University of California, Berkeley, Berkeley, CA

We document a sizable increase in the concentration of active users toward the most popular mobile apps. In granularly defined categories, the share of active users of the most popular app increases from 38% in fall 2015 to 48% in spring 2022. This rise in concentration is primarily driven by a drastic increase in the most popular app's ability to retain existing users. We present a range of evidence that the rise in concentration is consistent with endogenous fixed costs to provide product updates. Apps with a larger number of users have higher incentives to pay fixed costs to provide feature updates, which, in turn, brings more users to the app and further incentives to update. Despite possible quality improvements over time, large apps enjoy exceedingly secure market positions, and they increase "prices" to end users in the form of in-app payments and advertising load.

Thursday, 10:30AM

TB14

Alhambra - Level 2

Game Theory: Digital Marketing

Contributed Sessions

Session Chair

Christian Schulze, Frankfurt School of Finance & Management, Oberursel, Germany.

Thursday, 10:30AM

TB14

Alhambra - Level 2

Game Theory: Digital Marketing

Contributed Sessions

1 Attention Lock-In and Fragmentation

Song Lin, Hong Kong University of Science and Technology, Hong Kong, Hong Kong. Contact: mksonglin@ust.hk

How to grab the attention of others? We consider a problem where a sender can choose how to expose a receiver to a primary attraction (e.g., a streaming video) and a secondary attraction (e.g., an ad) in sequence. The receiver may be distracted in a non-preemptive manner: it takes time to restore attention. We show that when the secondary attraction is more beneficial to the sender than the main attraction, the sender may try to lock the receiver into a period of secondary attraction before releasing the primary attraction. We further show that the possibility of attention lock-in may lead the sender to fragmentize the attention span into a sequence of small episodes, with each bundling both primary and secondary attractions. We discuss the implications for digital addiction, ad sequencing, and media platform design.

Thursday, 10:30AM

TB14

Alhambra - Level 2
Game Theory: Digital Marketing
Contributed Sessions

2 The Accuracy of Information

Chutian Wang[1], Bo Zhou[2], Yogesh V. Joshi[2], [1]City University of Hong Kong, Kowloon, Hong Kong; [2]University of Maryland, College Park, MD

Products and services that aim to provide accurate information are increasingly valuable in today's world. While such products may not always accurately reflect the truth, they can help consumers by reducing uncertainty. We model the product design problem of accuracy in information for an information provider when consumers are "truth" seeking in their choice of information provider. We find that consumers value information products more under higher prior uncertainty. When investigation and reporting is sufficiently costly, information provision is profitable only when consumers have high prior uncertainty, so that they see enough value in the information. Although consumers seek the truth, the cost of information provision can still lead to reporting inaccuracy. Specifically, an information provider may allocate more resources on accurately reporting the state which is more likely a priori, to increase its likelihood of presenting the truth. In equilibrium, such allocation of resources can overreport the likelihood of the more likely a priori state. We also analyze the impact of restricting the information provider to be symmetric in the accuracy of reporting different states. We find such a restriction may lead to less provision of information, but improve overall accuracy.

Thursday, 10:30AM

TB14

Alhambra - Level 2
Game Theory: Digital Marketing
Contributed Sessions

3 Regulating Explainable Ai (Xai) May Harm Consumers

Behnam Mohammadi[1], Nikhil Malik[2], Timothy Derdenger[3], Kannan Srinivasan[3], [1]Carnegie Mellon University, Pittsburgh, PA, [2]USC Marshall, Los Angeles, CA, [3]Carnegie Mellon University, Pittsburgh, PA, Contact: behnamm@cmu.edu

Recent AI algorithms are black box models whose decisions are difficult to interpret. eXplainable AI (XAI) is a class of methods that seek to address lack of AI interpretability and trust by explaining to customers their AI decisions. The common wisdom is that regulating AI by mandating fully transparent XAI leads to greater social welfare. Our paper challenges this notion through a game theoretic model of a policy-maker who maximizes social welfare, firms in a duopoly competition that maximize profits, and heterogenous consumers. The results show that XAI regulation may be redundant. In fact, mandating fully transparent XAI may make firms and consumers worse off. This reveals a tradeoff between maximizing welfare and receiving explainable AI outputs. We extend the existing literature on method and substantive fronts, and we introduce and study the notion of XAI *fairness*, which may be impossible to guarantee even under mandatory XAI. Finally, the regulatory and managerial implications of our results for policy-makers and businesses are discussed, respectively.

Thursday, 10:30AM

TB14

Alhambra - Level 2
Game Theory: Digital Marketing
Contributed Sessions

4 Roas Management

Christian Schulze[1], Maximilian Kaiser[2], Florian Elsaesser[1], [1]Frankfurt School of Finance & Management, Frankfurt, Germany; [2]GRIPS Intelligence, Berlin, Germany.

ROAS (Return on Advertising Spend) is widely considered to be one of the most important metrics for measuring and managing the effectiveness of digital marketing efforts. Despite its popularity as a metric, many companies struggle to properly manage ROAS. In our research, we show analytically how companies should set their target ROAS - in particular when consumer demand is expected to vary over time, e.g., is greater around Christmas. We then translate the analytical model into a tool that helps managers make better ROAS-based budget allocation decisions. The tool analyzes companies' sales response curves and provides managers with company-specific target ROAS' for low- and high-demand periods, allowing them to optimize the effectiveness of their (fixed) advertising budget. Application of this tool to historical data from more than one hundred companies spanning various industries and countries suggests ample potential for optimization. Using our newly developed tool may allow many companies to increase their ROAS by 20% or more.

Thursday, 10:30AM

TB15

Michaelangelo - Level 2
CRM: Consumer Behavior II
Contributed Sessions

Session Chair
Junzhou Zhang, Montclair State University, norfolk, VA

Thursday, 10:30AM

TB15

Michaelangelo - Level 2
CRM: Consumer Behavior II
Contributed Sessions

1 Forgive or Forget? Consumer Response to Promotion Denial
Samantha Mujica[1], Tatiana Fajardo[2], [1]University of South Florida, Tampa, FL, [2]Florida State University, Tallahassee, FL
While the literature has extensively explored psychological responses to rejection, there has been a notable lack of research emphasizing these consequences from a marketing perspective. This research examines consumer response to rejection in a promotion context. Importantly, results indicate that future purchase intentions are dependent on the value of the rejected promotion. When a rejected promotion is of low to moderate value, a linear decline in future purchase intentions is present. However, as the value of the rejected offer reaches higher levels, a "rebound effect" is found to occur, wherein future purchase intentions reach levels similar to that of low value promotions. Importantly, this effect is found to be present when the value of the denied promotion is both manipulated and measured. Furthermore, this effect is moderated by justification for the denial. More specifically, when justification for the promotion denial is not provided, the rebound effect is no longer found. Our results provide notable managerial implications for marketers. Among these is the suggestion that the denial of moderately valued promotions is the most detrimental to the consumer-brand relationship. In addition, marketers should strive to provide a justification for a promotion denial.

Thursday, 10:30AM

TB15

Michaelangelo - Level 2
CRM: Consumer Behavior II
Contributed Sessions

2 The Effects of Medical Versus Recreational Cannabis use Stereotypes on Empathy and Altruism
Nazanin Khaksari[1], Namita Bhatnagar[2], Nicolas Roulin[3], [1]University of Manitoba, Winnipeg, MB, Canada; [2]University of Manitoba-Asper School of Business, Winnipeg, MB, Canada; [3]St. Mary's University, Halifax, NS, Canada.
Although medical and recreational cannabis use is widely legalized (Ng et al., 2021), whether and what kind of stigma surrounds cannabis consumption remains unclear. Past research documents a generalized stigma around cannabis use, but nuanced investigations that distinguish between recreational and medical consumption are lacking. This research aims to examine the effect of cannabis consumption type on stereotypes, affect, and supportive responses (both financial and non-financial) in commercial (e.g., customer service) and not-for-profit (e.g., fundraising) contexts. The stereotype content model (Fiske et al, 2002), that categorizes social judgments by warmth and competence, frames our investigation. The fear of stigmatization can have serious implications for medical patients that hesitate to seek care (Satterlund et al, 2015). Results of an experiment (N=150 N. American Prolific users, ages 19 to 73, M_{age}= 35.59) in a restaurant-service-setting show that customers do not perceive servers that are medical users as significantly different from non-users. At the same time, they offer greater empathy, which results in higher service satisfaction and willingness to offer support (e.g., via tips, support for causes championed by the server). Servers that are recreational users, however, are perceived as less competent and receive less empathy, satisfaction, and support compared to medical- and non-users. Further investigations are planned in domains such as fundraising (where generating support for cannabis-related research is difficult, Cooper et al, 2021). Emphasizing its medical importance may trigger greater support from individuals, organizations, and politicians worried about

public optics. Cannabis retailers may also consider the importance of emphasizing medical aspects of their business (e.g., within signage, advertising).

Thursday, 10:30AM

TB15

Michaelangelo - Level 2
CRM: Consumer Behavior II
Contributed Sessions

3 Effect of Psychological Ownership on Performance of Cause-Related-Marketing Based upon Dual Mediation Model, Considering Green and Schema Congruency

Akihiro Inoue, Yuntong Wang, Keio University, Yokohama, Japan.

The green facets of environmental issues, such as ESG, become important in developing not only corporate strategy but also marketing strategy, so called cause-related marketing (CRM). However, how to develop CRM plan in effective way is still under research. In this research, we focus on the effect of psychological ownership on the performance of CRM, based upon the dual mediation model, based upon Bailey, Mishra, and Tiamiyu (2018).

In our research, we extended the Bailey et al. (2018) in three ways: First, we take into consideration psychological ownership as the key factor on the performance of CRM. Second, we include love as the relationship factor between the CRM plan and consumers. Third, we consider schema congruency as the mediation variable that affects on the effectiveness of entire framework.

We used the actual CRM plan used by a Chinese company in China in April 2022 and designed the research to Japanese consumer who are not aware of the CRM plan. We developed the three types of videos using the original CM used in the CRM, that is, congruent, moderately incongruent, and neutral-control videos. We collected 300 samples using a marketing research company in Japan and run the structural equation models with multiple group analyses.

We found that 1) psychological ownership has the significant positive effects overall on the dual mediation model, that 2) the effect of attitude toward company is larger on the performance on CRM plan than that of attitude toward ads, contradictory to the previous findings, that 3) the effect of schema congruency is not significantly different from that of schema moderately incongruency, contradictory to the previous studies. We will show the results in detail in our presentation.

Thursday, 10:30AM

TB15

Michaelangelo - Level 2
CRM: Consumer Behavior II
Contributed Sessions

4 The Moderation Effect of Digital Nudges on Urge to Buy Impulsively

Rijul Chaturvedi, sanjeev verma, vartika srivastava, NITIE, Mumbai, India. Contact: rijul.chaturvedi.2020@nitie.ac.in

Impulse buying leads to various undesirable outcomes, including guilt, shame, regret, and financial strain. E-commerce websites use digital nudges to stimulate consumers for impulse buying. Digital nudges such as scarcity and reviews influence the user to buy a product and induce an impulse to buy. To quantify the effect of digital nudges (scarcity and reviews) on the urge to buy impulsively, the current study explored the relationship between website quality, digital nudges, and the urge to buy impulsively. Participants responded to an online survey based on a Likert scale from one to five. The results indicated that digital nudges moderate the positive influence of website quality on the impulse to buy. The double moderating effect of impulsiveness significantly impacts the Urge to Buy Impulsively when website quality, scarcity nudge, and review nudge interact with each other.

Thursday, 10:30AM

TB15

Michaelangelo - Level 2
CRM: Consumer Behavior II
Contributed Sessions

5 Personalization of Email Marketing in Loyalty Program

Junzhou Zhang[1], Yuping Liu-Thompkins[2], [1]Montclair State University, Montclair, NJ, [2]Old Dominion University, Norfolk, VA, Contact: zhangju@montclair.edu

Although personalization of email marketing has many advantages to business practice, how to operate personalization and further improve marketing message persuasiveness is challenging. In particular, limited attention has been paid to how consumers' behavior within a loyalty program can be leveraged to design effective personalied message. Through one experiment and one field study involving real email campaigns from a frequent flyer program, we show that the match between abstract benefit-focused vs concrete attribute-focused message framing and consumer construal mentality can improve email marketing effectiveness in loyalty programs. The present research enriches persuasion theory and deepens the understanding of goal-related behaviors and mental construal level formation in the goal pursuit process. It also sheds light on how loyalty program managers can better personalize communications with program members based on their position within the program.

Thursday, 10:30AM

TB16

Raphael - Level 2

Marketing for Environmental Sustainability II

Special Session

Session Co-Chair

Yewon Kim, Stanford Graduate School of Business, Stanford, CA

Thursday, 10:30AM

TB16

Raphael - Level 2

Marketing for Environmental Sustainability II

Special Session

Session Co-Chair

Bryan K. Bollinger, NYU Stern School of Business, New York, NY

Thursday, 10:30AM

TB16

Raphael - Level 2

Marketing for Environmental Sustainability II

Special Session

Session Co-Chair

Kristina Brecko, Stanford University, Rochester, NY

Thursday, 10:30AM

TB16

Raphael - Level 2

Marketing for Environmental Sustainability II

Special Session

Session Chair

TI Tongil Kim, University of Texas at Dallas, Richardson, TX

Thursday, 10:30AM

TB16

Raphael - Level 2

Marketing for Environmental Sustainability II

Special Session

1 Consumer Response to Climate Change: Wildfire Smoke and Sustainable Product Choice in California

Taewook Lim[1], TI Tongil Kim[1], Suh Yeon Kim[2], [1]UT Dallas, Richardson, TX, [2]Georgetown University, D.C., WA, Contact: ti.kim@utdallas.edu

Global warming has increased the frequency and intensity of extreme climate change events in recent years. We study consumer response to a major climate change event by examining the case of the 2018 Camp Fire, the most destructive wildfire in California's history. In particular, we investigate how wildfire smoke affects consumer purchases of sustainable products in the dish soap category by combining the Nielsen-Kilts retail scanner data and the Environmental Protection Agency's air quality measure quantifying the severity of wildfire smoke. Exploiting the randomness of the wildfire smoke dispersion induced by geographic and meteorological conditions, we show that stores experiencing severe wildfire smoke exhibit an increase in market shares of sustainable products (3.7 percentage points or 15%) relative to stores facing little to no wildfire smoke. The change in consumer purchases occurs gradually over a few months, suggesting that wildfire smoke is a gentle nudge to sustainable product purchases rather than an abrupt cue to behavior change. We also find substantial heterogeneous responses: stores located in areas with an older population, higher level of education, or higher income observe greater market share changes after severe wildfire smoke. A similar pattern is observed in more Democratic leaning areas, suggesting that political affiliation also plays a role. We then discuss managerial and policy implications of consumer purchases of sustainable products as we face future major climate change events that are likely to continue and intensify.

Thursday, 10:30AM

TB16

Raphael - Level 2

Marketing for Environmental Sustainability II

Special Session

2 Nature Exposure and Sustainable Consumption

Steve Shitai Zhang[1], Bryan K. Bollinger[2], Levin Zhu[3], Randi Kronthal-Sacco[1], [1]NYU Stern School of Business, New York, NY, [2]NYU Stern School of Business, New York, NY, [3]Duke Fuqua School of Business, Durham, NC, Contact: sz1721@stern.nyu.edu

One effect of the Covid-19 pandemic has been to increase in outdoor visitation. Using national county-level consumption data for five categories of consumer packaged goods and Google mobility data to track park exposures, we preliminarily find that this increased exposure to nature has increased the demand for more sustainable products in a time when environmental concerns, especially those related to climate change, are increasing due to the dire consequences of inaction. We also investigated the role of extreme temperature shocks on sustainable demands; we found little evidence that extreme weather leads to higher sustainable consumption.

Thursday, 10:30AM

TB16

Raphael - Level 2

Marketing for Environmental Sustainability II

Special Session

3 Valuing Technology Complementarities: Rooftop Solar and Energy Storage

Bryan K. Bollinger[1], Kenneth Gillingham[2], Andres Gonzalez Lira[3], [1]NYU Stern School of Business, New York, NY, [2]Yale Univesity, New Haven, CT, [3]Pontificia Universidad Catolica de Chile Business School, Santiago, Chile. Contact: bryan.bollinger@stern.nyu.edu

This study estimates the value of a complementarity in the new and growing market for rooftop solar paired with energy storage. Specifically, we ask how the recent introduction of residential battery energy storage options affected the demand for rooftop solar photovoltaic systems nationwide. Residential battery energy storage is a very new technology to the market, with substantial adoptions only in the past few years. It allows rooftop solar adopters to store some or all of the solar electricity generated for use when the sun is not shining. This can be especially valuable to the electricity system by allowing distributed generation to offset electricity consumption at times with the highest wholesale electricity prices. But they also provide a backup generation option to consumers if there is a power outage. We explore this aspect of battery energy storage by asking how much of the current adoption of rooftop solar can be explained by defensive investments to mitigate power outages (note that rooftop solar alone cannot provide backup power in outages). We find clear evidence of a complementarity between rooftop solar and battery storage, although the relatively high cost of battery storage is difficult to justify unless there are enough power outages that there is a need for backup. In a counterfactual simulation in which power outages are reduced to zero, we find a 8% reduction in overall solar adoption.

Thursday, 10:30AM

TB16

Raphael - Level 2

Marketing for Environmental Sustainability II

Special Session

4 Consumer (In)attention to Expiration Dates: A Field Study

Robert Evan Sanders[1], Kanishka Misra[2], Karsten Hansen[3], [1]UC, San Diego, San Diego, CA, [2]Ross School of Business, Ann Arbor, MI, [3]Northwestern University, Evanston, IL

We study consumer choices of perishable items and their implications on retail waste. To conduct the first field study on this topic, we use a dataset that tracks expiration dates for each item on the shelf and consumer choices at the expiration-date level. Our data also include a field experiment where the oldest-vintage (i.e., soonest-to-expire) items on the shelf received dynamic discounts. In addition, the retailer periodically rotates items' locations on the shelf (from oldest to newest) in order to nudge consumers towards older items on the shelf. We develop a theoretical framework under which we anchor a set of predictions

related to consumer attention, dynamic discounts, and shelf organization. Our findings indicate a high degree of consumer inattention to expiration dates: in almost half of all purchases, consumers choose an older item when a fresher one is available on the shelf at the same price, and simply rotating the items' locations increases the oldest-vintage choice share by 24 percentage points. We find, however, that consumers search for newer vintages when the nearest items are too close to expiration—indicating attention to dates is endogenous. Discounts reduce this search likelihood by compensating consumers to take the oldest, nearest vintage instead. Therefore, discounts have a direct effect on choice, as well a choice spillover of keeping the shelf organized for subsequent consumers, extending the benefits after a rotation. Using counterfactual simulations, we quantify the waste implications of this spillover and show the combination of both policies can reduce waste by 30% more than their sum when each is implemented in isolation.

Thursday, 10:30AM

TB18

Windsor - Level 2

Retailing: Consumer Choice II

Contributed Sessions

Session Chair

Dai Yao, The Hong Kong Polytechnic University, Hong Kong, China.

Thursday, 10:30AM

TB18

Windsor - Level 2

Retailing: Consumer Choice II

Contributed Sessions

1 How Much is too Much: Effects of Self and Fairness Concern on Consumer Stockpiling Under Environmental Stress

Hui Wang[1], Yuanfang Lin[2], Tirtha Dhar[2], [1]University of Guelph, Guelph, ON, Canada; [2]University of Guelph, Guelph, ON, Canada. Contact: hwang23@uoguelph.ca

Consumers under environmental stress (e.g., pandemic outbreak) tend to engage in various degrees of stockpiling largely due to the fear of product stock out. Meanwhile there have been researches indicating the existence of consumer fairness concern in purchase, that is, the perceived impact of their purchasing quantity on other buyers' opportunities of getting the products especially under certain risk of supply chain disruptions and stockout. This objective of this research is to investigate how consumers' own loss aversion and fairness concern drive their stockpiling behavior, and the retailer's optimal information and inventory strategies when facing consumers affected by the interplay of selfish and altruistic factors. The authors first develop a theoretical model with a monopoly store selling a product to consumers who decide both the necessary quantity and stockpiling units in purchase. Analyses of the theoretical model identify conditions under which it is optimal for a store to inform consumers of the product inventory level. Facing the uncertainty of product availability in future periods, a consumers' overstocking decision is found to be driven by the perceived store inventory, the stocking cost, the value of extra units in future consumption, as well as degrees of fairness concern in consumption utility. Predictions from the theoretical model are then verified through simulation underagent-based modelling. This paper contributes to the understanding of consumer stockpiling behavior under both self and fairness concern, and provide important recommendations for retailer inventory management and communication strategies.

Thursday, 10:30AM

TB18

Windsor - Level 2

Retailing: Consumer Choice II

Contributed Sessions

2 How Soon Should Consumers Receive Mobile Coupons: The Role of Recency

Arun Gopalakrishnan[1], Young-Hoon Park[2], [1]Rice University, Houston, TX, [2]Cornell University, Ithaca, NY, Contact: agopala@rice.edu

The last decade has seen a proliferation in the use of mobile coupons. A question that often arises among researchers and practitioners is how long after a customer touch point (or ***recency***) a firm should send a mobile coupon. Should a firm move quickly lest the customer loses interest (dubbed the recency trap), or wait for a sweet spot in time? In our setting, the customer touch point is online cart addition without purchase, and we conduct a field experiment with an online retailer. We manipulate coupon face value in two treatment conditions and have two control conditions. We

find that both coupons lift purchase rate of cart items. The higher-value (lower-value) coupon has a lift of 161% (64%) in purchase rate in line with prior literature that suggests coupon value affects its performance. Second, we examine mobile coupon lift in purchase rate as a function of cart recency. For both coupons we find an inverted U-shaped curve for lift as a function of cart recency. We find no effect of coupon up to 3 days of cart recency, and a sweet spot of 4 to 6 days of cart recency for the highest lift of 5.6 percentage points. Beyond a cart recency of 9 days, only the higher-value coupon continues to have an effect for some ranges of cart recency, suggesting an upper bound on how long a firm may want to wait before sending a mobile coupon. The findings suggest that the optimal policy is to use the lower-valued coupon 4 to 6 days after cart addition without purchase.

Thursday, 10:30AM

TB18

Windsor - Level 2
Retailing: Consumer Choice II
Contributed Sessions

3 The Effects of Augmented Reality on Sales and Product Returns in Online Retailing

Alexander Pfaff, Martin Spann, LMU Munich School of Management, Munich, Germany. Contact: a.pfaff@lmu.de

Augmented Reality (AR) is an innovative tool to evaluate products online. It enables consumers to project product holograms into their surrounding real-world environment in real time using their mobile devices. By improving product evaluation, AR therefore bears the potential to decrease online consumers' product fit uncertainty. To investigate this potential of AR and its effects on product sales and product returns, we analyze a unique dataset provided by a Western European multi-channel home interior retailer. The dataset comprises online purchases and returns of AR- and non-AR-enabled products before and during a countrywide shutdown of retail stores in course of the COVID-19 pandemic. We make use of this shutdown to isolate the effect of AR on consumer reactions when they are taken away their opportunity to simultaneously evaluate products in the retailer's stores. We explain our quasi-experimental findings by an online experiment, in which we conceptualize and test product fit uncertainty in terms of products' spatial and haptic attributes (i.e., spatial fit uncertainty and haptic fit uncertainty). We derive implications for AR-deploying retailers and contribute to digital marketing research by helping to understand a digitalization trend accelerated by the pandemic.

Thursday, 10:30AM

TB18

Windsor - Level 2
Retailing: Consumer Choice II
Contributed Sessions

4 In-Store Social Crowdedness and Customer Behaviors

Xi Li[1], Yacheng Sun[2], Dai Yao[3], [1]Shenzhen University, Shenzhen, China; [2]Tsinghua University, Beijing, China; [3]The Hong Kong Polytechnic University, Hong Kong, China.

In-store social crowdedness is an indispensable contextual component that shapes customers' offline shopping experience. Studies on the effects of social crowdedness primarily utilize laboratory settings, and the findings are mixed. Leveraging smart traffic counters installed at 1,800 brick-and-mortar stores across the malls of a large property group, we accurately calibrate social crowdedness at the store- and hour-level. In addition, we link visits to different stores by customers who are members of the property group using their transaction records. Whereas existing literature focuses on in-store purchases alone, this unique data offers an opportunity to examine how social crowdedness affects customer behaviors at three distinct stages: prior to, during, and after a store visit. We find that, overall, in-store social crowdedness leads to more store visits and sales, and it creates some substitution between current and future shopping trips, i.e., customers extend their current trips while postponing the next ones after experiencing a high level of social crowdedness. Additionally, while more members are drawn to stores with higher levels of crowdedness, the sales boost is mainly contributed by members at lower membership tiers and to a larger extent by non-members. The positive effects of social crowdedness are more pronounced for younger male customers and members with longer tenure. Finally, the substitution effect is homogeneous across members. Together, these findings shed light on the holistic effects of social crowdedness during and across customers' shopping trips, providing rich managerial implications for context-based marketing.

Thursday, 10:30AM

TB19

Sandringham - Level 2

Pricing: Big Data and Machine Learning - Personalization

Contributed Sessions

Session Chair

Qiaochu Wang, Carnegie Mellon University, Pittsburgh, PA

Thursday, 10:30AM

TB19

Sandringham - Level 2

Pricing: Big Data and Machine Learning - Personalization

Contributed Sessions

1 Algorithmic Collusion in Ai-Powered Pricing: Examining the Effect of Product Rankings

Liying Qiu, Yan Huang, Param Vir Singh, Carnegie Mellon University, Pittsburgh, PA, Contact: yanhuang@cmu.edu

Reinforcement learning (RL) based pricing algorithms have been shown to tacitly collude to set supra-competitive prices in oligopoly models of repeated price competition. We investigate the impact of product ranking systems, a common feature of online marketplaces, on algorithmic collusion. We study experimentally the behavior of AI powered pricing algorithms (Q-learning, a type of RL) in an oligopoly model of repeated price competition in the presence of product rankings. Through extensive experiments, we find that when consumers search sequentially on the platform, personalized or utility based ranking facilitates the tacit collusion that stems from RL-based pricing algorithms. In contrast, unpersonalized ranking can effectively hinder algorithmic collusion and increase consumer welfare. Our results imply that when consumers share more data, they can be worse off even in the absence of price discrimination. Our analysis highlights the impact of ranking systems on algorithmic collusion and consumer welfare when sellers delegate AI to make pricing decisions.

Thursday, 10:30AM

TB19

Sandringham - Level 2

Pricing: Big Data and Machine Learning - Personalization

Contributed Sessions

2 Product Quality Versus Online Brand Activity Effects for Prices of Experience Products: Evidence from the Champagne Industry

Jana Gross[1], Olivier Gergaud[2], Renaud Lunardo[1], [1]Kedge Business School, Talence, France; [2]Kedge Business School, Paris, France. Contact: renaud.lunardo@kedgebs.com

Because the value of experience products such as Champagne cannot be assessed before purchase, we examine how quality ratings and consumers' online brand related activities shape the price of such products. We combine five different sources of data from the Champagne industry to examine the respective effects of quality ratings and online brand activity (i.e., online engagement and presence) on prices. Using data extracted from Xerfi reports along with data extracted from Vivino, Wine Searcher as well as digital presence data, including more than 25,000 Instagram posts, we obtain a final unique sample of 136 champagne brands to investigate how prices are affected by quality ratings and online activity. From a series of OLS, Poisson and robust (MM70 and 95) regressions, we show that the price of Champagne depends both on quality and brand engagement. That is, a 1% (1 point) increase in quality - measured by experts' ratings on Wine Searcher - leads to a 12.1% increase in price. Having consumers being engaged online with the brand has a weaker leverage effect on price. Namely, a 1% increase in online brand engagement (proxied by the number of reviews received on Vivino by the brand) increases the price by 0.21%. Further, we find that not all social media platforms do not affect brand engagement similarly, with Instagram inducing a significant and positive benefit for the brand both in terms of engagement and price, while such an effect is not observed with Facebook or any other social media. Robustness checks confirm our main results. In particular, a two-stage least square version of the model supports the results obtained following a naive - OLS - approach. We use a vector of social media account dummies along with a measure of rank retrieved from Wine Searcher as instruments to identify brand engagement in the first stage. Controlling for the endogeneity of engagement in the context of the price equation decreases (reinforces) the role played by quality (engagement) without changing our main conclusions.

Thursday, 10:30AM

TB19

Sandringham - Level 2

Pricing: Big Data and Machine Learning - Personalization

Contributed Sessions

3 Behavior-Based Price Discrimination with Frequency

Yuyang Zhao[1], Siyi WANG[2], Yunchuan Liu[3], [1]Nanjing University of Science and Technology, Nanjing, China; [2]University of Science and Technology of China, Anhui, China; [3]University of Illinois, Champaign, IL, Contact: yyzhao@njust.edu.cn

Customer purchase histories provide two dimensions of customers' features: new or old and infrequent or frequent. Based on customer preferences revealed in customers' features, firms may have two ways of pricing: behavior-based pricing (BBP) and frequency behavior-based pricing (FBBP), respectively. We provide a unified framework to capture these two customers' purchase behavior and firms' pricing behavior in a competitive market over multiple periods. We find the impact of FBBP on competition in different periods is fundamentally different from that of BBP. We show that, counter-intuitively, FBBP can increase the firm's profit under symmetric competition.

Thursday, 10:30AM

TB19

Sandringham - Level 2

Pricing: Big Data and Machine Learning - Personalization

Contributed Sessions

4 Algorithms, Artificial Intelligence and Simple Rule-Based Pricing

Qiaochu Wang, Yan Huang, Param Vir Singh, Kannan Srinivasan, Carnegie Mellon University, Pittsburgh, PA

Automated pricing comes in two forms - simple rule-based (e.g., targeting or undercutting the lowest price, etc) and artificial intelligence (AI) powered algorithms (e.g., reinforcement learning (RL) based). While simple rule-based pricing is the most widely used automated pricing strategy today, many retailers have increasingly adopted pricing algorithms powered by AI. Q-learning algorithm (a specific type of RL algorithm) is particularly appealing for pricing because it autonomously learns an optimal pricing policy and can adapt to evolution in competitors' pricing strategy and market environment. It is commonly believed that the Q-learning algorithm has a significant advantage over simple rule-based pricing algorithms. However, through extensive pricing experiments in a workhorse oligopoly model of repeated price competition, we show that when the simple rule-based algorithm competes against the Q-learning algorithm, higher prices are sustained in the market compared to when multiple Q-learning algorithms compete against each other. This phenomenon is due to the simple rule-based algorithm introducing stationarity into the competition, allowing the Q-learning algorithm to effectively search for the optimal policy. The findings are further validated through a non-sequential search structural model estimated using individual-level data from a large e-commerce platform in China. The results suggest that in a real-world demand environment, simple rule-based algorithms may outperform Q-learning algorithms when facing other Q-learning competitors.

Thursday, 1PM

TC01

Trade Room- Lobby Level

ML: Applications III

Contributed Sessions

Session Chair

Pantelis Loupos, University of California, Davis, Chicago, IL

Thursday, 1PM

TC01

Trade Room- Lobby Level

ML: Applications III

Contributed Sessions

1 LSTM-Based Conditional VAE for Big-Scale Panel Data

Yinxing Li[1], Yasumasa Matsuda[1], Yusuke Kubo[2], Shingo Fukumoto[2], Kanata Hirano[2], Katsuhisa Masuda[2], [1]Tohoku University, Sendai, Japan; [2]Aflac Life Insurance Japan Ltd., Tokyo, Japan.

The development of deep learning methods led to a wealth of possibilities. Generating realistic synthetic data becomes one of the hot topics in recent years for the various purposes. As the time series panel data usually contains both discrete and continuous variables for each individual for multiple trips, it is still quite challenging to generate synthetic data by applying the existing frameworks. Our study aims to propose a high-quality data generator for time-series panel data by involving several features into the benchmark model, Tabular Variational autoencoder (TVAE). We mainly (1) incorporate LSTM structure, (2) extend the base model to the conditional autoencoder for the imbalanced data. Therefore, our proposed model is capable for dynamically generating the time series synthetic data conditional on the previous information. We use big-scale time series panel data for our empirical application and mixture the static TVAE and logistic regressor as the benchmark model. We evaluate our proposed model with several criterions, such as reconstruction error, and accuracy and f1 score for the forecasting task.

Thursday, 1PM

TC01

Trade Room- Lobby Level
ML: Applications III
Contributed Sessions

2 Privacy Preserving Data Fusion

Samuel Levy[1], Dana Turjeman[2], Longxiu Tian[3], [1]Tepper School of Business, Carnegie Mellon University, Pittsburgh, PA, [2]Arison School of Business, Reichman University, Herzliya, Tel Aviv District, Israel; [3]UNC Kenan-Flagler Business School, Chapel Hill, NC, Contact: samlevy@cmu.edu

Data fusion combines multiple datasets to make inferences that are more accurate, generalizable, and useful than those made with any single dataset alone. However, data fusion poses a privacy hazard due to the risk of revealing user identities. We propose a privacy preserving data fusion (PPDF) methodology intended to preserve user-level anonymity while allowing for a robust and expressive data fusion process. PPDF is based on variational autoencoders and normalizing flows, together enabling a highly expressive, nonparametric, Bayesian, generative modeling framework, estimated in adherence to differential privacy - the state-of-the-art theory for privacy preservation. PPDF does not require the same users to appear across datasets when learning the joint data generating process and explicitly accounts for missingness in each dataset to correct for sample selection. Moreover, PPDF is model-agnostic: it allows for downstream inferences to be made on the fused data without the analyst needing to specify a discriminative model or likelihood *a priori*. We undertake a series of simulations to showcase the quality of our proposed methodology. Then, we fuse a large-scale customer satisfaction survey to the customer relationship management (CRM) database from one of the three major U.S. telecommunication carriers. The resulting fusion yields the joint distribution between survey satisfaction outcomes and CRM engagement metrics at the customer level, including the likelihood of leaving the company's services. Highlighting the importance of correcting selection bias, we illustrate the divergence between the observed survey responses vs. the imputed distribution on the customer base. Managerially, we find a negative, nonlinear relationship between satisfaction and future account termination across the telecom carrier's customers, which can aid in segmentation, targeting, and proactive churn management. Overall, PPDF will substantially reduce the risk of compromising privacy and anonymity when fusing different datasets.

Thursday, 1PM

TC01

Trade Room- Lobby Level
ML: Applications III
Contributed Sessions

3 Machine Generated Content and Bidding in Search Engine Advertising

Martin Reisenbichler[1], Thomas Reutterer[2], David A. Schweidel[3], [1]Universität Hamburg, Hamburg, Germany; [2]Vienna University of Economics and Business, Vienna, Austria; [3]Emory University, Atlanta, GA, Contact: martin.reisenbichler@wu.ac.at

Search engine advertising (SEA) is a mainstay in digital marketing to enhance brand visibility and ultimately sales. Among the critical success factors that affect the visibility of sponsored search ads are the advertisers' bidding strategy and ad content. Given the complexity of ad content optimization and bidding systems, digital marketers typically find it hard to succeed in SEA. In our research, we develop a semi-automated system to generate highly optimized ad content based on a novel transformer system building on an attribute-enriched version of large language models. Since improved sponsored search content usually leads to a higher performance, but also translates into higher bidding costs, we predict the cost per click (CPC) for each piece of content with high accuracy (R^2~90%), enabling the company reaching its SEA performance goals, respective of the anticipated target costs. We extensively empirically test our system and conduct field experiments in collaboration with three industry partners. Our proposed system outperforms both trained

human novices and SEA experts based on metrics including impressions, clicks, and production costs, while maintaining a targeted CPC range. We show that model fine-tuning, which dynamically learns and adapts to the specific SEA content sources, is superior to one-shot modeling approaches like GPT-3 and ChatGPT. In addition to proposing a transformer-based architecture to support SEA, we contribute to the SEA literature by demonstrating tradeoffs that exist among ad content writing, the necessary degree of relatedness of the content, as well as the effect of the optimality of the ad's target landing page on the company's website.

Thursday, 1PM

TC01

Trade Room- Lobby Level
ML: Applications III
Contributed Sessions

4 Starting Cold: The Power of Social Networks in Predicting Customer Behavior in Peer-To-Peer Digital Platforms

Pantelis Loupos[1], Moran Cerf[2], [1]University of California, Davis, Chicago, IL, [2]Kellogg School of Management, Evanston, IL, Contact: louposp@gmail.com

The last decade has seen a rapid emergence of non-contractual networked services. The standard approach in predicting future customer behavior in those services involves collecting data on a user's past purchase behavior, and building statistical models to extrapolate a user's actions into the future. However, this method fails in the case of newly acquired customers where you have little or no transactional data. In this work, we study the extent to which knowledge of a customer's social network can solve this "cold-start" problem and predict the following aspects of customer behavior: (1) activity, (2) transaction levels and (3) membership to the group of most frequent customers. We conduct a dynamic analysis on approximately one million users from Venmo, the most popular peer-to-peer payment application. Our models produce high quality forecasts and demonstrate that social networks lead to a significant boost in predictive performance primarily during the first month of a customer's lifetime. Finally, we characterize significant structural network differences between the top 10\% and bottom 90\% of most frequent customers immediately after joining the service.

Thursday, 1PM

TC02

Flagler - Lobby Level
Social Media: Dark Side of Social Media
Contributed Sessions

Session Chair
Sourindra Banerjee, University of Leeds, Leeds, United Kingdom.

Thursday, 1PM

TC02

Flagler - Lobby Level
Social Media: Dark Side of Social Media
Contributed Sessions

1 What Makes Disinformation Go the Extra Mile? Examining the Dark Side of Virality

Christina Okoutsidou[1], Raoul V. Kübler[2], [1]University of Münster, Münster, Germany; [2]ESSEC Business School, Paris, France. Contact: c.okoutsidou@uni-muenster.de

Disinformation can distort real-world events and influence individuals' decisions, posing a serious threat to society. However, moderating disinformation is still a major challenge for social network operators, as they are omnipresent, and social media's ease-of-use, anonymity, and interconnectedness enables their rapid diffusion. Additionally, there is a lack of clear guidance on prioritizing content for censorship efforts. Until now, existing literature focuses on the virality of traditional online content, such as marketing campaigns, which are generally driven by positive emotions and arousal. Nevertheless, this type of content is vastly dissimilar from the hate-filled, misleading, and malicious content on social media platforms, rendering literature findings inapplicable when it comes to disinformation diffusion. *So, what makes disinformation go viral?* Using a unique dataset of ~400 million live-crawled messages on Twitter surrounding the US presidential election in 2020, our study analyzes which content and context characteristics drive the virality of disinformation. We classify ~10 million disinformation spread over ~50,000 distinct disinformation stories and *(1)* identify different diffusion trajectories of virality with the help of time series shape clustering. Moreover, to investigate the differing diffusion patterns, we *(2)* use state-of-the-art natural language processing to analyze linguistic and meta-level features. With that, this work provides ex-ante guidance to policymakers and network operators to help identify the most critical content on social media to curb the spread of threatening disinformation online. Furthermore, this study advances the overall understanding of disinformation diffusion by focusing exclusively on misleading content and the differences among them. Lastly, this work can add a new perspective to existing research by extensively quantifying the effects of viral disinformation online with a large-scale social media analysis.

Thursday, 1PM

TC02

Flagler - Lobby Level
Social Media: Dark Side of Social Media
Contributed Sessions

2 Quantifying the Impact of Vaccine Misinformation on Facebook

Jennifer N. L. Allen, Massachusetts Institute of Technology, Cambridge, MA, Contact: jnallen@mit.edu

In this work, we find causal evidence that misinformation lowers COVID-19 vaccination intentions, and estimate the impact of such misinformation on Facebook. Using randomized survey-based experiments and big data analysis, we demonstrate that (i) misinformation reduces vaccination intentions significantly, but (ii) the impact varies in size depending upon the specific message. In particular, message heterogeneity depends upon the extent to which the content suggests the vaccine is harmful to a person's health.
This work is significant because it is one of the first to demonstrate a causal link between misinformation and real world harms. In recent years, critics have linked online misinformation to negative outcomes such as vaccine hesitancy, polarization, and political violence. Yet, little work has established a causal effect of exposure to misinformation on societal harms or illuminated which pieces of misinformation are particularly pernicious.
We address these issues by combining experimental estimates of attitudinal change with exposure data from social media. First, we use randomized survey experiments to separately estimate the impact of true and false vaccine information on intentions to take a future vaccine for 130 pieces of COVID-19 vaccine-related content sampled from social media. We then use Facebook's URL Shares dataset to collect 13292 vaccine-related URLs shared from 1/1/2021 to 3/31/2021. The dataset contains exposure data, bucketed by demographic and political leaning, for URLs popular on Facebook. Using a combination of crowdsourcing and NLP techniques, we model the causal effect on vaccination intentions of the larger set of content.
We use the combination of impact and exposure estimates to identify the types of misinformation that are most harmful at scale. This work allows us to quantify the public health impact of misinformation shared on Facebook, and reveals that rather than treating misinformation as a monolith, platforms should focus on curbing specific types of misinformation that are both impactful and widely viewed.

Thursday, 1PM

TC02

Flagler - Lobby Level
Social Media: Dark Side of Social Media
Contributed Sessions

3 Impact of Toxicity on User Engagement in Live Streaming

Jeff Inman, Aman Soni, Mina Ameri, University of Pittsburgh, Pittsburgh, PA

Toxicity is an umbrella term for behaviors that may negatively impact the mental and social well-being of platform members and has become a frequently observed behavior in online platforms. While extreme toxicity is believed to negatively impact engagement, there is not enough empirical evidence on the nature and extent of this negative effect. Our research investigates how different types of toxicity in live streams affect the viewers of the stream and their engagement with it. We use the data for viewer chat during live streams on Twitch platform and measure different types of toxicity in the chat using Google's Perspective API. We also collect data on viewer's engagement with the video itself as well as engagement with the video streamer's channel. Our results provide a better understanding for the relationship between the different types of toxicity and engagement in both short term and long term. Our findings especially help streamers in choosing their toxicity control strategies to increase user engagement. Theoretically, our research contributes to limited literature on toxicity and helps in understanding how engagement is affected by toxicity on online platforms. This research has also implications for managers and can help them in effectively designing platform interventions to control for toxicity.

Thursday, 1PM

TC02

Flagler - Lobby Level

Social Media: Dark Side of Social Media
Contributed Sessions

4 Untactful Social Media Messages: Antecedents and Consequences

Sourindra Banerjee[1], Abhishek Borah[2], Yu-Ting Lin[3], Andreas Eisingerich[4], [1]University of Leeds, Leeds, United Kingdom; [2]INSEAD, Seattle, WA, [3]University of New South Wales, Sydney, Australia; [4]Imperial College London, London, United Kingdom.

The positive effects of firms' active presence and participation in social media has been widely studied in marketing. However, important questions remain about the impact and characteristics of a firm's self-induced social media crisis that can drive negative consumer sentiment and how the repercussions of such crisis can be mitigated effectively. Specifically, we address this gap by theorizing about the phenomenon of untactful social media messages (USMM) and identifying the key characteristics of such messages namely, sloppiness, incongruence, and dissonance. Furthermore, we theorize and demonstrate the relationship between the key characteristics of USMM and its damaging effects on abnormal stock returns. Moreover, we theorize and empirically test that USMM spreads negative sentiment across social media users, due to their feeling of schadenfreude. In addition, we point to critical implications for marketing managers and examine mitigating factors that can help alleviate the negative effects of a firm's USMM.

Thursday, 1PM

TC03

Dupont - Lobby Level
Consumer Behavior: Decision Making II
Contributed Sessions

Session Chair
Ann Kronrod, University of Massachusetts, Lowell, Sudbury, MA

Thursday, 1PM

TC03

Dupont - Lobby Level
Consumer Behavior: Decision Making II
Contributed Sessions

1 Sources of State-Dependence in Brand Choices: Learning vs. Switching Costs

Nahyeon Bak[1], Daisoon Kim[2], [1]Amazon.com, Seattle, WA, [2]NC State University, Raleigh, NC, Contact: dkim29@ncsu.edu

Is consumers' size choice informative of studying brand choice dynamics in consumer-packaged goods? The authors build a learning model where uncertainty and selection lead consumers to choose a small size when they 1) are less experienced and/or 2) switch brand choices. In contrast, a switching cost model does not predict these relationships. These behavior implications allow for a new empirical strategy of identifying the primary source of state-dependence (learning vs. switching costs) with size choices. Our panel regression analysis applied to household-level scanner-panel data shows consumers' size growths are positively associated with experience and negatively associated with brand switching, which highlights the importance of learning in dynamic consumer behavior.

Thursday, 1PM

TC03

Dupont - Lobby Level
Consumer Behavior: Decision Making II
Contributed Sessions

2 How Does Required Effort Affect Persistence Intention in Exercise? the Role of Heuristic-Related Factors

Yi-Fen Liu, Chu-Ching Chiu, National Kaohsiung University of Science and Technology, Kaohsiung City, Taiwan. Contact: yifenliu@nkust.edu.tw

Many studies have shown a positive relationship between exercise enjoyment and exercise persistence. However, this research suggests that even negative feelings about exercise could contribute to persistence. It proposes that under some circumstances, people may have a heuristic that exercise requiring higher effort will produce better effectiveness; thus, exercise requiring higher effort will lead to greater persistence. This study investigates how the required effort of exercise affects exercise persistence intention and further understands the moderating role of individuals' heuristic propensity and causal sport knowledge. A one-factor, 2-level (required effort: high/low) scenario-based experiment was conducted. Participants' heuristic propensity and causal sport knowledge were measured using scales, and these factors' interaction was investigated. The results revealed that greater required effort is associated with stronger persistence

intention. In addition, heuristic propensity and causal sport knowledge moderate the effect of required effort on persistence intention. Higher required effort leads to higher (lower) persistence intention for those with higher (lower) heuristic propensity. Similarly, higher required effort leads to higher (lower) persistence intention for those with higher (lower) causal sport knowledge.

Thursday, 1PM

TC03

Dupont - Lobby Level
Consumer Behavior: Decision Making II
Contributed Sessions

3 Habit Formation and Financial Rewards Through Digital Fitness

Eunkyung An, Masakazu Ishihara, Raluca Ursu, New York University, New York, NY, Contact: ea1897@stern.nyu.edu

Forming good habits is difficult because people have to repeat good behavior while overcoming instant gratification. It can be easier to form good habits if they receive an immediate reward for the good behavior. Our paper focuses on cultivating exercise habits with the use of digital fitness. We study how people form their exercise habits by understanding what elements of digital fitness (i.e., type of fitness app category, financial incentives) affect people to form habits more easily and whether cross-category spillover effects exist. We investigate how COVID as an exogenous shock, including COVID waves and government restrictions, affects people's exercise decisions. We also examine how present-biased preferences influence forming exercise habits. We build a structural model to account for the present-biased preferences. We show how a change in the reward scheme influences their habit formation.

Thursday, 1PM

TC03

Dupont - Lobby Level
Consumer Behavior: Decision Making II
Contributed Sessions

4 How Can Language Enhance Future Financial Planning? a Good Question

Ann Kronrod, University of Massachusetts, Lowell, Lowell, MA, Contact: ann_kronrod@uml.edu

Despite the negative personal, economical and national implications of underfunded retirement accounts, the majority of people do not have sufficient money in these funds, or do not have such programs at all. Current efforts to enhance financial planning experience limited success. One reason for this challenge is that people devote little attention and cognitive effort to issues that occur far in the future, retirement being one. Addressing this issue, the current paper examines a way to increase the cognitive effort that people put into financial planning. Relying on psycholinguistic research, we test the suggestion that questions elicit greater cognitive effort, which evokes more concrete thinking, resulting in perceptions that retirement is closer in the future. This cognitive change causes enhanced financial planning for retirement. Six studies, conducted in the field and in the lab, test these predictions. The studies employ a psycholinguistic approach that involves measuring reaction time in lexical decision tasks, as well as behavioral outcomes related to financial planning for retirement. This research can inform managers about a cost-effective solution for a lingering problem, which may bring to significant national economic improvement.

Thursday, 1PM

TC04

Tuttle - Lobby Level
Advertising: Consumer Response II
Contributed Sessions

Session Chair
Shun-Yang Lee, Northeastern University, Boston, MA

Thursday, 1PM

TC04

Tuttle - Lobby Level
Advertising: Consumer Response II
Contributed Sessions

1 The Impact of Television Advertising Content on Sales

Pradeep Chintagunta[1], Fatemeh Gheshlaghpour[2], Nima Y. Jalali[3], Purushottam Papatla[4], [1]University of Chicago, Chicago, IL, [2]Booth School of Business, University of Chicago, Chicago, IL, [3]University of North Carolina

Charlotte, Charlotte, NC, [4]University of Wisconsin-Milwaukee, Milwaukee, WI, Contact: fgheshla@chicagobooth.edu

In this research, we examine the effect of television advertising content on sales of Consumer Packaged Goods (CPG) in different categories. We adopt the baseline model structure in Shapiro et al. [2021] and modify it to capture the heterogenous effects of adverting campaigns on sales in the first stage. We estimate the distribution of television advertising campaigns' elasticities within each brand for the top 280 CPG brands between 2015- 2019 and establish that advertising campaigns affect consumers purchasing behavior differently. Then we study the source of this diversity and propose a model that incorporates the role of advertising content into the analysis in the second stage. We use a novel data set on television advertisement content which contains measures for 57 different 'emotions' assessed by applying AI-based methods to survey responses.

Thursday, 1PM

TC04

Tuttle - Lobby Level

Advertising: Consumer Response II

Contributed Sessions

2 How the Zoom Effect in Dynamic Product Presentation Impacts Decision-Making Modes

Yiran (Eileen) Zhang[1], Lu Meng[2], [1]Sungkyunkwan University, Seoul, Korea, Republic of; [2]The Hong Kong Polytechnic University, Hong Kong, Hong Kong.

With the popularity of photographic techniques, many special effects have been applied in the dynamic presentation of product advertisements. Hence, enhancing the effect of product dynamic zooming presentation is critical for marketing practitioners and researchers. This study proposes an effective advertising strategy based on the adoption of an appropriate visual perspective in advertising design. We demonstrate that consumers will make decisions based on their feeling when watching zoom-in product presentations, and they will make decisions based on cognition when watching zoom-out product presentations. Perceptions from different consumer perspectives (self-immersed vs. self-distanced) mediate this effect. Four empirical studies provide consistent evidence in support of the proposed research hypotheses. The study's findings contribute to research on consumer feeling and cognition-based decisions and self-perspectives and suggest innovative visual strategies for marketing practitioners.

Thursday, 1PM

TC04

Tuttle - Lobby Level

Advertising: Consumer Response II

Contributed Sessions

3 How Metaphors Enhance Marketing Communication: The Case of Dry Eye Syndrome

Ralf Terlutter, Carina Rasse, Sandra Diehl, University of Klagenfurt, Klagenfurt, Austria. Contact: ralf.terlutter@aau.at

The effects of metaphors in health marketing communication about different diseases, such as cancer or depression, have been studied widely (e.g., Semino et. al. 2017; Landau et al. 2018). Based on Conceptual Metaphor Theory (Lakoff and Johnson 1980), we investigate the use and effects of metaphors in the communication about Dry Eye Syndrome, which has developed into one of the most prevalent eye diseases resulting from massive use of screen-based devices in work and private life (American Optometric Association 2020). Our research questions are: (1) Which metaphors are used by patients in their communication about dry eye syndrome? (2) Which metaphors are perceived as particularly helpful in the communication? (3) How does the use of metaphors differ across people? We follow a mixed-method design. First, thirty narratives of people suffering from dry eye syndrome are analyzed for the presence of metaphors. Using Conceptual Metaphor Theory, the identified metaphors are categorized (symptoms, treatments) and analyzed for differences across the participants (gender, age, communicative purpose). Second, we survey adults suffering from dry eye syndrome to test the effectiveness of the previously identified metaphors. The results of the study highlight which metaphors are effective for whom and for which communicative purpose. Eventually, we will propose ways for how the attention to metaphors, in particular to variations between different speakers in different communicative situations, may enhance marketing communication (e.g., one particular metaphor can help get someone's attention while another metaphor might help encourage people to take action).

References available upon request.

Thursday, 1PM

TC04

Tuttle - Lobby Level

Advertising: Consumer Response II

Contributed Sessions

4 Impact of Sponsored Listings on Awareness, Consideration and Choice

Kalyan C. Rallabandi, Tulane University, New Orleans, LA, Contact: krallabandi@tulane.edu

Sponsored listings are a form of digital advertisements that are used by online marketplaces to generate revenue. In this paper, I investigate the mechanism(s) behind these sponsored advertisements to assess the impact of sponsored listings along the consumer shopping and purchase process. I do this using a structural model of consumer sequential search and a novel data set from a leading online travel agent. Since online marketplaces return rank ordered lists in response to consumer searches, I assume that based on historical browsing, consumers form priors regarding the quality at each rank, i.e. prior perceived quality associated with the rank on the page. In response to the noisy signal of quality conveyed by sponsored ads, consumers are assumed to update their quality priors in a Bayesian fashion, i.e. Bayesian updating of prior perceived quality based on the sponsored status of the actual listing at any rank is applied. I find that sponsored listing induced rank change has a major impact on user awareness and that advertisers use sponsored listings for not just lift in the rank but also for prominent locations where consumer attention experiences spikes. Further, I find that advertising disclosure associated with sponsored listings has an impact, so that consumer consideration and choice probabilities are impacted at the top ranks of a page. However at ranks further down the page, I do not find evidence of sponsored advertisements impacting consumers' consideration sets or choices.

Thursday, 1PM

TC04

Tuttle - Lobby Level

Advertising: Consumer Response II

Contributed Sessions

5 A Field Study of Digital Out-Of-Home Advertising Dynamic Effects

Shun-Yang Lee, Yakov Bart, Koen Pauwels, Northeastern University, Boston, MA, Contact: sh.lee@northeastern.edu

Digital out-of-home (DOOH) advertising spending is expected to double this decade. However, current industry approaches to measuring its effectiveness are inadequate, and academic research in this domain is lacking. We fill this gap by conducting a field experiment on outdoor digital billboards in collaboration with a DOOH advertising agency. The exogenous timing of frequent rotations of digital ads allowed us to use the random arrival of consumers (as they passed the digital billboards) to create experimental variation, such that only consumers who happened to arrive during our focal ad display would be exposed, and hence serve as the treatment group; those who arrived when other ads were displayed serve as the control group. We found that the exposure to the digital billboard ad significantly increased and sped up subsequent website visitation, and the repeated exposures increased website visitation further. We also estimated dynamic wear-in and wear-out ad effectiveness, which suggests the need to optimize ad exposure intensity based on the ad response curve.

Thursday, 1PM

TC05

Gusman - Lobby Level

Machine Learning in Marketing and Economics

Special Session

Session Co-Chair

Zhenling Jiang, University of Pennsylvania, Philadelphia, PA

Thursday, 1PM

TC05

Gusman - Lobby Level

Machine Learning in Marketing and Economics

Special Session

Session Chair

Dennis Zhang, Washington University in St Louis, ST LOUIS, MO

Thursday, 1PM

TC05

Gusman - Lobby Level
Machine Learning in Marketing and Economics
Special Session

1 Referral Contagion: Downstream Benefits of Customer Referrals

Rachel Gershon[1], Zhenling Jiang[2], [1]UCSD, San Deigo, CA, [2]University of Pennsylvania, Philadelphia, PA, Contact: zhenling@wharton.upenn.edu

Word-of-mouth (WOM) has proven a valuable marketing tool for acquiring new customers and companies frequently invest in referral reward programs to incentivize their current customers to spread word-of-mouth. Previous work has documented that referred customers are more valuable than those who join through other venues. We propose a new, and rather critical, advantage of encouraging referrals - referrals are contagious. Using field data from 41.2 million customers, two preregistered lab experiments, and one field experiment, we find that referred customers make more referrals than non-referred customers. The difference in referrals persists after controlling for the level of match between the customer and firm, individual-level differences, and social network effects. To explain how referral contagion arises, we find that it is partially driven by customers' perception that referring is more socially appropriate if they were originally referred to the same product. In a field experiment, we show that reminding customers that they joined through a referral boosts referral behavior by 20-27%. These results advance our understanding of the social and psychological motives that contribute to referral decisions and illustrate that promoting referrals is substantially more valuable than previously estimated.

Thursday, 1PM

TC05

Gusman - Lobby Level
Machine Learning in Marketing and Economics
Special Session

2 Policy Learning with Adaptively Collected Data

Ruohan Zhan, Hong Kong University of Science and Technology, Clear Water Bay, Hong Kong. Contact: rhzhan@ust.hk

Learning optimal policies from historical data enables personalization for improved outcomes in a variety of domains. The growing policy learning literature focuses on settings with pre-specified treatment assignment policies. However, adaptive data collection is becoming increasingly common for allowing to progressively improve inferential efficiency and optimize operational performance over the course of the experiment. Yet adaptivity complicates the problem of learning an optimal policy ex post, for two reasons: first, samples are dependent, and second, an adaptive assignment rule may not assign each treatment to each type of individual sufficiently often. In this talk, we address these challenges. We propose an algorithm based on generalized augmented inverse propensity weighted (AIPW) estimators, which non-uniformly reweight the elements of a standard AIPW estimator to control worst-case estimation variance. We establish a finite-sample regret upper bound for our algorithm and complement it with a regret lower bound that quantifies the fundamental difficulty of policy learning with adaptive data. When equipped with the best weighting scheme, our algorithm achieves minimax rate optimal regret guarantees even with diminishing exploration. This is joint work with Zhimei Ren, Susan Athey, and Zhengyuan Zhou.

Thursday, 1PM

TC05

Gusman - Lobby Level
Machine Learning in Marketing and Economics
Special Session

3 Does Racial Diversity Increase Ad Effectiveness? Evidence from the U.S. Mortgage Market

Donggwan Kim, Washington University in St. Louis, St. Louis, MO, Contact: donggwan.kim@wustl.edu

In recent years, there has been an increasing awareness of the importance of diversity and minority representation in many areas of society, including business decisions. In this paper, we study how racial diversity in advertising, characterized by featuring more diverse models, affects the effectiveness of advertising in the mortgage market. To do so, we obtain a large dataset of TV advertising videos and spending for all lenders over a four-year period from 2018 to 2021. We then merge this data with individual-level mortgage refinancing data containing each borrower's race. Using this combined data, we quantify the impact of racial diversity in TV advertisements on consumers' lender choices in mortgage refinancing. To accomplish this, we propose a framework based on computer vision, representation learning, and causal inference techniques. Importantly, we orthogonalize the model's race from other audio and visual characteristics that may also affect advertising effectiveness and control for these high-dimensional features using double machine learning. Overall, we find that ads featuring minority models are more effective than ads without minority models, controlling for ad spending. The effect is particularly pronounced for minority borrowers but is still positive for White borrowers. The fact that the result holds for both groups suggests that the greater impact is not purely the result of homophily, but also has a component of either virtue signaling or grabbing attention from differentiated advertising. The findings of this paper have important implications for both marketing managers and policymakers. From a business perspective, featuring more minority models can result in increased advertising effectiveness. From a policy perspective, greater minority representation can bring important societal benefits. Given the well-established history of discrimination and bias against minority groups in the mortgage market, our results suggest featuring minority models in advertising can be an effective means of reaching minority consumers in this important market.

Thursday, 1PM

TC05

Gusman - Lobby Level
Machine Learning in Marketing and Economics
Special Session

4 Discovering "Product Gaps" in the Market Using Machine Learning

Alex Burnap[1], John R. Hauser[2], [1]Yale University, New Haven, CT, [2]MIT, Cambridge, MA

New products and product revisions are successful if they are innovative and satisfy customer demand, but they must be feasible to engineer and produce. Marketing science has developed a variety of methods to identify and prioritize customer needs, methods to identify product features that fulfill those needs, and methods to evaluate customer-needs' bundles in terms of sales or share relative to competition. But many of the suggested "products" are just not feasible. Identifying feasibility is particularly challenging when the number of product features is large and the binding engineering and production constraints are binding. A few papers have addressed these constraints effectively, but in relatively simple products. However, we need methods that scale well to complex products.We propose a machine-learning approach learn product feasibility directly from data on which product feature-bundles are feasible. This feasibility space is learned jointly with a demand space to identify "product gaps," that is, feature bundles that are innovative (do not yet exist), that are projected to have high choice shares, and which are feasible to engineer and produce. Specifically, we use deep regularized autoencoders to compress high-dimensional data on consumers and products into a lower-dimensional "joint space" embedding, while simultaneously learning both consumer demand and product feasibility in this embedding. Because the space is large, we develop a compatible search algorithm to prioritize gaps.We first demonstrate our approach on an established product in which consumer demand and product feasibility are known—a product that has already been optimized with methods that work well on "small problems." We next demonstrate that our approach scales by using empirical data on over 1,000,000 revealed purchases for a complex products. Consumers are represented by 900 characteristics and feasible products are represented by 1,200 characteristics. We successfully discover certain product gaps.

Thursday, 1PM

TC06

Marti - Lobby Level
Marketing Strategy: Marketing Finance I
Contributed Sessions

Session Chair
Hyeong-Tak Lee, University of Iowa

Thursday, 1PM

TC06

Marti - Lobby Level
Marketing Strategy: Marketing Finance I
Contributed Sessions

1 When is Competition Really Healthy? Analyzing the Impact of the Firm'S Competitive Situation on Unethical Firm Behavior

Lars Gemmer[1], Alexander Edeling[2], Marc Fischer[3], [1]University of Cologne, Cologne, Germany; [2]KU Leuven, Leuven, Belgium; [3]University of Cologne, Köln, Germany. Contact: gemmer@wiso.uni-koeln.de

There is ongoing debate about the role of market share and market share-based competition for firms' behavior and financial performance. We contribute to this discussion by analyzing the relationship between the specific competitive situation of a company and its unethical behavior. Based on a global sample of 2,777 companies and data from 11 years, we introduce new variables that reflect the competitive situation of a firm within one industry and identify which competitive constellations increase competitive pressure and force companies to act unethically. Information regarding three different factors are relevant to explain the unethical behavior of companies. These include the exact position of a company within an industry, the market-share based proximity of direct competitors, and dynamic changes in these constellations. We find that competitive pressure and the corresponding unethical behavior increases for companies with a higher market share. For example, if the company is one of the three largest companies in an industry, the amount of unethical behavior increases by 11.74%. If the company is then also the market leader, the unethical behavior increases by another 17.94%. With respect to the direct competition, we show that one additional percentage of market share distance to the next larger competitor relates to an 2.43% increase in unethical behavior per year. We also see that if the focal company falls further behind the next larger competitor over time, then the probability that it will behave unethically increases.Furthermore, we show how unethical behavior, in turn, affects the future competitive position and thus reveal the dynamics between both constructs. Although the initial goal of the ethical misconduct is likely to strengthen the competitive position, findings show that the market share in the next year decreases by 2.04% per each additional disclosed incidence of unethical behavior. Managers should be aware of this paradoxical relationship when developing competitive strategies and refrain from assuming that a market share orientation is infallible.

Thursday, 1PM

TC06

Marti - Lobby Level

Marketing Strategy: Marketing Finance I

Contributed Sessions

2 How Much Can Marketing Actually Influence? Decomposing the Variance of Financial Brand Values

Felix Anton Sklenarz[1], Alexander Himme[1], Marc Fischer[2], [1]Kühne Logistics University (KLU), Hamburg, Germany; [2]University of Cologne, Köln, Germany. Contact: alexander.himme@the-klu.org

Marketing is under increasing pressure to justify its actions. Financial brand values, quantifying the monetary worth of one of the main results of marketing activities, potentially provide a relevant tool to measure and communicate marketing's impact.However, high unexplained variance among the valuation providers and a general uncertainty surrounding the construct "financial brand value" lead to criticism by experts and a measurement gap among companies. A better understanding of the relationship between firm activities and financial brand values could increase faith in the necessity and importance of financial brand valuation.Using a unique database that includes more than 40,000 financial brand values of more than 4,600 brands in the period 1990-2021 that were obtained from 20 different brand-valuation methods, we apply hierarchical linear modeling to simultaneously estimate the relative importance of *time-level, intrinsic brand-level, industry/environmental-level, and valuator-level* factors that explain the variance in financial brand values. Further, we quantify the correlations of 18 variables with financial brand values. We find that over 50% of the variance of financial brand values is explained by firm actions, while around 25% of the variance is due to the applied valuation technique. We further show that the share of variance under the control of the company is increasing rather than decreasing over time. We derive a *generalizable advertising-financial brand value elasticity*. Additional longitudinal analyses support a long-term mindset when judging the success of brand-building measures.

Thursday, 1PM

TC06

Marti - Lobby Level

Marketing Strategy: Marketing Finance I

Contributed Sessions

3 Investigating the Competitive Effect of Product Recall on the Purchase of Extended Warranty

Hyeong-Tak Lee[1], Cem Ozturk[2], Sriram Venkataraman[3], [1]University of Iowa, Iowa City, IA, [2]University of South Carolina, Columbia, SC, [3]UNC-Chapel Hill, Chapel Hill, NC, Contact: hyeong-tak-lee@uiowa.edu

Firms announce product recalls and publicly admit to their products' defects when they discover safety issues that might endanger consumers. While prior research has shown how companies' major product recalls affect their competitors' promotional responses, relatively little is known about the competitive effects of product recalls on the sales of critical product add-ons, such as extended warranties. This study aims to address this void in the marketing literature by examining how competitors' extended warranty sales changed following a major product recall in the auto industry—where such product add-ons have become a critical source of profit for auto dealers. Our empirical analyses using quasi-experimental methods show a negative spillover effect of Toyota's product recall on competitors' extended warranty sales. We also explore the underlying mechanisms for this adverse halo effect by studying potential heterogeneity in spillover based on competitors' country of origin and the brand of consumers' trade-in vehicles, among others. Our findings 1) imply that the negative consequences of competitors' product recalls could extend beyond the sales in the recalled product category to add-on category and 2) shed light on which competitors are more susceptible to such adverse spillovers.

Thursday, 1PM

TC07

Merrick 1 - Lobby Level

Influencer Marketing Track: Special Session 3

Special Session

Session Co-Chair

Maximilian Beichert, Mannheim, Germany.

Thursday, 1PM

TC07

Merrick 1 - Lobby Level

Influencer Marketing Track: Special Session 3

Special Session

Session Chair

Andreas Lanz, HEC Paris, Paris, France.

Thursday, 1PM

TC07

Merrick 1 - Lobby Level

Influencer Marketing Track: Special Session 3

Special Session

1 Leveraging the Social Network Structure of Influencers to Understand and Predict User Engagement

Pankhuri Malhotra[1], Remi Daviet[2], [1]University of Oklahoma, Norman, OK, [2]University of Wisconsin-Madison, Madison, WI, Contact: pmal@ou.edu

As collaborations between brands and social media influencers become increasingly popular, predicting and understanding the capacity of an influencer to generate user engagement has garnered increasing attention from researchers. Not surprisingly, managers have been relying on follower-based statistics to identify individuals with potential to reach a vast number of users on social media. However, this approach may often direct managers to accounts with millions of followers accompanied with high recruiting costs. In this paper, we argue that the network structure of influencers is a useful measure for capturing an influencer's ability to generate engagement. Using Instagram data, we perform a deep-learning analysis on the social interaction network of influencers and show that the network structure alone explains a large share of the variations in user engagement, even outperforming traditionally used variables such as the number of followers in the case of comments. We also show that many insights can be obtained from the network structure. Notably, we find that high-performing influencers form elite sub-communities that may not be central to the larger social network. This study contributes to the emergent literature on the importance of social ties in the digital environment.

Thursday, 1PM

TC07

Merrick 1 - Lobby Level

Influencer Marketing Track: Special Session 3

Special Session

2 Social Media Video Engagement: How Content Similarity Drives Liking on Tiktok

Marc Bravin[1], Melanie Clegg[2], Reto Hofstetter[1], Jonah Berger[3], Marc Pouly[4], [1]University of Lucerne, Lucerne, Switzerland; [2]Vienna University of Economics and Business, Vienna, Austria; [3]University of PA - Wharton, Philadelphia, PA, [4]Lucerne University of Applied Sciences and Arts, Lucerne, Switzerland. Contact: marc.

bravin@hslu.ch

Videos are the most rapidly growing form of social media content, and content creators and brands are tasked to produce videos that maximize engagement. A novel and promising strategy is to follow trends by adapting already successful and engaging content patterns. However, in trend following, two strategies are possible: creating highly similar (more prototypical) content or deviating from the trend and producing more dissimilar (more atypical) content. This research investigates which strategy is more successful and how content prototypicality influences liking. We argue based on fluency theory that higher prototypicality increases liking of videos in an online video feed setting. To test this expectation, we collect a sample of 57,060 videos from 418 different dancing trends on TikTok. We develop an unsupervised machine learning algorithm to compute semantic representations of the videos and use them to determine the prototypicality of each video and several control variables. In a series of regression models, we demonstrate that prototypicality (versus atypicality) increases the number of likes a video receives. This effect depends on the level of trend exposure and dance difficulty (as a measure of memorability), such that the positive effect of prototypicality is more pronounced the more users have been exposed to the trend before and the more memorable the trend is. These results suggest that creators are better off closely following a trend, particularly when the trend involves memorable dances and consumers already know the trend well.

Thursday, 1PM

TC07

Merrick 1 - Lobby Level

Influencer Marketing Track: Special Session 3

Special Session

3 Influencer Distinctiveness: A Multi-Dimensional Construct for Influencer-Brand Congruence

Aman Soni[1], Christian Hughes[2], Vanitha Swaminathan[1], [1]University of Pittsburgh, Pittsburgh, PA, [2]University of Notre Dame, Notre Dame, IN

Firms face the strategic problem of selecting influencers to maximize engagement when designing influencer marketing campaigns. This paper investigates how brands can optimally select influencers for campaign partnerships based upon the fit, or congruency, between influencers and the brand. Also, the marketing literature is divided on the dominant theory as both optimal distinctiveness theory and match-up hypothesis predict different results in engagement. Moreover, the influencer-brand congruence is only explored as a unidimensional construct in the literature. Contrary to current industry practices, whereby influencers are selected that are the most similar to the brand, we use a framework based upon optimal distinctiveness theory to propose that there can in fact be too much congruency between influencer and brand, which reduces the influencer's effectiveness in engaging others. Using content analysis on a large dataset of more than 400,000 sponsored influencer and brand posts, we develop three dimensions to evaluate influencer-brand congruency: linguistic style matching, expertise, and personality, and we observe a curvilinear effect of overlap along these dimensions and engagement. Theoretically, our study helps in the resolution of underlying theory for explaining the effect of congruence on engagement. This research has implications for managers seeking to optimize influencer-brand partnerships to increase efficacy and to create a more strategic, theoretically-founded method of choosing social media influencers for brands.

Thursday, 1PM

TC07

Merrick 1 - Lobby Level

Influencer Marketing Track: Special Session 3

Special Session

4 Endorsement Portfolios of Social Media Influencers

Lisa Zäuner[1], Alexander Edeling[2], Simone Wies[1], Alexander Bleier[3], [1]Goethe University Frankfurt, Frankfurt am Main, Germany; [2]KU Leuven, Leuven, Belgium; [3]Frankfurt School of Finance & Management, Frankfurt am Main, Germany. Contact: a.bleier@fs.de

Brands increasingly rely on social media influencers to promote their products because consumers tend to perceive such endorsements as less commercial than brand ads. However, influencers can engage in various collaborations, for instance with multiple brands and across several product categories, which may result in users perceiving influencers' activities to be more commercial. As a result, such influencers' effectiveness to generate engagement with their sponsored content may suffer. This research aims to examine the relationship between two dimensions of influencers' endorsement portfolios (endorsed brands and endorsed product categories) and the effectiveness of influencer marketing activities. The results help influencers effectively manage their endorsement portfolios as well as brands determine which influencers to collaborate with.

Thursday, 1PM

TC08

Merrick 2 - Lobby Level
Digitization 3: Advertising and Search II
Special Session

Session Co-Chair
Giorgos Zervas, Boston University School of Management, Brookline, MA

Thursday, 1PM

TC08

Merrick 2 - Lobby Level
Digitization 3: Advertising and Search II
Special Session

Session Co-Chair
Pinar Yildirim, University of Pennsylvania, Philadelphia, PA

Thursday, 1PM

TC08

Merrick 2 - Lobby Level
Digitization 3: Advertising and Search II
Special Session

Session Chair
Ayelet Israeli, Harvard Business School, Boston, MA

Thursday, 1PM

TC08

Merrick 2 - Lobby Level
Digitization 3: Advertising and Search II
Special Session

1 Estimating the Effectiveness of Digital Advertising for Nonprofits and Charities
Nils Wernerfelt[1], Dean Karlan[2], Utsav Manjeer[1], [1]Meta, Menlo Park, CA, [2]Northwestern University, Evanston, IL
Digital advertising has emerged as a popular channel for charities and nonprofits to reach new supporters. However, there is little large-scale, generalizable evidence on how effective such advertising is for these use cases, including when and where it may be most effective. Here we report on a meta-analysis of several thousand charities and nonprofits where we were able to generate experimental estimates of causal effects. Our results provide generalizable estimates of advertising effectiveness for these establishments as well as further important descriptives for researchers and applied advertisers in this space.

Thursday, 1PM

TC08

Merrick 2 - Lobby Level
Digitization 3: Advertising and Search II
Special Session

2 A Multi-Cell Experimental Design to Recover Policy Relevant Treatment Effects, with an Application to Online Advertising
Caio Waisman[1], Brett R. Gordon[2], [1]Northwestern University, Evanston, IL, [2]Kellogg School of Management, Evanston, IL
Experiments are an important tool to measure the impacts of interventions. However, in experimental settings with one-sided noncompliance, extant empirical approaches may not produce the estimates a decision-maker needs to solve their problem. For example, these experimental designs are common in digital advertising settings, but they are uninformative of decisions regarding the extensive margin--how much should be spent or how many consumers should be reached with a campaign. We propose a solution that combines a novel multi-cell experimental design with modern estimation techniques that enables decision-makers to recover enough information to solve to this type of decision problems. Our design is straightforward to implement and does not require additional resources to be viable. Using data from advertising experiments at Facebook, we demonstrate that our approach outperforms standard techniques in recovering treatment effect parameters. We also consider a simple advertising reach decision problem. We show that our

design provides more and richer information than standard techniques, leading to an advertising reach decision that better approximates the optimal one.

Thursday, 1PM

TC08

Merrick 2 - Lobby Level

Digitization 3: Advertising and Search II

Special Session

3 Consumer Memory and Competitive Interference: The Case of Auto Insurance Advertising

Navdeep Sahni, Yifan Yang, Stanford University, Stanford, CA

We build a model of consumer decision making in which we explicitly model how the consumer recalls information from memory, based on findings in Cognitive Psychology. Our model predicts competitive interference: recalling one product makes it less likely that the consumer recalls another in the same category. To show the prevalence of this phenomenon and support our model, we compile data from a large-scale experiment in which a sample of US consumers are randomly exposed to an auto insurance company's banner ads. Merging this data with TV ad exposures and individual-level internet search for auto insurance, we find evidence supporting our model. Our data show that despite a large amount of other spending on auto insurance advertising, marginal ad banners do drive sizable incremental traffic to the advertisers and this effect is highest when competitors advertise. Based on our estimates, the marginal effect of ad banners disappears if all competitors stop advertising.

Thursday, 1PM

TC08

Merrick 2 - Lobby Level

Digitization 3: Advertising and Search II

Special Session

4 The Role of Advertisers and Platforms in Monetizing Misinformation: Descriptive and Experimental Evidence

Wajeeha Ahmad[1], Ananya Sen[2], Charles E. Eesley[1], Erik Brynjolfsson[3], [1]Stanford University, Stanford, CA, [2]Carnegie Mellon University, Pittsburgh, PA, [3]Massachusetts Institute of Technology, Cambridge, MA

We investigate how online misinformation is monetized by examining the role played by advertising companies and digital ad platforms in financing misinformation news outlets. We find that advertising on misinformation outlets is pervasive for companies across several industries, and that companies using digital platforms for advertising are substantially more likely to appear on misinformation outlets than those not using digital platforms. Using an incentive-compatible information provision experiment with a representative sample of the US population, we show that people exit, i.e. decrease their demand for a company's products or services upon learning about the company's practice of monetizing misinformation via advertising. This decrease in demand persists even when consumers learn about the substantial role played by digital platforms and other advertisers in monetizing misinformation, respectively. Consumers also voice concerns against both advertising companies and digital ad platforms for monetizing misinformation. Our second experiment with senior decision-makers and managers shows that they are ill-informed about their own company's role in monetizing misinformation through the use of digital ad platforms. However, those uncertain about their role in financing misinformation increase their demand for a platform-based solution to reduce monetizing misinformation upon receiving an information treatment. These results suggest that advertising companiesmay be financing misinformation inadvertently and upon access to the relevant information and the ability to choose ad platforms that reduce financing misinformation, decision-makers within companies are interested in reducing the monetization of misinformation.

Thursday, 1PM

TC08

Merrick 2 - Lobby Level

Digitization 3: Advertising and Search II

Special Session

5 Pay Transparency in Online Job Ads

Yu Zhao[1], Pinar Yildirim[2], Isaac Dinner[3], Joe Zucker[4], [1]The Wharton School, University of Pennsylvania, Philadelphia, PA, [2]University of Pennsylvania, Philadelphia, PA, [3]Indeed, Austin, TX, [4]Indeed, Inc, Austin, TX

Pay transparency laws, which first went into effect in Colorado and New York, mandate employers disclose relevant wage information - salary ranges - to applicants in job advertisements. These new regulations affect the information environment in online labor markets, but how do they impact the posted wages, effectiveness of job ads, and the search outcomes? In this paper, utilizing a propriety data set from a major US job platform, we document the effects of the Colorado and the New York City wage transparency regulations. To address the unobserved heterogeneity across states / cities with different policy status, we apply synthetic control methods. Reduced-form estimates indicate that, following the policy, employers disclosed wider wage ranges in job ads, possibly reducing the informativeness of ads. Analysis also indicates that changes in posted wage ranges are heterogeneous across jobs with different demographic compositions. Linking job ads to demographic composition data from the Bureau of Labor Statistics, we investigate the heterogeneous policy effects across occupations with different minority participation rates. Our findings are consistent with the hypothesis that pre-policy, strategic disclosure of information in these job advertisements were a means to maintaining bargaining power of the employers.

Thursday, 1PM

TC09

Grove - Lobby Level
AI: Applications III
Contributed Sessions

Session Chair
Shunyuan Zhang, Harvard Business School, Boston, MA

Thursday, 1PM

TC09

Grove - Lobby Level
AI: Applications III
Contributed Sessions

1 Whose Fault is It? Negative Consumer Experience with Ai-Enabled Technology
Irene Ho[1], Ying Ho[2], Lancy Mac[2], Sarah Xiao[3], [1]Chinese University of Hong Kong, Hong Kong, China; [2]University of Macau, Macau, China; [3]Durham University, Durham, United Kingdom. Contact: yingho@um.edu.mo
Artificial intelligence (AI) technology has significantly altered the servicescape enabling more timely and efficient customer services. Yet, people may at times have bad experience with AI-enabled technology and thus results in negative consumer behavior. This study seeks to explicate the impact of negative consumer experience with AI-enabled technology on negative word-of-mouth (NWOM), patronage reduction as well as loyalty intention by introducing the concept of blame attribution. It is argued that users may attribute their negative AI experience to the company or to themselves or both, and this will have a significant impact on how they react to this negative experience. An online survey was conducted with 299 consumers who have previous negative usage experience with AI-enabled technology. Results show that negative experience stimulates external attribution (blame the company) but reduces internal attribution (blame self), and both in turn leads to NWOM and patronage reduction but not loyalty intention. In other words, when the negative experience with AI-technology intensifies, consumers will blame the company more but will reduce their blame on themselves. Such attribution will make them bad-mouth the company and reduce their patronage in the future. This highlights that internal and external attributions of blame are not mutually exclusive, such that consumers can experience both in their interaction with AI-enabled technology in the service context. We also found that consumers' negative AI usage experience have a direct and negative impact on loyalty intention, thus reinforcing the important and direct role of AI interaction experience in loyalty intention.

Thursday, 1PM

TC09

Grove - Lobby Level
AI: Applications III
Contributed Sessions

2 Seeking Social Robot Companionship: Identifying and Overcoming Associated Social Stigma
Iqbal Ahmed[1], Dipankar Chakravarti[2], [1]Virginia Tech, Blacksburg, VA, [2]Virginia Tech, Ellicott City, MD, Contact: iqbaluahmed83@vt.edu
Forming and maintaining meaningful social relationships requires a social skill set (e.g., personality traits, diplomacy and loyalty), knowledge of social norms as well as shared values, interests, personal and professional goals. People possess these skills to different degrees and chronic deficiencies in social competence may lead to social

exclusion. Other individuals, whom we term "social excluders," have social preferences whereby they actively avoid social interactions.

As we have shown elsewhere (Ahmed and Chakravarti, 2022), these social groups are similar in that they are low on social interactions, but have different dispositions towards the experience of loneliness. For the socially excluded, loneliness reflects a gap between the desired nature/quality of connections vs. what is actually in place. This gap has negative psychological and physiological effects on well-being (Hawkley & Cacioppo, 2010). However, social excluders, by contrast may avoid general human companionship and feel comfortable only with specific qualities of interactions.

AI technology has stimulated the development of "social robots" that allow companionship interactions that may compensate for undesired deficiencies in human companionship (excludeds) or qualitatively match the companionship preferences of the excluders. We find that the socially excluded versus social excluders have different preferences for both physical features and engagement capabilities of social robots. We explore these differences and identify how individuals in these social categories may benefit from social robot companionship.

Our research also identifies anticipated stigma as an inhibitor to seeking social robot companionship. The fear is that such companionship seekers may be perceived as having impairments that affect competence. We examine if exposure to such technology helps overcome such fears and identify differences in the factors that enable the socially excluded and social excluders embrace advantages and overcome the anticipated stigma of seeking social robot companionship.

Thursday, 1PM

TC09

Grove - Lobby Level

AI: Applications III

Contributed Sessions

3 Recommending Sustainable Gifts: Ai is Better at Confirming Whilst Human is Better at Persuading

Nan Liu[1], Hongwei He[2], [1]Jinan University, Guangzhou, China; [2]University of Manchester, Manchester, United Kingdom.

People spend a considerable amount on purchasing gifts, particularly during festival seasons and special occasions. Driven by the grand sustainability agenda pledged by numerous companies in the world and increasing popularity of purchasing sustainable gifts by consumers, brands are investing progressively in sustainable gift products. However, it is surprising that academic research on sustainable consumer behavior hitherto largely ignores sustainable gift purchase. The increasing prevalence of AI applications suggests that firms can promote sustainable gift purchase through AI recommendation. This is potentially effective as social influence plays an important role in consumer sustainable decision making. The present study aims to address this important research gap. Through seven studies, we found that AI recommendation can be indeed more effective than human recommendation, but only when consumer prior belief on sustainable gifting is high. When prior belief is low, on the contrary, human recommendation is more effective. These results suggest that from a social influence perspective, AI is better than human in confirmation, whilst human is better in persuasion. We also investigated the boundary effect of social norm confirmation and algorithm anthropomorph, and found that the effect of AI recommendation weakened when providing social norm confirmation and when AI become more humanlike. Our findings contribute to both AI recommendation and sustainable gifting literature and have important managerial implications to promote sustainable gifting.

Thursday, 1PM

TC09

Grove - Lobby Level

AI: Applications III

Contributed Sessions

4 Creating a Happy Employee: Impact of Ai Adoption on Customer Service Agents

Shunyuan Zhang[1], Das Narayandas[2], [1]Harvard Business School, Boston, MA, [2]Harvard University, Boston, MA, Contact: szhang@hbs.edu

We examine how AI affected the performance and sentiment of customer service agents. Collaborating with a meal delivery company, we conducted a randomized field experiment which exploited exogenous variation in AI adoption. We report a positive effect of AI on the effectiveness of customer-agent interactions: agents completed more conversations per day, responded to customer messages faster, and achieved more improvement in customer sentiment. The benefits were larger for agents with shorter tenure (i.e., less experience). We also found that AI improved the self-reported sentiment of agents who worked in only the chat channel (especially those with shorter tenure and poorer performance, perhaps because AI made the work easier). Yet, AI hurt the sentiment of agents who worked in both the chat and non-chat channels—a negative spillover as a result of AI shifting the reference point. That is, the agents' experience of working in non-chat channels possibly did not fulfill their expectations developed in the AI-assisted chat channel. Also, AI increased the likelihood of neutral-to-positive agent sentiment but reduced the likelihood of very positive sentiment, perhaps because AI prevented agents from feeling deeply fulfilled in their jobs. Our results support the use of AI for onboarding new hires and mitigating agent attrition. Managers should anticipate complex psychological consequences (alongside economic benefits) and be cautious of spillover effects among employees with a mix of experiences with and without AI.

Thursday, 1PM

TC10

Oxford - Level 2
Digital Marketing: E-sports
Contributed Sessions

Session Chair
Peng Liu, 1</sup

Thursday, 1PM

TC10

Oxford - Level 2
Digital Marketing: E-sports
Contributed Sessions

1 Strategizing in Complex Environments: Empirical Evidence from Competitive E-Sports

Shin Oblander, Columbia University, New York, NY, Contact: eoblander23@gsb.columbia.edu

Video game developers and competitive leagues are interested in keeping a game engaging for players and spectators to ensure the long-term success of a game franchise. This is often achieved by adjusting game rules to maintain balanced and diverse gameplay. Understanding how players strategize and how the distribution of strategies used in gameplay (colloquially known as the "metagame") evolves in response to rule changes is therefore critically important for these entities. More broadly, e-sports (competitive video games) provide a compelling empirical context to study how decision-makers approach complex decisions in evolving environments.

I empirically study player learning and strategy formulation in a competitive video game league of Pokemon, a popular media franchise. I apply representation learning methods to characterize the descriptive and normative aspects of the complex strategy space, analyzing the behavioral patterns driving strategy formation and the effects these patterns have on the evolution of the metagame (aggregate distribution of strategies). Preliminary results show that the metagame evolves substantially over time and does not appear to achieve a stable equilibrium; in response to the external shock of a rule change, players concentrate on a smaller set of strategies at first, then begin to explore more diverse strategies. Players respond strongly to performance outcomes, tending to imitate popular strategies in response to poor performance and exploring atypical strategies in response to good performance, despite atypical strategies tending to perform poorly. Low-skill players are particularly prone to exploring atypical strategies after positive performance, which may suggest an "overconfidence" effect.

Thursday, 1PM

TC10

Oxford - Level 2
Digital Marketing: E-sports
Contributed Sessions

2 The Role of Experiences in Digital Media Consumption

Bruno H. Castelo Branco[1], Puneet Manchanda[2], [1]University of Michigan, Ann Arbor, MI, [2]University of Michigan, Ann Arbor, MI, Contact: brunocb@umich.edu

High levels of digital media consumption and screen time have become prevalent in contemporary life, causing concern among policymakers due to negative impacts on physical and mental health. The scenario becomes more worrisome when we consider claims that tech companies may be trying to exploit vulnerabilities in consumers' psychology to maintain engagement. We investigate this issue by focusing on video games, one of the most popular types of digital media. First, we build a detailed data set that allows us to identify key in-game experiences that keep players engaged. Second, we develop a dynamic model in which players decide how long to play each day while taking into account the leisure time they have left to play again in the future. When they play, they may encounter in-game experiences that cause temporary myopia and lead them to play longer than they had initially planned. Our model is motivated by theories of dual process decision-making, where people's decisions are the result of both deliberation and impulse. We study the consequences of this mechanism for players, game developers, and distribution platforms.

Thursday, 1PM

TC10

Oxford - Level 2
Digital Marketing: E-sports
Contributed Sessions

3 The Effect of Symbolic Rewards on Players' Engagement in Video Games

Semyon Tabanakov, The University of Chicago Booth School of Business, Chicago, IL, Contact: stabanak@chicagobooth.edu

We study intrinsic motivation in the context of video games using a large-scale dataset from a mobile puzzle game. In the game, rewards ("stars") are purely symbolic in that they play no functional role in helping gamers make subsequent progress in the game. They are presented to players based on sharp game score cutoffs. We estimate the effect of these rewards on players' engagement using exogenous variation in rewards from the regression discontinuity design and saturated OLS specifications. Both specifications show that the probability of playing another game increases by 1.4%-2.5% after receiving the highest symbolic reward. We further explore the treatment effect heterogeneity using continuous characteristics of players. The effect of rewards on engagement decreases with the recent performance of players - for players who did particularly well recently we cannot reject the null hypothesis that rewards have no impact on future engagement. The effect of symbolic rewards also decreases in player's ability. Results are robust to the inclusion of stage and user fixed-effects and various user covariates. We find no relationship between the effect of rewards and the level of effort, stage difficulty or player's learning rate.Taken together, these results allow us to test mechanisms behind the effect of symbolic rewards on engagement and show how they can be optimized to increase game engagement.

Thursday, 1PM

TC10

Oxford - Level 2
Digital Marketing: E-sports
Contributed Sessions

4 Reputation Building on Online Platforms: Evidence from Twitch

Masakazu Ishihara[1], Baek Jung Kim[2], Qihong Liu[3], [1]New York University, New York, NY, [2]University of British Columbia, Vancouver, BC, Canada; [3]University of Oklahoma, Norman, OK, Contact: baekjung.kim@sauder.ubc.ca

Despite the popularity of online video platforms (e.g., YouTube, Instagram live, and Twitch), becoming a successful content creator is more challenging because of the difficulty in building a reputation and excessive competition. Remarkably, survival on platforms is even harder for new entrants. In this paper, we study online content creators' reputation-building and succeeding strategies in the context of a game live-streaming platform, Twitch. The objective is to understand entrants' reputation-building strategies and their associated viewers' loyalty. Entrants who start streaming popular games may have some initial viewers, but they compete with popular incumbents who already stream popular games. In contrast, entrants starting with non-popular games may have less competition, yet it is challenging to have enough initial viewers, which is necessary to build a reputation. Moreover, deciding to change streaming games is difficult as it is ambiguous whether viewers are loyal to streamers or games. Using data scrapped from Twitch between 2017 and 2018, we found that new streamers choose popular games as their first streaming choice and continue streaming the popular ones over time (rather than switching to different games). This pattern differs from the previous literature that studied the "cold-start" problem, which predicts that streamers will likely start with niche content and then diversify later. To further explore streamers' reputation-building and survival strategies, we build a structural model, considering streamers' choice of games and streaming hours over time. The results potentially provide managerial implications for content creators and online video platforms.

Thursday, 1PM

TC10

Oxford - Level 2
Digital Marketing: E-sports
Contributed Sessions

5 **Social Status-Seeking in Online Game Communityand Its Effects on User Engagement and Purchases**

Peng Liu[1], Tat Y. Chan[2], Hai Che[3], [1]santa clara university, Santa Clara, CA, [2]Washington University, St. Louis, MO, [3]UC Riverside, Torrance, CA, Contact: pliu2@scu.edu

We study the motivation for pursuing higher social status among players in an online game community, and how such motivation influences players' decisions of game engagement and purchases. We develop and estimate a dynamic model that captures how a player makes decisions and how those decisions impact future promotions of the guild rank, which is a proxy for the social status of the players. Results show that attaining a higher guild rank significantly increases a player's utility, suggesting that social status-seeking motivation exists in the community. Furthermore, game item purchases and play time help increase the chance of future promotion, which will motivate the player to spend more and play more. Such motivation leads to a 12.86% increase in players' game time and an 11.44% increase in the company's revenue. We then use counterfactuals to explore how the company can use the social status-seeking motivation to increase its revenue and players' engagement by giving away a free "utilitarian" game item. These findings have substantive implications for game companies offering players similar types of social functions.

Thursday, 1PM

TC12

Trinity - Level 2

Branding: Consumer Behavior

Contributed Sessions

Session Chair

Umut A. Guler, Koc University, Istanbul, Turkey.

Thursday, 1PM

TC12

Trinity - Level 2

Branding: Consumer Behavior

Contributed Sessions

1 **Brand Positioning 2.0: A Triangulation of Brands' Vision, Communication, and Consumers' Perception**

Georgia Liadeli[1], Francesca Sotgiu[2], Peeter Verlegh[1], [1]Vrije Universiteit Amsterdam, Amsterdam, Netherlands; [2]Vrije Universiteit Amsterdam, Amsterdam, Netherlands. Contact: g.liadeli@vu.nl

Today, brands are turning to social media to reinforce, build or extend their brand positioning and interact with their customers. Many brands rely on new positioning dimensions, moving away from a customer or product focus (e.g., service or price), to embrace an active role in their community (e.g., sustainability or inclusivity). While some brands use these new dimensions in their mission statements to reflect this attention to their ecosystem (from employees to communities), other brands take an active role in educating consumers on these topics via social media. In this paper, we aim to contribute in four ways: First, we provide an overview of brand positioning dimensions, identifying new emerging ones. While they have been widely discussed in the literature, a comprehensive overview is missing. Second, while the marketing literature advocates the benefits of integrated marketing strategies, brands do not necessarily communicate only their core positioning, but rely on social media to stretch their brand along new directions. This may cause a perception of misalignment. This paper provides first insights of the impact of such misalignment so that brands can avoid firestorms. Our results indicate that not always such a misalignment is counterproductive, as it can even lead to higher engagement. Third, we triangulate the (mis) alignment between the brand positioning advocated by brands in their missions and the actual social media content, with consumers' perceptions of the brand. This allows firms to have a better overview of their projected positioning as well as that of the competition. Finally, we contribute to the growing body of dictionaries by fine tuning existing ones and adding new custom dictionaries.

Thursday, 1PM

TC12

Trinity - Level 2

Branding: Consumer Behavior

Contributed Sessions

2 **Local Market Reaction to Brand Acquisitions: Evidence from the Craft Beer Industry**

Umut A. Guler[1], Kanishka Misra[2], Vishal Singh[3], [1]Koc University, Istanbul, Turkey; [2]Ross School of Business, Ann

Arbor, MI, [3]Stern School of Business, New York University, New York, NY, Contact: umutguler@ku.edu.tr

A large stream of literature shows that the emotional bond between consumer and brand can induce a sense of psychological ownership, and shocks to this relationship such as brand repositioning or acquisitions can induce a negative consumer reaction. This article provides a large scale empirical study on such brand "transgressions" in the context of acquisition of local beer breweries by large conglomerates. Our analysis covering 40 brand acquisitions shows a strong negative reaction to acquisitions in social media. More importantly, the negative sentiment translates to a significant reduction in demand in the local market post acquisition. Across different specifications, we estimate that this decline is between 20% and 30%. This represents a significant negative shock to the acquired brand, as the local region accounts for more than one-fifth of brand sales on average, even in the long run. The decline begins immediately following the acquisition, and manifests in both sales and product ratings. On the flip side, acquisition helps the local brand in markets close to the acquirer's facilities, with improved distribution and higher sales. Theoretical and managerial implications of our findings are discussed.

Thursday, 1PM

TC13

Escorial - Level 2

Social Media And Digital Platforms

Special Session

Session Co-Chair

Sridhar Narayanan, Stanford University, Stanford, CA

Thursday, 1PM

TC13

Escorial - Level 2

Social Media And Digital Platforms

Special Session

Session Chair

Venkatesh Shankar, Texas A&M University, College Station, TX

Thursday, 1PM

TC13

Escorial - Level 2

Social Media And Digital Platforms

Special Session

1 Content Creation on Social Media Platforms: The Role of Negative Peer Feedback

Varad Deolankar, Jessica Fong, S. Sriram, University of Michigan, Ann Arbor, MI

Social media platforms rely heavily on their users for the supply of content, which in turn, is important for driving engagement from other users. In recent years, user generated content (UGC) on social media platforms has received increased scrutiny for creating a polarizing environment wherein users post extreme opinions and/or receive negative backlash from dissenters. In this paper, we ask how receiving negative peer feedback affects a user's subsequent posting behavior. In particular, we consider how negative feedback impacts two aspects of posting behavior: (a) willingness to post (i.e., incidence) and (b) the extremeness of these subsequent posts (i.e., intensity). We perform our empirical analysis using data from Reddit, a popular social discussion platform. We find that receiving negative peer feedback increases a user's subsequent posting activity. In addition, we find that receiving negative peer feedback is associated with users moderating the intensity of the initial post, i.e., when the initial opinion is extreme, users reduce the intensity of their subsequent opinions upon receiving negative feedback. This finding suggests that negative peer feedback can serve as the whip that regulates the polarization of opinions by encouraging users to moderate their tone. We discuss the implications of our findings for using the design of feedback systems as a tool for encouraging discussions and thwarting polarization of opinions on social media platforms.

Thursday, 1PM

TC13

Escorial - Level 2

Social Media And Digital Platforms

Special Session

2 How Creative Content Affects Audience Retention: The Case of Video Ads on Facebook

Prasad Vana[1], Lakshmi Vana[2], Scott Andrew Neslin[3],

[1]Dartmouth College, Hanover, NH, [2]Dartmouth College Tuck School of Business, Hanover, NH, [3]Tuck School of Business at Dartmouth, Hanover, NH

This research focuses on video ads posted on Facebook. Even though video ads are one of the fastest growing and popular forms of digital advertising, there is little understanding on how the content of a video ad can retain consumers' attention throughout the duration of the video. The key research question here is how the creative content of video ads affects how long users watch the video ad. The data consists of 247 video ads posted by a movie production firm on Facebook for about 50 movies during 2017-2018. The data also includes aggregate information provided by Facebook (to the firm) about how long users watch each video. Past literature is used to first identify 16 themes to categorize videos in general. Expert judges are next asked to watch these videos and rate them regarding the presence of these themes at four regular intervals within the videos. Computer vision algorithms are also used to complement the data about the content of the videos. Audience retention within a video is modelled using a Logit-Normal-Geometric (LNG) distribution with covariates. The results indicate that the presence of creative attributes such as action and romance play a substantial role in retaining audience through the duration of a video. Application of the model to out-of-sample videos indicates that adding covariates related to the content of the video significantly improves the predictability of audience retention. These results are important because designing and posting video ads are an expensive venture and our findings inform managers on designing the content of the video ad. Additionally, "how long users watch a video" is shown to be an important yet overlooked performance measure in the context of video advertising.

Thursday, 1PM

TC13

Escorial - Level 2

Social Media And Digital Platforms

Special Session

3 The Consumption of Serial Media Products and Optimal Release Strategy

Clarice Zhao[1], Nitin Mehta[2], Mengze Shi[3], [1]McGill University, Toronto, ON, Canada; [2]University of Toronto, Toronto, ON, Canada; [3]Hong Kong University of Science and Technology, Kowloon, Hong Kong.

A digital publishing platform may choose to release serialized media content, such as chapters of a book or episodes of a drama, either simultaneously (all at once) or sequentially (over time). These alternative release strategies lead to different platform visiting and content consumption behavior: whereas a simultaneous release may induce binge consumption, a sequential release may generate increased platform visits and explorations of other books. To disentangle these opposing effects, we develop a structural model of consumers' serial purchases. We then estimate the model using data from an online book platform in China. Our estimation results confirm the hypothesized binge consumption effect of a faster release and the product exploration effect of a slower release. We also perform a counterfactual analysis to assess other forms of serial release strategies. We find that compared with an existing sequential release strategy, the platform is worse off with a simultaneous release strategy, but it could improve its sales revenue by implementing an optimized hybrid release strategy in which it releases some of a book's chapters simultaneously and the rest sequentially. Interestingly, a properly designed hybrid release can turn the binge consumption and product exploration effects into complementary forces.

Thursday, 1PM

TC13

Escorial - Level 2

Social Media And Digital Platforms

Special Session

4 Nft Digital Artwork Pricing Using Image Analytics and Auction Models

Chi Zhang[1], Venky Shankar[1], Xiaohui Zhang[2], [1]Texas A&M University, College Station, TX, [2]Arizona State University, Tempe, AZ

Non-fungible tokens (NFTs) have been leveraged by many online platforms such as OpenSea and Foundation to track the copyright ownership of digital artworks. Digital artworks are traded as NFTs on these platforms using price auctions that have grown dramatically in recent years. Valuation of digital artwork is key to realized prices. Despite the surging interest in NFTs from both the demand and supply sides, both sellers and buyers of NFTs find the valuation of NFT digital artworks challenging due to the subjective nature of digital artwork appraisal, heterogeneity in NFT digital artworks, and lack of price history. However, research on the valuation and pricing of NFTs is sparse. Prior research has studied NFT collectibles such as CrpytoKitties and

Cryptopunks released by organizations and companies. We expand prior research to the valuation and pricing of NFT digital artworks created by individual artists. We assemble a large dataset from the Foundation platform that comprises 116,730 NFT digital artworks, 49,775 NFT auctions, and 107,125 bids during January 2021-January 2022. We apply the state-of-the-art computer vision model to extract a large set of the visual features of the NFTs from their images and examine a comprehensive set of price determinants of NFT digital artworks. We use an ascending price auction model and a partial identification approach to recover the valuation distribution of the bidders. We show that three market segments may exist in the NFT digital artwork market. Bidders from different segments have different willingness-to-pay and preferences over NFT digital artworks. Our proposed optimal pricing strategy guides sellers and the platform on optimally setting the reserve price for NFTs. Our counterfactual analysis shows that the average list price of NFTs on the platform for the first segment is suboptimal. A 25-33% reduction of the average list price would lead to a 0.9%-71.3% gain in expected profits and a 34.3%-64.5% decrease in the probability of a digital artwork failing to sell. Our approach and results have actionable implications for sellers, buyers, and platforms.

Thursday, 1PM

TC14

Alhambra - Level 2
Game Theory: General I
Contributed Sessions

Session Chair
Sumitro Banerjee, Grenoble Ecole de Management, Grenoble, France.

Thursday, 1PM

TC14

Alhambra - Level 2
Game Theory: General I
Contributed Sessions

1 Unpacking Trust Governance of Customer-Firm Encounters
Zuhui Xiao[1], George John[2], [1]University of Wisconsin-Milwaukee, Milwaukee, WI, [2]University of Minnesota, Minneapolis, MN, Contact: zuhuix@uwm.edu
Service encounters comprise an important class of person-firm (P2F) exchanges where a person interacts engages with a firm to obtain some service for a fee. The firm deploys its employees to execute the service per its brand promise. Contracts are difficult to specify given the characteristically non-contractual elements of brand promises, and difficult to enforce given vast resource differentials across the parties. The extant literature suggests that P2F interactions are governed by social norms. Anticipated guilt over violating normative standards of behavior pressures the firm to uphold its promises; this overcomes the person's cautiousness from anticipated disappointment. We model normative obligations arising from the parties' diffuse or partially shared beliefs as demarcating a range of applicable normative reference standards. Rational expectations-based prospect theory yields new insights, and implications for engineering more trust are discussed.

Thursday, 1PM

TC14

Alhambra - Level 2
Game Theory: General I
Contributed Sessions

2 Patent Assertion, Defense, and the Proliferation of Lawsuits
Sumitro Banerjee[1], David A. Soberman[2], [1]Grenoble Ecole de Management, Grenoble, France; [2]University of Toronto, Toronto, ON, Canada. Contact: sumitro.banerjee@grenoble-em.com
We model repeated interaction between a long-lived player, manufacturer or technology user (TU) that sells products, facing infringement claims from a sequence of short-lived Patent assertion entities (PAEs). In each period the TU privately observes Nature's draw of the market value of the patent. Having observed the history, each PAE decides whether to sue and effort when the TU rejects the offer. We show that in a perfect public equilibrium (PPE) of an infinitely repeated extensive form game, to prevent transmission of private information about the value of the patent arising from selling products in markets, the TU rejects all claims to build a tough reputation which leads to litigation but the PAE, being uninformed, allocates lower litigation effort. The result provides a new explanation for the increase in litigation involving PAEs.

Thursday, 1PM

TC15

Michaelangelo - Level 2

CRM: Customer Journey and CLV I

Contributed Sessions

Session Chair

Rodrigo Heldt, Gravataí, Brazil.

Thursday, 1PM

TC15

Michaelangelo - Level 2

CRM: Customer Journey and CLV I

Contributed Sessions

1 Multimodal Mobile Marketing in Building Customer Community: Reinvigorate Sms Marketing via Pre-Phone Call

Ka Wing Chan[1], Xincheng Ma[2], William Gu[1], Felix Septianto[3], Huan Liu[4], Junbum Kwon[1], [1]University of New South Wales, Sydney, Australia; [2]University of Chinese Academy of Sciences, Beijing, China; [3]University of Queensland, Brisbane, Australia; [4]Nankai University, Tianjin, China. Contact: kawing.chan2@student.unsw.edu.au

Mobile marketing is emerging as a significant trend in relationship marketing. However, Short Message Service (SMS) as one of the mobile marketing tools, it has been criticized for its low respond rate and perceived as spam by customers, resulting in limited marketing value. While brands and marketers are struggling to efficiently leverage SMS marketing, this research proposes a multimodal campaign of the SMS by incorporating a pre-phone call before sending the SMS.

By conducting a field experiment that involved 90,682 existing customers in one of the biggest mobile commerce platforms, we found that multimodal (vs. only SMS) campaign significantly increase customers' acceptance rate to SMS invitation messages in joining brand's social media consumer communities. Furthermore, we identify the moderating roles of the message content types (informational or emotional) in both call and SMS in relation to the effects of multimodal campaign on consumers' community building. Overall, the findings of this research extend the knowledge on how to improve SMS marketing and offer a more nuanced understanding of multimodal mobile campaigns. Specifically, how brands can reinvigorate SMS marketing via pre-phone calls to build customer communities.

Thursday, 1PM

TC15

Michaelangelo - Level 2

CRM: Customer Journey and CLV I

Contributed Sessions

2 Deep Learning Methods for Customer Base Analysis: Evidence from 1,000 Companies

Kyeongbin Kim[1], Daniel McCarthy[2], Dokyun 'DK' Lee[3], [1]Emory University, Atlanta, GA, [2]Goizueta Business School, Emory University, Atlanta, GA, [3]Questrom School of Business - Boston University, Boston, MA, Contact: kyeongbin.kim@emory.edu

A canonical problem within the empirical CRM literature is to predict future customer purchase activity using historical behavioral data, with Customer-Based Corporate Valuation (CBCV) generalizing this problem across behaviors and customers to revenue at the overall company level. However, extant CRM/CBCV literature has assumed relatively simple parametric models suitable to the small-sized highly aggregated customer data, with highly limited coverage of cohorts and companies. Our work aims to address these gaps using novel large-scale granular data for a panel representing 3% of credit and debit transactions in the USA. Through a one-of-a-kind meta-analysis, we show that modern time series deep learning methods (e.g. Transformer, Temporal Fusion Transformer (TFT)), when customized for CRM settings, robustly outperform benchmark models in CBCV settings over short and long time horizons, over whole 1,000 companies. By MAPE, the Transformer method reduces error in the holdout period by 35% compared to the next best model in customer acquisitions, 36% in repeat orders per customer, 2% in average order value, and 32% in total sales. We also evaluate the absolute and relative performance of all models as a function of contextual factors such as seasonality, clumpiness, and length of the study period. We expect the adoption of these methods by company insiders, investors, and other stakeholders for whom corporate valuation is relevant offer four benefits: (1) more accurate company-wide revenue predictions; (2) better understanding of the unit economic health of companies (e.g., CLV); (3) improved marketing accountability; (4) better communication between the marketing and finance departments.

Thursday, 1PM

TC15

Michaelangelo - Level 2
CRM: Customer Journey and CLV I
Contributed Sessions

3 Increasing Blood Donor Retention with past Donation use Appeals: The Mediating Role of Perceived Relationship Investment and Relationship Quality

Besarta Veseli[1], Edlira Shehu[2], Michel Clement[1], Karen Page Winterich[3], [1]University of Hamburg, Hamburg, Germany; [2]University of Groningen, Groningen, Netherlands; [3]Pennsylvania State University, University Park, PA, Contact: besarta.veseli@uni-hamburg.de

Blood donation services along with other nonprofit services seek new strategies to improve donor relationships. In this study, we propose a novel strategy that utilizes appeals with feedback on the use of a blood donor's past donation. We theorize this feedback increases the perceived relationship investment and subsequently the quality of the relationship with the nonprofit service, thereby increasing donor loyalty and redonations. An online experiment shows the positive effect of past donation use appeals on donation intentions, and the transmission via perceived relationship investment and relationship quality. Three field studies with Red Cross Blood Donation Services confirm the effectiveness of past donation use appeals on redonation behavior: Past donation use is effective for retention purposes, especially for more experienced donors, and when it is sent shortly after the donation. It also leads to higher reactivation rates of inactive donors. In addition to the practical implications, we contribute to the relationship and nonprofit service literature.

Thursday, 1PM

TC15

Michaelangelo - Level 2
CRM: Customer Journey and CLV I
Contributed Sessions

4 Customer-Based Brand and Category Management: Applying Customer Metrics in a Product-Centric Marketplace

Rodrigo Heldt[1], Fernando Bins Luce[2], Sarang Sunder[3], Guilherme Brandelli Bucco[4], [1]Universidade Federal do Rio Grande do Sul, Porto Alegre, Brazil; [2]Universidade Federal do Rio Grande do Sul, Porto Alegre, Brazil; [3]Indiana University, Indianapolis, IN, [4]Universidade Federal do Rio Grande do Sul, Porto Alegre, Brazil. Contact: rodrigoheldt@gmail.com

Owing to the availability of disaggregate databases, the concept of customer centricity gained importance in business practice and academia. Although customer centricity has been shown to have great benefits, traditionally product-centric firms have been slow to adapt. This is often attributed to challenges in reconciling category and brand performance metrics with customer-level performance metrics since category and brand management still depend on category and brand-level metrics. We propose a bottom-up CLV based approach, applicable to both B2B and B2C relationships, to manage customer, category, and brand profitability simultaneously. We adapt both the Beta-Geometric/NBD model (Fader et al., 2005) and the hierarchical bayes extension to the Pareto/NBD model (Abe, 2009) to measure CLV accounting for brand and category-levels purchase. Differently from most studies in customer relationship management literature, in this research, we focus on the distributor and retailer B2B relationship, in which the customer analyzed is the retailer. The proposed methodology was empirically applied to data from a large consumer-packaged goods (CPG) distributor. Through various analyses, we highlight the predictive accuracy improvements of the proposed approach and develop key managerial insights that would not be possible using extant methods. We show that not integrating category and brand purchases within the CLV framework can lead to a 10.5% under estimation in customer equity. Additionally, we show that the Pareto rule can have different meaning for different categories and brands. Lastly, the results suggest that ignoring categories and brand purchases when evaluating CLV can lead to up to 20% misclassification of the most/least valuable customers at the brand-level as well as up to 18% misclassification at the category-level and we show how such discordances may be used as input to drive product recommendations to increase profitability.

Thursday, 1PM

TC16

Raphael - Level 2
Marketing for a Better World
Special Session

Session Co-Chair

Rajesh Chandy, London Business School, London, UT, United Kingdom.

Thursday, 1PM

TC16

Raphael - Level 2

Marketing for a Better World

Special Session

Session Chair

Iris Steenkamp, Bocconi University

Thursday, 1PM

TC16

Raphael - Level 2

Marketing for a Better World

Special Session

1 Can Selling Make You More Resilient? Experimental Evidence from India

Iris Steenkamp[1], Rajesh Chandy[2], Om Narasimhan[3], Gaurav Mehta[4], [1]Bocconi University, Milan, Italy; [2]London Business School, London, United Kingdom; [3]London School of Economics, London, United Kingdom; [4]Dharma Life, Delhi, India. Contact: iris.steenkamp@unibocconi.it

Can business play a role in building resilience among vulnerable communities? Can (marketing) employment contribute to resilience - and if so, how? These are increasingly important and relevant questions in our current world as the recent COVID-19 pandemic showed many households to be just one shock away from falling into poverty. This paper explores a marketing solution to building resilience. We seek to answer the following question: “Can sales employment help people build resilience and enable them to cope with adversity?” We offer a mechanism through which sales improves resilience: by facilitating opportunities to connect.We present experimental evidence from an RCT involving saleswomen in rural India. With our partner organization, we recruited, trained, and randomly assigned 1,048 women to either treatment, placebo, or control condition. We exogenously assign individuals to an employment position that facilitates opportunities to connect and measure the impact on resilience. In doing so, not only do we vary opportunities to connections, but we also provide a plausible mechanism of why they have more connections than others. Certain jobs - in our case sales employment - provide those engaged in them with increased opportunities to connect. To the best of our knowledge, this paper is the first to causally estimate the impact of employment on personal outcomes such as resilience.Our results show that those engaged in sales employment are more resilient than those in placebo employment or no-employment conditions. First, we find that sales employment significantly improves one’s ability to be economically resilient when facing adversity by increasing. Second, our results show that engagement in sales is associated with having a wider set of connections, largely driven by increased connections with local government representatives and community leaders. Last, we examine heterogeneous effects and find that those from the lowest castes benefit most from engaging in sales employment in terms of building resilience compared.

Thursday, 1PM

TC16

Raphael - Level 2

Marketing for a Better World

Special Session

2 Using Marketing Principles to Reduce Gender Bias

Nita Umashankar[1], Rajesh Chandy[2], Pradeep Chintagunta[3], [1]San Diego State University, San Diego, CA, [2]London Business School, London, United Kingdom; [3]University of Chicago, Chicago, IL

In marketing, gender has been treated mainly as a control variable, and to a lesser extent, as a driver of consumption behaviors. However, the influence of gender is socially constructed (Beall 1993), so to measure the effect of gender, we need to understand how gender roles are shaped. Namely, can we employ marketing principles to enhance people’s perceptions of women to benefit society? Traditionally, the marketing concept of repositioning has been used to change how customers, and even investors, view a brand relative to the competition (Kotler 2000). The authors use the same concept, but rather than applying it to a commercial problem; they apply it to a global societal problem: gender bias. The authors examine whether educational interventions can replace negative associations about females with positive ones typically reserved for males and create associations typically reserved for females about males. The authors partnered with non-profit organizations

in India to run a field experiment in 20 villages in rural North. Twelve-hundred female and male adolescents participated in a 4-month training program that focused on either gender role repositioning (the treatment) or life skills (the control). A difference-in-differences analysis shows that the treatment program effectively changed perceptions about violence against women: female and male participants viewed violence against women as less acceptable after the training compared to the control group. However, it was less effective when changing views about women possessing positive attributes, especially for the female participants (and participants living with more women). In some cases, it backfired and increased self-prejudice for the female participants. Overall, the gender role repositioning intervention effectively reduced (self-reported and hypothetical) abusive and violent behaviors and perceptions toward women. It was less effective and, in some cases, counter-productive, however, in repositioning the gender roles of women, especially for female participants.

Thursday, 1PM

TC16

Raphael - Level 2
Marketing for a Better World
Special Session

3 Can Facebook Ads Prevent Malaria? Two Field Experiments in India

Dante Donati[1], Nandan Rao[2], Victor Orozco-Olvera[3], Ana Maria Muñoz-Boudet[3], [1]Columbia University, New York, NY, [2]Universitat Autonoma de Barcelona, Barcelona, Spain; [3]The World Bank, Washington, DC, Contact: dd3137@gsb.columbia.edu

Social media campaigns are increasingly used for social good objectives, yet their effectiveness remains poorly understood. This paper presents results of two trials evaluating the impact of a malaria prevention Facebook campaign in India, 1-to-4 months after ad exposure. The first is a cluster randomized controlled trial that evaluated a "real world" ad campaign, where experimental groups were assigned at the district level and survey respondents were independently recruited in three high-burden states. While this intervention increased the use of bed nets among individuals living in concrete houses, the campaign was ineffective for households living in non-concrete dwellings, where malaria risk is higher. Consistently, analysis of administrative district-level health facility data shows the campaign decreased urban monthly incidence by 0.7-1.3 percentage points, but not rural incidence. Did the ad campaign not persuade households at greater malaria risk or did it fail to reach them? To answer this question, in a second trial we experimentally varied exposure to the same ads at the individual level, using the remarketing tools of the ad platform. We now find that bed net use increased for both types of households, suggesting that social media campaigns need to invest in improved targeting strategies to reach their development objectives. The paper concludes proposing a series of micro-targeting approaches to maximize impacts in sub-populations of interest.

Thursday, 1PM

TC16

Raphael - Level 2
Marketing for a Better World
Special Session

4 Tell Them How They Did: Customer Feedback and Employee Well-Being

Ruhan Liu[1], Wanqing Zhang[2], Pradeep Chintagunta[3], Jing Xu[1], [1]Peking University, Beijing, China; [2]Bayes Business School, City, University of London, London, United Kingdom; [3]University of Chicago, Chicago, IL, Contact: liurh@pku.edu.cn

Frontline employees play a pivotal role in determining customer satisfaction and organizational performance; yet their well-being is subject to several threats, including role ambiguity and a lack of job meaningfulness. Rather than viewing these issues as solely a human resources problem, the authors ask the question: can marketing data, such as customer feedback, be used to improve employees' well-being and performance? To this end, they provide employees with i) individualized customer feedback, or ii) a combination of such feedback and public recognition of employees by the firm as interventions. By conducting a field experiment with 145 front-line employees of a housekeeping services platform, they find that such interventions enhance employee well-being and work performance. Specifically, exposure to customer feedback improves employee workplace well-being (e.g., job satisfaction), psychological well-being (e.g., self-acceptance), and service quality. Combining customer feedback and public recognition increases social well-being (e.g., employment relationships) and service hours. In terms of mechanisms, they show that the interventions increase employees' perceived role clarity and job meaningfulness. This study provides practical and theoretical insights into the cross-functional benefits of marketing data. It contributes to the broader literature on employee well-being and social sustainability.

Thursday, 1PM

TC17

Balmoral Level 2
Applications of Text and Image Analysis
Special Session

Session Co-Chair
Scott Andrew Neslin, Tuck School of Business at Dartmouth, Hanover, NH

Thursday, 1PM

TC17

Balmoral Level 2
Applications of Text and Image Analysis
Special Session

Session Chair
Edlira Shehu, University of Groningen, Groningen, Netherlands.

Thursday, 1PM

TC17

Balmoral Level 2
Applications of Text and Image Analysis
Special Session

1 The Uniqueness Premium
Flora Feng[1], Charis Li[2], Shunyuan Zhang[3], [1]Carnegie Mellon University, Pittsburgh, PA, [2]Grenoble Ecole de Management, Grenoble, France; [3]Harvard Business School, Boston, MA
Sharing economy platforms enable the supply of products/services with unique characteristics. Airbnb emphasizes uniqueness as its key advantage, distinguishing it from a mere hotel substitute. What is the economic value of uniqueness on Airbnb? Measuring visual uniqueness is challenging: no dataset or model is available, and labeling images manually is impractical as human judgment on uniqueness is complex and subconscious. We proposed a machine learning (ML) algorithm with data on 19,054 Airbnb properties in New York City to rate the visual uniqueness of a property based on its images and validated the ML predictions with human judgment in two lab experiments. We further investigated how uniqueness affected demand and supply-side competition. First, to capture uniqueness of Airbnb images, we developed a ML model with 93.5% accuracy based on *contrastive learning*, which measures similarity between an input image and its paired image and dissimilarity between the input and other images. We identified important image features contributing to room uniqueness using eXplainable AI and generated uniqueness heatmaps, showing that malleable features like room decors can enhance uniqueness. Next, we validated the model against human judgment in a computer-lab experiment and an eye-tracking experiment. Both experimental results cohere with the visual uniqueness and heatmaps predicted by the model. Discriminant validity between uniqueness and aesthetics is validated with Airbnb data and experiment results. Finally, we reported a "Uniqueness Premium" using the visual uniqueness to explain Airbnb demand—an inversed U-shape indicating that uniqueness benefits demand initially but then hurts it. This effect is stronger for properties with fewer reviews or amenities. When comparing cover vs. non-cover images, no first-impression effect was found. Our ML model and findings provide managerial implications for sharing economy platforms (Airbnb) and peer-to-peer suppliers (hosts) looking to capitalize on the uniqueness premium through visual presentation and algorithmic pricing.

Thursday, 1PM

TC17

Balmoral Level 2
Applications of Text and Image Analysis
Special Session

2 Adaptive Preference Measurement for Unstructured Data, with Applications to Customer Onboarding
Ryan Dew, University of Pennsylvania, Philadelphia, PA
Subscription businesses now operate in many industries, from entertainment to fashion. A common problem facing these companies is a variant of the classic cold start problem: given a large portfolio of products, which products should the firm recommend to new subscribers? Addressing this

issue is especially crucial for subscription businesses, which often see a fast rate of churn. To help alleviate this problem, some companies have implemented customer on-boarding surveys, in which new customers are asked a short series of questions aimed at understanding their preferences, with the goal of increasing satisfaction in the initial periods of the subscription. Yet, despite their increasing prevalence in practice, there is little research on the optimal design of such surveys. In this work, we propose an adaptive survey design framework, based on a combination of representation learning and Bayesian optimization, to build such a survey, based entirely on the types of unstructured data that are typically available in modern e-commerce. Inspired by the literature on adaptive conjoint analysis, the proposed method optimizes information gain per question by adaptively selecting which items to show respondents, based on a nonparametric model of the individual's utility. In turn, this adaptivity allows for fast estimation of individual-level preferences over both real and hypothetical product profiles. Since the method is based on raw, unstructured data, it alleviates the need for expensive, manual coding of product attributes. We show how the framework can be applied in the context of both customer on-boarding, and preference measurement more generally (i.e., conjoint). Specifically, we showcase the framework in the context of a fashion subscription box business, where we show the method's gains in both preference prediction and efficiency.

Thursday, 1PM

TC17

Balmoral Level 2
Applications of Text and Image Analysis
Special Session

3 What Makes for a Good Thumbnail? Video Content Summarization into a Single Image

Jasmine Yang, Oded Netzer, Columbia Business School, New York, NY

Given the unprecedented proliferation of video content available on digital platforms, thumbnails - reduced-size preview images or clips - have become increasingly important in helping consumers navigate through videos during their search process. Conventional wisdom holds that like a book cover or a movie poster, an effective thumbnail should be both attractive and serve as a synthesis of video content, allowing viewers to decide which video to watch. Despite its importance, little attention has been given in the marketing literature to explore how viewers choose and react to videos based on thumbnails, and consequently what makes for a good thumbnail to summarize and promote video content. In this paper, we explore the relationship between the thumbnail of a video (relative to video content) and viewers' subsequent video reactions (e.g., views, watchtime percentage, and engagement). We analyze thumbnails from the perspectives of image content, aesthetics and affective emotions using state-of-the-art text-mining, computer vision and deep learning tools. Based on the extracted features both at the thumbnail and video frame level, we construct a set of measures to study how thumbnails relate to videos, and then draw on the expectation-disconfirmation theory to explain viewers' video reactions based on thumbnails. Using a large-scale observational study and two online experiments, we find that when it comes to videos, "clickbait thumbnails" may lead to lower engagement and retention of video viewership, and highlight the value of using a content representative frame. We propose optimal thumbnails to use for different video outcomes and emphasize the importance of embracing thumbnails in creators' promotion workflows for better video engagement.

Thursday, 1PM

TC17

Balmoral Level 2
Applications of Text and Image Analysis
Special Session

4 The Impact of Text and Image Expectations on Advertising Conversion

Edlira Shehu[1], Scott Andrew Neslin[2], [1]University of Groningen, Groningen, Netherlands; [2]Tuck School of Business at Dartmouth, Hanover, NH, Contact: es.marktg@cbs.dk

This paper analyzes the role of customer expectations regarding landing websites of online ads on their success (conversion). While past research has analyzed features of ad texts that are relevant for generating clicks and conversions, the role of the landing websites has found little attention so far. We address this gap and analyze how consumers' expectations regarding text and image elements of landing websites of online ads affect conversions. The rational expectations theory suggests that online ads form customers' expectations regarding the landing website, that in turn influence their conversion decisions. We posit that these expectations influence consumer's conversion decisions. To test these relationships, we use data from more than 5,200 online ads from 11 different charitable organizations and empirically analyze the role of expectations regarding website text and image on conversions. We analyze three perspectives of website text and image, namely their structure, sentiment and content. Using natural language processing, and computer vision tools, we extract features along these three perspectives. In addition, we operationalize expectations for each feature as a function of the structure, sentiment and content of the ad text, and link both, the observed features, as well as the expectation disconfirmation to ad conversions. Result confirm the role of expectations, since they significantly increase the model fit compared to a model without expectation variables. In addition, we see that (1) text and images are both relevant and should be considered, (2) it is relevant to account for expectations at a feature level (rather than aggregated across different features), and (3) not only the size, but also the direction of the disconfirmation (i.e., over- versus underdelivery of expectations) is relevant. Substantively, our results provide important insights on how charities should tailor landing websites for their online ads.

Thursday, 1PM

TC18

Windsor - Level 2

Retailing: Consumer Choice III

Contributed Sessions

Session Chair

Jinhee Huh, University of Calgary, Calgary, AB, Canada.

Thursday, 1PM

TC18

Windsor - Level 2

Retailing: Consumer Choice III

Contributed Sessions

1 Polarized Nation, or Not? an Empirical Investigation Whether and How Brands' Sociopolitical Stands Shape Customer Store Visits

Tal Shoshani, Ignacio Riveros, Lan Luo, University of Southern California, Los Angeles, CA

This research aims to carry out an empirical investigation of whether and how brands' sociopolitical stands shape customer store visits in the US. In particular, we explore answers to the following questions: (1) How has the political polarization in stores' clientele composition evolved over the last few years (2019-2022) in the US? (2) Whether brands' sociopolitical stands play a role in this evolution? (3) If so, are store visits of certain brands more or less sensitive to particular types of sociopolitical events? We use foot traffic data to identify brands' physical stores and track visits to their stores detailed by which census block groups consumers come from. Second, we utilize voting data at the precinct level of the 2020 presidential election to capture political preferences heterogeneity. We then merge these two data sets to create a novel and granular measure of the political customer profile for each store and week between 2019 and 2022. Third, we gauge stands of a large number of brands on all major sociopolitical events during this time period based on conversations on social media. We further examine the extent to which customer store visits vary based on the sociopolitical stands of these brands. This study expands upon previous research by offering insights into whether and how US consumers from a large and diverse set of popular brands alter their store visit behavior in response to these brands' stands on a wide range of sociopolitical events.

Thursday, 1PM

TC18

Windsor - Level 2

Retailing: Consumer Choice III

Contributed Sessions

2 Does the Rise of Recommerce Reinforce or Counter the Coase Conjecture?

Rubing Li, Arun Sundararajan, New York University, New York, NY, Contact: rl4229@stern.nyu.edu

A multitude of new focused digital markets like Depop, Poshmark, StockX, and The RealReal have led to a recent explosion of "recommerce" — the online trade of pre-owned apparel and accessories. In parallel, new digital platforms like Trove and Recurate have made it possible for companies ranging from Canada Goose and Patagonia to Levis and Lululemon to set up their own branded marketplaces that facilitate purchasing pre-owned items directly.

Our research examines how the simultaneous emergence of third-party pre-owned marketplaces and technologies that aid branded recommerce affect the strategy of sellers. In a multiperiod setting, we model the choices

of a monopoly seller who makes durability and pricing choices. The seller considers tradeoffs between substitution effects — pre-owned items cannibalize new sales — and time-consistency effects — the possibility of resale raises consumer willingness-to-pay for new goods if the seller has appropriate commitment devices.
We show that branded recommerce mitigates substitution effects, inducing revenue capture and price discrimination that raises the marginal profits from increased durability, and countering the Coase (1972) conjecture that a monopoly seller will underinvest in durability. We discuss how future smart contracts in nonfungible tokens and current product authentication technologies may further ameliorate the time inconsistency issue.We outline the assumptions necessary for branded recommerce to have positive sustainability effects by lowering incentives for planned obsolescence. The key strategic effect of third-party marketplaces is akin to the effects seen in entry-deterring monopoly pricing — they increase a monopoly seller's likelihood of pursuing branded recommerce.

Thursday, 1PM

TC18

Windsor - Level 2
Retailing: Consumer Choice III
Contributed Sessions

3 Information Technologies and Restaurant Location Choice

Hongyu Fu[1], Daisy Dai[2], [1]Purdue University, West Lafayette, IN, [2]Purdue University, West Lafayette, IN, Contact: fu295@purdue.edu

The recent rise of online search and review platforms has fundamentally changed how consumers search for retail businesses. The switch of consumer search from offline to online may decrease firms' incentives to locate in prime locations. This paper studies how the growing popularity of online review platforms changes the distribution of firm locations by combining 9-year detailed data on restaurant locations and consumer review activities on Yelp. Using an instrumental variable strategy, we find Yelp positively affects the entry of independent restaurants. Although Yelp's popularity has not changed restaurants' probabilities of locating in big business clusters, restaurants locate closer to neighborhood roads compared to primary and secondary roads in markets where Yelp is more popular.

Thursday, 1PM

TC18

Windsor - Level 2
Retailing: Consumer Choice III
Contributed Sessions

4 Understanding Secondhand Luxury Consumers

Amy Pei[1], Jinhee Huh[2], [1]Northeastern University, Boston, MA, [2]University of Calgary, Calgary, AB, Canada. Contact: jinhee.huh@ucalgary.ca

The luxury resale market is a $24 billion industry growing four times faster than the primary luxury market, but little is known about consumers' motivations and behaviors in the luxury resale market. In this study, we examine how product attributes, particularly design uniqueness, affect the price and sales of women's luxury bags with a rich and comprehensive data set from a leading online luxury resale platform. A machine-learning approach is used to quantify the brand-specific uniqueness of a bag's design -- the degree to which it deviates from the brand's most iconic and representative design. Conventional wisdom suggests that secondhand luxury consumers are mainly driven by money-saving; however, we find that their purchase decision is mainly driven by their desire to signal uniqueness. Therefore, bags with unique designs have higher listing prices and fewer days on the resale market. In addition, the impact of uniqueness on price and sales is moderated by brand and seller characteristics. For instance, experienced sellers set higher prices for unique bags than less-experienced sellers. Unique bags made by exclusive and older brands have lower listing prices than those made by less exclusive and younger brands. Our findings suggest that luxury brands can create more value for customers in both the primary and resale markets by creating highly unique designs. In addition, luxury brands that sell pre-owned products may mitigate cannibalizing the primary market by only offering unique and novel collections for the resale market.

Thursday, 1PM

TC19

Sandringham - Level 2
Pricing: Choice Models Applications
Contributed Sessions

Session Chair

Luc R. Wathieu, Georgetown University, Washington

Thursday, 1PM

TC19

Sandringham - Level 2
Pricing: Choice Models Applications
Contributed Sessions

1 Dynamic Pricing Strategies Under Mental Accounting and Reference Price Adaptation

Xiaobei Shen[1], Qi Cheng[2], Yimin Yu[3], [1]University of Science and Technology of China, Hefei, Anhui, China; [2]City University of Hong Kong, Hong Kong, Hong Kong; [3]City University of Hong Kong, Kowloon, Hong Kong.

A first anchoring/promotion and then penetration pricing strategy has been commonly used in practice, see for example Apple Inc., Netflix, Luckin Coffee, etc. However, why such a pricing strategy is adopted, when it can be optimal and what is the optimal price at each time point have not been revealed. In this paper, we aim to answer these questions and fill the gap in the literature. We build a continuous-time dynamic game to investigate the equilibrium pricing strategies under the mental accounting and reference price (MARA) model with two reference price adaptations, i.e., the recent weighting (RW) and the primary recency (PR). MARA adaptation offers a micro-foundation and explanation for a variety of trading anomalies in practice. When consumers are homogeneous, we find that the equilibrium pricing strategy over time can be described by a first anchoring/promotion and then penetration pricing strategy. The anchoring/promotion pricing results from the mental accounting of consumers, i.e., consumers' irrationality. The reference price adaptation has an influence on the asymptotic convergence of the price paths. Specifically, the equilibrium price and also the reference price asymptotically converge to the product utility under RW, regardless of the initial reference price, and hence the price paths achieve the global stability. In contrast, these prices asymptotically converge to some limiting states that are contingent on the initial reference price under PR, which leads to the local stability. When consumers are heterogenous, we characterize the equilibrium pricing strategies with respect to different system parameters. We find that whether a seller shall serve all consumers or only the high-valuation consumers heavily depends on the probability of being a high-valuation consumer and the initial reference price. We also reveal a first promotion and then penetration pricing strategy with an intermediate jump down in this case, which provides an explanation for the pricing strategy adopted by, e.g., Mercedes-Benz.

Thursday, 1PM

TC19

Sandringham - Level 2
Pricing: Choice Models Applications
Contributed Sessions

2 Measuring Loss Aversion in the Consumer Purchase Hierarchy: A Multiplt Category Perspective

Kyuseop Kwak[1], Sri Devi Duvvuri[2], Gary J. Russell[3], [1]University of Technology Sydney, Broadway NSW, Australia; [2]SD Associates, Kenmore, WA, [3]University of Iowa, Iowa City, IA, Contact: kokila64@yahoo.com

Loss aversion is a well-studied characteristic of consumer decision-making behavior. One manifestation of loss aversion is Prospect Theory: (a) consumers evaluate outcomes relative to a reference point and (b) losses are much more heavily weighted than gains in decision making. It has been found that reactions to price changes (reference price effects) follow this pattern within most product categories. In this research, we examine variation in the strength of loss aversion across the decision hierarchy. By generalizing the multivariate logistic (MVL) choice model, we construct a *multivariate nested logit model* that allows measurement of the strength of loss aversion both within and across categories. Our analysis of consumer purchase data in four product categories shows that loss aversion generally holds within a product category, but that gain seeking holds across product categories. We argue that constraints on choice behavior explain this pattern. These differences in the strength of loss aversion across the decision hierarchy have important implications for retail category management.

Thursday, 1PM

TC19

Sandringham - Level 2
Pricing: Choice Models Applications
Contributed Sessions

3 **Quality-Adjusted Reference Price for Differentiated Goods**

Dong Soo Kim[1], Mingyu (Max) Joo[2], [1]Ohio State University, Columbus, OH, [2]University of California-Riverside, Riverside, CA, Contact: mingyu.joo@ucr.edu

Despite the broad applications in discrete choice models, how a consumer forms internal reference prices among quality-differentiated goods is largely unknown. We propose a theory-driven model of reference-price formation at the quality-adjusted scale. The proposed model assumes that a consumer's price beliefs and perceived qualities of all potential alternatives collectively influence her outside option valuation. The quality-adjusted reference price is determined at which an inside good's quality-to-reference-price ratio becomes equivalent to the outside option value, representing what each product's quality deserves. The proposed reference price enables a fair price comparison of "apples to oranges" and avoids overstating reference points, empirically validated by a belief- elicitation experiment. A numerical analysis shows that considering the quality-adjusted reference price may prevent firms from over-pricing. Our model also theoretically explains how behavioral nudges influence purchases with shelf prices unchanged.

Thursday, 1PM

TC19

Sandringham - Level 2
Pricing: Choice Models Applications
Contributed Sessions

4 **Not Just About Price: How Benefit Focus Determines Consumers' Retailer Pricing Strategy Preference**

Luc R. Wathieu[1], Chris Hydock[2], [1]Georgetown University, Washington, DC, [2]California Polytechnic State University, San Luis Obispo, CA, Contact: lw324@georgetown.edu

Recent research has highlighted a difference in the way consumers approach choice sets. Some consumers focus on products' quality benefits (vertical differentiation): their selections are driven by the level of quality obtained relative to the price paid. Other consumers focus on products' taste benefits (horizontal differentiation): their selections are driven by acquiring personal tastes at favorable prices. The purpose of this paper is to investigate how consumers' benefit focus, a continuum anchored by quality and taste, drives their preferences between retailers differing in pricing strategies. We hypothesize that all else equal, consumers who focus on taste benefits will prefer EDLP stores (infrequent discounters), while consumers who focus on quality benefits will prefer Hi-Lo stores (frequent discounters). Findings from our experiments and an analysis of consumer panel data corroborate this relationship. This work also shows the mediating role of perceived value and the effect of several moderators: the strength of the price-quality relationship, the pattern of discounts, and cherry-picking costs.

Thursday, 3PM

TD01

Trade Room- Lobby Level
ML: Audio
Contributed Sessions

Session Chair
Khaled Boughanmi, Cornell University, Ithaca, NY

Thursday, 3PM

TD01

Trade Room- Lobby Level
ML: Audio
Contributed Sessions

1 **The Role of Sound and Silence in Movie Trailers**

Maximilian Witte[1], Keno Tetzlaff[1], Jochen Hartmann[2], Mark Heitmann[1], [1]University of Hamburg, Hamburg, Germany; [2]Technical University of Munich, Munich, Germany. Contact: maximilian.witte@uni-hamburg.de

Images and videos as sequences of images have received increasing attention in marketing research. The impact of audio features (e.g., frequency, temporal variation of volume, etc.) on consumers' responses has received much less attention. In this paper, we study how firms can strategically use silence as an effective tool to build tension, suspense, and capture viewers' interest in audio and video content. Silence becomes meaningful when compared to the preceding and succeeding audio signals.
We use state-of-the-art machine learning methods to investigate the effect of silence in movie trailers. Analyzing more than 40 features of acoustic information in about 1,000 movie trailers, we find evidence of a positive impact of contrasting sound in movie trailers. This is evidenced for movie trailer views and liking. To understand how silence drives behavioral intentions, we classify viewer responses

in terms of a want2watch-measure (e.g., "Now I really want to watch that movie!") and find similar effects. In addition, we find evidence for differences in the effect of silence depending on context and temporal variation. These results suggest the importance of strategically managing the use of silence to enhance interest and engagement. We conclude by providing an overview of which audio features can be automatically extracted and how these interact with silence to create viewer impact.

Thursday, 3PM

TD01

Trade Room- Lobby Level
ML: Audio
Contributed Sessions

2 Using 'Skip Rates' to Forecast New Song Success in Digital Music Streaming

Sean N. Brüggemann, Randolph E. Bucklin, UCLA, Los Angeles, CA

This research explores whether early data on partial versus completed consumption can improve forecasting of new product success. Using data for newly released songs on a digital music streaming platform, we ask if daily 'skip rates' - the proportion of streams not completed by users - adds predictive value to a forecasting model and under what circumstances.

We analyze 473 newly released tracks of a major international record label. The data contain the track's total streaming history for 12 weeks following its release. For each day, the number of completed streams as well as those partially completed is recorded. This enables us to compute a daily 'skip rate' as the ratio of partial streams to all streams. To forecast the success of a new track, we predict the track's cumulative streaming volume realized over the 12 weeks as a function of early skip rate data while also controlling for the track's lagged streams, the popularity of the artist(s), and its promotion on playlists.

Results from a model using track as the unit of analysis and the cumulative 12-week streaming volume as the outcome of interest indicate that data on partial vs. completed streams can improve forecasting performance. The effect of the track's early completion rate (or one minus the skip rate) on cumulative streams is positive and significant. Preliminary results from quantile regressions suggest that completion rates in the second week of a new track's release, but not the first, are particularly helpful in predicting 'superstar' tracks (those that will account for a very high share of a label's streaming volume). This means that the information value from the partial consumption response of listeners may vary depending upon the time since a track's release.

Thursday, 3PM

TD01

Trade Room- Lobby Level
ML: Audio
Contributed Sessions

3 On the Predictive Performance and Optimality of Trailers' Audio/Visual Features

Xiaohang Flora Feng[1], Jehoshua Eliashberg[2], Prasad Naik[3], [1]Carnegie Mellon University, Pittsburgh, PA, [2]University of Pennsylvania, Philadelphia, PA, [3]University of California Davis, Davis, CA, Contact: xiaohanf@andrew.cmu.edu

Movie trailer, which consists of audio and visual signals, is information-intensive and its enjoyment is related to the success of the movie. However, little research focuses on how to design a trailer that will generate very positive ratings by consumers. We fill the gap by analyzing 352 trailers and advanced analytical tools. First, we extract controllable visual and audio signals from unstructured video data with computer vision and machine learning tools. We then combined the 2 visual signals (brightness, RMS contrast) and 2 audio signals (loudness, pitch) using dynamic factor analysis. Next, we explore the effect of the dynamic visual and audio factors on the trailer ratings based on functional regression analysis. We find that for the first half of trailers, the effect of the audio factor on trailer rating is positive, while for the second half the effect changes drastically; the effect of visual factor on the trailer rating is in general positive. Finally, we established a scalable and widely applicable framework that achieved automatic audio signals design given visual signals, based on optimal control theory. We derived the optimal audio factor given the visual signal for all trailers in our dataset and then regressed the distance (mean percentage error, dynamic time warping) between the optimal and original audio signal on trailer features. We found that except for trailer rating, basically all other characteristics didn't have a significant effect on the distance, suggesting for most trailers, the higher the rating, the lower the difference between original and optimal audio signal, and this is robust across trailers with different features (e.g., budget, MPAA classifications). Our framework can help producers gain insights into the effectiveness of visual and audio features on trailer rating, and aid trailer designers in making better trailers by adjusting the audio signals to match the visual signals in a way that maximize audience enjoyment. Moreover, our framework is not constrained to movie trailers and can be applied to solve a more general problem of video production.

Thursday, 3PM

TD01

Trade Room- Lobby Level
ML: Audio
Contributed Sessions

4 Contextual Set-Based Music Recommendations Using Interlocked Hypergraph Convolutional Neural Networks

Khaled Boughanmi[1], Asim Ansari[2], Yang Li[3], [1]Cornell University, Ithaca, NY, [2]Columbia University, New York, NY, [3]Cheung Kong Graduate School of Business, Beijing, China. Contact: kb746@cornell.edu

Contextual set-based personalized recommendations are important in many settings. For example, in the music industry playlists (i.e., sets of songs) are now the principal mechanism for music listening on digital streaming platforms such as Spotify. Given the large heterogeneity in musical tastes and the endless number of playlists that can be constructed, the automated design, completion, and recommendation of personalized playlists is critical. We develop a novel deep generative modeling framework to perform these tasks. We use interlocked Variational Hypergraph Auto-Encoders to uncover latent variables that summarize the musical themes and contextual moods associated with songs and playlists and the preferences for users. We fit our model on a data set of Spotify users' playlists that we augmented with acoustic features and textual tags for the songs. Our application yields interesting insights about the diversity in musical preferences across users and contexts. We then use our model estimates to cross-recommend curated playlists to users with similar thematic preferences, complete existing playlists with congruent songs, and automatically design new playlists for personalized musical experiences.

Thursday, 3PM

TD02

Flagler - Lobby Level
Social Media: Social Influence I
Contributed Sessions

Session Chair
Yupin Yang, Simon Fraser University, Burnaby, BC, Canada.

Thursday, 3PM

TD02

Flagler - Lobby Level
Social Media: Social Influence I
Contributed Sessions

1 Erupting Moments in Livestream Commerce: Drivers and Implications

Jeremy Yang[1], Hanbing Xue[2], Natasha Zhang Foutz[3], Grace Xia[4], [1]Harvard University, Boston, MA, [2]University of Science and Technology of China, Hefei, China; [3]University of Virginia, Charlottesville, VA, [4]Shandong University, Weihai, China. Contact: nfoutz@virginia.edu

Livestream commerce, where streamers present products and interact with audiences in real time, is projected to reach $700 billion in China by 2023 and $55 billion in U.S. by 2026. The success is often credited to strong audience engagement. This research hence examines the drivers and strategic management of erupting moments in livestream, when the audience exhibits abnormally high engagement (e.g., massive amount of live comments or tipping). Specifically, leveraging the state-of-the-art machine learning and statistical methods, we detect the erupting moments and their multi-modal (speech, text, audio, video) and multi-source (streamer, audience, product) drivers. We further link the quantity, timing, and inter-temporal trend of the erupting moments to sales. Analyses of TikTok livestreams reveal interesting findings. For instance, the quantity of erupting moments exhibits an inverted-U relationship with sales, suggesting more erupting moments are not necessarily beneficial. Earlier or more clustered appearance of erupting moments in a stream, and an intensifying trend boost revenues. We further construct a dynamic structural model to connect erupting moments to their drivers and sales impact, and perform counterfactual simulations to illuminate actionable, dynamic design of erupting moments in a livestream. This research contributes to the growing literature on livestream commerce and consumer experience by exploring drivers and strategic management of intense engagement, and by developing new methods to detect engagement fluctuations and optimize live experience.

Thursday, 3PM

TD02

Flagler - Lobby Level
Social Media: Social Influence I
Contributed Sessions

2 Celebrity Endorsements and Peer Effects: Evidence from Esports

Sriniketh Vijayaraghavan[1], Neeraj Arora[2], [1]Wisconsin School of Business, Madison, WI, [2]University of Wisconsin-Madison, Madison, WI, Contact: svijayaragh3@wisc.edu

This paper examines the impact of peer effects and endorsements on consumer behavior within the esports industry. To do this, we constructed a four-year longitudinal panel dataset of 1.2 million video game players from the popular game Dota 2. We used this panel dataset, along with supplementary datasets, to address endogeneity issues in the studies of both endorsements and peer effects. We employed techniques such as regression discontinuity designs, Difference in Difference models, and instrumental variable models to robustly identify the impact of both peer effects and endorsements. Our key findings indicate that while both endorsements and peer effects have a positive impact on game usage, their interaction is negative, suggesting that there are no social multiplier effects as a result of celebrity endorsements. Additionally, we found that product characteristics, such as observability and complexity, play a crucial role in determining the effectiveness of both endorsements and peer effects. Furthermore, we discovered that the usage rate (or visibility) of a product to consumers is the most critical endorsement characteristic, while winning and performance surprisingly don't seem to matter.

Thursday, 3PM

TD02

Flagler - Lobby Level
Social Media: Social Influence I
Contributed Sessions

3 Emotional Variability and Consumer Engagement: The Case of a Large Live Streaming Platform

Chongyan Sun, Francisco Cisternas, Chinese University of Hong Kong, Hong Kong, Hong Kong. Contact: sunchongyan@link.cuhk.edu.hk

The live streaming industry has witnessed a rapid growth in recent years, especially during the pandemic. Like other tech companies, a live streaming platform has to carefully manage the consumer engagement to boost its capital market performance. One of the key drivers of the consumer engagement is their emotion. Extending the established theory that higher consumer emotional valence enhances engagement, we hypothesize that higher consumer emotional variability also promotes consumer engagement. We test it by collecting live streaming sessions of top streamers from a large live streaming platform in China. We split each session into ten-second intervals and generate comment volume and comment emotional scores for each interval, from which bivariate time series are constructed. We estimate a SVAR-GARCH-in-mean model separately for all streamers and find positive and significant effects of emotional variability on engagement for most sessions. Managerial implications are discussed.

Thursday, 3PM

TD02

Flagler - Lobby Level
Social Media: Social Influence I
Contributed Sessions

4 Quantifying the Value of Micro-Influencers: An Empirical Study in the Restaurant Industry

Yupin Yang[1], Zhaoyang Yu[2], Ziqiong Zhang[2], Zili Zhang[2], [1]Simon Fraser University, Burnaby, BC, Canada; [2]Harbin Institute of Technology, Harbin, China. Contact: yupin_yang@sfu.ca

With the rise of various social media platforms during the last decade, companies in all sizes have started to use micro-influencers to promote their products and services. However, there is lack of empirical research in the marketing literature to quantify the financial impacts of micro-influencers. In this paper, we empirically investigate the impacts of micro-influencers on customer visits using a longitudinal dataset of 4,637 restaurants in a North American metropolitan area from July 2015 to November 2018. We find that the value of a micro-celebrity's review increases as his/her follower size increases. More interestingly, a micro-celebrity's review is more valuable when the review is on a restaurant geographical closer to his/her home location. Further, the characteristics (consumer familiarity and service quality) of the reviewed company also moderate the effectiveness of a micro-celebrity's review. In summary, the effectiveness of micro-influencer marketing depends the characteristics of both the micro-influencer and the reviewed company. Our findings highlight the importance of selecting the right micro-influencers and customizing their incentives when utilizing influencer marketing.

Thursday, 3PM

TD03

Dupont - Lobby Level
Consumer Behavior: Decision Making III
Contributed Sessions

Session Chair
Vincentia Yuen, University of Miami, Coral Gables, FL, Contact: vincentiayuen@miami.edu

Thursday, 3PM

TD03

Dupont - Lobby Level
Consumer Behavior: Decision Making III
Contributed Sessions

1 Mechanism of Pre-Decisional Cognitive Dissonance States Within Zoomers - a Study of Mental Processes of Consumer Decision-Making in the Digital Age
Durga V. Nagarajan, University of Southampton, Southampton, United Kingdom. Contact: d.vellore-nagarajan@soton.ac.uk
This paper presents the empirical results of a study conducted on establishing pre-decisional cognitive dissonance states guiding consumer behavior in the new-age cohort such as generation Z individuals. Against the backdrop of growing shifts in healthcare, Zoomers are studied from a perspective of neurology, cognition, and psychology in relation to marketing to understanding how and why their consumption behavior is changing at a rapid pace.
Whilst the behavioral facet is well understood in academic literature and organizational reports, the psychological underpinning of this behavior has a dearth of studies.
Thus, this study establishes the psychological underpinning of and presents the new-age consumer decision-making process. The paper thus, has several contributions including aiding business practitioners and academics to further understand the upending of sectors by Zoomers and their successors alpha.
Further, the paper details how they can be addressed from a strategic perspective.

Thursday, 3PM

TD03

Dupont - Lobby Level
Consumer Behavior: Decision Making III
Contributed Sessions

2 Will Consumers Rent What They Buy? How Deciding to Rent is Different from Deciding to Buy
Suwon Choi, Claudia Townsend, University of Miami, Miami, FL, Contact: swchoi@bus.miami.edu
Consumers are increasingly looking to rent rather than buy products. In response is recent work examining the motivations for and barriers to access-based consumption and renting (Armstrong et al. 2015; Baumeister and Wangenheim 2014; Catulli et al. 2013). Such work inherently assumes that the decision process for whether to rent is similar to that of whether to buy. However, the present research identifies one manner in which this is not the case. Across four studies, five product categories, and a total participant population of 1,946, we propose and show that, when considering whether to rent, consumers elaborate more on product usage than when considering whether to buy. We also examine how this influences product choice. Consistent with prior work (Goodman and Irmak 2014), we find that this difference in elaboration on usage leads to decreased preference for many-featured products. In studies 1 and 2 in both open-ended and closed-ended prompts consumers provide a greater proportion of thoughts related to product usage when considering renting versus when considering buying. Then studies 3 and 4 reveal that enhanced elaboration on product usage decreases consumer preferences for many-feature products. This effect is moderated by the trivialness of extra features (study 3), as well as by temporal distance (study 4). Specifically, consideration of renting (vs. buying) shifts the preference for many-feature products only when the extra features were non-trivial (vs. trivial) and when the temporal distance to product acquisition was close (vs. distant). This research advances our theoretical understanding of what encourages consumers' renting behaviors to how consumers make decisions when renting. By doing so, our findings add to the literature on renting, product usage, and the economic welfare of consumers. In addition, our focus on

distinguishing the decision of renting from that of buying is managerially timely and important since the existing "rent-to-own" business model is shifting toward "rent-instead-of-own" (Verdon 2019).

Thursday, 3PM

TD03

Dupont - Lobby Level
Consumer Behavior: Decision Making III
Contributed Sessions

3 The Smartphone Bias: How the Intuition that Smartphones Induce Low Thoughtfulness Decreases Decision-Making Confidence
Vincentia Yuen, Claudia Townsend, Michael Tsiros, University of Miami, Coral Gables, FL, Contact: vincentiayuen@miami.edu
Today, consumers spend more time on their smartphones than all other technological devices. And yet, some decisions (e.g., insurance purchase, setting up investments) are more likely to occur on PCs than on smartphones. To date, there is no clear understanding of whether these differences in behavior are driven by individual differences between users across devices, differences in the circumstances of device usage, differences in activity goal, or whether consumers systematically avoid smartphones for certain decisions.
This research identifies a *smartphone bias*, revealing how device usage influences decision-making confidence and the likelihood to complete decision-making tasks when on the device. The authors show that consumers have an intuition that using a smartphone induces a lower level of thoughtfulness than does using a PC. This device intuition is multidetermined and leads consumers to be less confident in their decision-making and less likely to choose when on a smartphone than on a PC.
Results from two field studies and six controlled experiments (N = 32,136 participants) reveal that, holding all else constant, including user demographics, location, and goal, this smartphone bias exists even in situations where the device used has no impact on performance. The findings offer clear theoretical and managerial contributions, including identifying practical cues managers can implement in order to overcome the negative impact of the smartphone bias and increase conversion rate.

Thursday, 3PM

TD04

Tuttle - Lobby Level
Advertising: Consumer Response III
Contributed Sessions

Session Chair
Fanglin Chen, Coral Gables, FL

Thursday, 3PM

TD04

Tuttle - Lobby Level
Advertising: Consumer Response III
Contributed Sessions

1 What to Say and Where to Say It: Retargeted Advertising Effectiveness for Offline Sales Markets
Albert Valenti[1], Chadwick Miller[2], Catherine Tucker[3], [1]IESE Business School, Barcelona, Spain; [2]Washington State University, Pullman, WA, [3]MIT, Cambridge, MA, Contact: avalenti@iese.edu
Research investigating retargeted advertising has focused on specific forms of ad content, ad personalization, ad frequency, and how to measure retargeting effectiveness. Yet, existing research has not investigated how ad content and web content in which the ad is placed interact to impact the effectiveness of retargeted advertising. In this research, we conduct a large-scale field experiment with an automobile manufacturer, whose sales are offline, to investigate how ad content and web content congruency influence four different measures of retargeting effectiveness: ad clicks, website visits, engagement, and soft-conversions. We find that while ads with price content are typically more effective, ads with product content are more effective in websites whose content is congruent with the advertised brand for measures that are closer to the purchase decision, namely, engagement and soft-conversions. Importantly, we find that placing an ad in congruent (vs. non-congruent) web content is more effective for both ad content types across all effectiveness measures (except clicks). Finally, we find an association between website types (local or general newspapers, topic magazines, ecommerce, etc.) and retargeting effectiveness. Our findings have actionable implications for advertisers and theoretical implications for marketing researchers.

Thursday, 3PM

TD04

Tuttle - Lobby Level

Advertising: Consumer Response III

Contributed Sessions

2 On the Interaction Between Television and Branded Search Advertising and Its Implications for Real-Time Syncing

Ivan A. Guitart[1], Guillaume Hervet[2], [1]EMLYON, Ecully, France; [2]Université de Lausanne, Lausanne, Switzerland.

Although the adoption of real-time syncing services - that is, services that synchronize search engine and television ads - is rising, there is still limited evidence about their effectiveness. Real-time syncing can only increase revenues if television and search advertising interact. To document the existence and sign of this interaction, we ran a field experiment that randomized the presence of branded text and shopping search ads across geographic regions during the execution of a television advertising campaign. The results show that the elasticity of website visits to television advertising is 10.2% higher when text ads are enabled (vs. paused). This elasticity is 7.8% higher when both text and shopping ads are enabled (vs. paused). Television ads significantly decrease the conversion rate, but enabling shopping ads attenuates this decrease by 64.8%. These results show that search and television ads interact, which is necessary for a real-time syncing strategy to increase revenues. Because the interactions occur at different stages of the path to purchase, we run a profitability analysis to assess the implications for real-time syncing. The analysis indicates that using a real-time syncing strategy during a 100-gross rating point campaign increases profits by up to 4.9% compared with strategies that do not coordinate search and television ads.

Thursday, 3PM

TD04

Tuttle - Lobby Level

Advertising: Consumer Response III

Contributed Sessions

3 Multi-Screen Browsing Behavior

Fanglin Chen[1], Masakazu Ishihara[2], Hiroshi Kumakura[3], [1]University of Miami, Miami, FL, [2]New York University, New York, NY, [3]Chuo University, Tokyo, Japan. Contact: flchen@bus.miami.edu

Although we have seen a huge move from traditional media toward mobile devices in the past decade, people still spend an average of more than three hours watching TV each day. However, TV viewers no longer devote their full attention, and a majority of consumers use at least one other digital device at the same time. Multi-screeners present challenges and opportunities for both TV broadcasters and advertisers to adapt to the media format and content that audiences are consuming. We investigate people’s behavior of TV viewing and web browsing at the same time. Specifically, we study (1) the driving forces of multi-screening, i.e., under what circumstances people switch to another screen while watching TV, (2) the content of multi-screening, i.e., what activities people perform on other digital devices, and (3) the consequences of multi-screening, i.e., how multi-screening influences people’s interactions with TV commercials and TV programs. We use minute-to-minute data that contain TV viewing and web browsing information of around 4,000 individuals in Japan from April 2017 to April 2018. The data distinguish between live and time-shifted TV viewing and indicate whether the content is watched or skipped for time-shifting. This information enables us to infer unobservable consumer preferences and attention beyond observable demographics and behavior patterns. We find the differences in the time spent and the types of web pages visited on other screens at various stages of TV programs and TV commercials. Also, multi-screening does not necessarily hurt the consumption of TV content but could also play a complementary role.

Thursday, 3PM

TD05

Gusman - Lobby Level

Marketing Activism: Pushing the Boundaries of Firm and Pushing the Boundaries of Marketing

Panel Session

Session Chair

Peren Ozturan, Netherlands.

Thursday, 3PM

TD05

Gusman - Lobby Level

Marketing Activism: Pushing the Boundaries of Firm and Pushing the Boundaries of Marketing

Panel Session

2 Panelist
Sundar Bharadwaj, University of Georgia, Athens, GA

Thursday, 3PM

TD05

Gusman - Lobby Level
Marketing Activism: Pushing the Boundaries of Firm and Pushing the Boundaries of Marketing
Panel Session

3 Panelist
Kimberly A. Whitler, University of Virginia, Charlottesville, VA

Thursday, 3PM

TD05

Gusman - Lobby Level
Marketing Activism: Pushing the Boundaries of Firm and Pushing the Boundaries of Marketing
Panel Session

4 Panelist
Peeter Verlegh, Vrije Universiteit, Amsterdam, Netherlands. Contact: p.verlegh@vu.nl

Thursday, 3PM

TD05

Gusman - Lobby Level
Marketing Activism: Pushing the Boundaries of Firm and Pushing the Boundaries of Marketing
Panel Session

1 Moderator
Peren Ozturan, 1</sup
A recent flourishing stream of research in marketing (e.g., Bhagwat et al. 2020; Hydock, Paharia and Blair 2020; Mukherjee and Althuizen 2020; Vredenburg et al. 2020; Wang et al. 2022) suggest we are now expanding the role of the firm much wider than what Coase (1937) or Williamson (1981) had imagined. We are no longer discussing the make or buy decisions or examining the consumer-firm interactions from a transaction-consumption point of view, but rather investigating a stakeholder orientation (Kumar 2018; Kumar and Rajan 2017) that goes beyond Drucker's famous adage: "The purpose of a business is to create and keep a customer." Today, there is overt pressure that firm leaders "take a stand" on sociopolitical issues that are not directly tied to firm products and services (Evans 2022a, 2022b; Stoppart 2022). In this panel session, we consider these trends and take on various perspectives in marketing i.e., behavioral, strategic, and modeling to evaluate the marketing outcomes for the brands and their stakeholders in the global marketplace. What is your opinion? Should brands serve a sociopolitical purpose or focus on their offerings' functional benefits e.g., taste of their ice-cream, calories of their soft-drink, and comfort of their sneakers? Join the session to learn about emerging research and perspectives in the domain. References: Bhagwat, Yashoda, Nooshin L. Warren, Joshua T. Beck, and George F. Watson IV (2020), "Corporate Sociopolitical Activism and Firm Value," Journal of Marketing, 84 (5), 1-21. Coase, Ronald H. (1937), "The Nature of the Firm," Economica. 4(16): 386-405. (As reprinted in G. J. Stigler & K. E. Boulding (Eds.). 1952. Readings in Price Theory, pp. 331-351. Chicago: Richard D. Irwin, Inc.). Evans, Judith (2022a), "Ben & Jerry's vs Unilever," Financial Times; London (UK) (October 12), 21. Evans, Judith (2022b), "Climate Summit Sponsor Coca-Cola Found to Have Increased Plastic Use," Financial Times; London (UK) (November 3), 11. Hydock, Chris, Neeru Paharia, and Sean Blair (2020), "Should Your Brand Pick a Side? How Market Share Determines the Impact of Corporate Political Advocacy," Journal of Marketing Research, 57, 1135-1151. Kumar, V. (2018), "Transformative Marketing: The Next 20 Years," Journal of Marketing, 82 (4), 1-12. Kumar, V. and Bharath Rajan (2017), "What's in It for Me? The Creation and Destruction of Value for Firms from Stakeholders," Journal of Creating Value, 3 (2), 142-56. Mukherjee, Sourjo and Niek Althuizen (2020), "Brand Activism: Does Courting Controversy Help or Hurt a Brand?" International Journal of Research in Marketing, 37 (4), 772-88. Sheth, Jagdish (2020), "Business of Business is More Than Business: Managing During the Covid Crisis," Industrial Marketing Management, 88, 261-264. Stoppard, Lou (2022), "Brand Activism Urged to Be Meaningful - Not Just Marketing," Financial Times; London (UK) (June 13), 5. Vredenburg, Jessica, Sommer Kapitan, Amanda Spry, and Joya A. Kemper (2020), "Brands Taking a Stand: Authentic Brand Activism or Woke Washing?" Journal of Public Policy and Marketing, 39 (4), 444-460. Wang, Yang, Marco Shaojun Qin, Xueming Luo, Yu (Eric) Kou (2022), "Frontiers: How Support for Black Lives Matter Impacts Consumer Responses on Social Media," Marketing

Science, 41 (6), 1029-1044. Williamson, Oliver E. (1981), "The Economics of Organization: The Transaction Cost Approach," American Journal of Sociology, 87 (3), 548-577.

Thursday, 3PM

TD06

Marti - Lobby Level

Marketing Strategy:Marketing Finance II

Contributed Sessions

Session Chair

Marc Fischer, University of Cologne, Köln, Germany.

Thursday, 3PM

TD06

Marti - Lobby Level

Marketing Strategy:Marketing Finance II

Contributed Sessions

1 The Impact of Voluntary Disclosure of Customer Information on Firm Value

Mu Li[1], Mahima Hada[2], Ljubomir Pupovac[3], [1]Baruch College, City University of New York, New York, NY, [2]Baruch College, CUNY, New York, NY, [3]University of New South Wales, Sydney, Australia.

Customers present the main source of a firm's revenue and relationships with customers are one of the key factors of firm success. Managers spend significant resources establishing and retaining strong relationships with their customers. Consequently, customer information is important for investors to make investment decisions. To reduce customer information asymmetry, the U.S. Securities and Exchange Commission (SEC) required all public firms to disclose sales to major customers that account for more than 10% of the selling firm's consolidated sales. Disclosing sales to minor customers that account for less than 10% of the sales and disclosing either major or minor customers' names are voluntary. Although managers are interested in the financial value of this voluntary disclosure, no studies to date have explored the impact of voluntary disclosure of customer information on firm value. Using a sample of 1,225 original equipment manufacturers and robust econometric methods, the authors find that the higher firm's advertising intensity is, the more positive the effect of disclosing either major or minor customers' names on firm value but the more negative the effect of disclosing sales to minor customers on firm value. They also document that the higher firm's SG&A expenses are, the more negative the effect of disclosing either major or minor customers' names on firm value. Overall, this research makes theoretical contributions to both voluntary disclosure literature and marketing-finance interface literature. This research also provides insights to firms' managers to make the strategic decision on voluntary disclosure of customer information.

Thursday, 3PM

TD06

Marti - Lobby Level

Marketing Strategy:Marketing Finance II

Contributed Sessions

2 Evaluating Marketing Performance: How Aligned are the Preferences of Company Executives, Investors, and Academics?

Marc Fischer, University of Cologne, Köln, Germany. Contact: marc.fischer@wiso.uni-koeln.de

Consider a marketing campaign with no specific goal. Which is more successful: one that generates more awareness but has a relatively lower sales impact, or one that shows the opposite pattern of measured performance? By answering such questions, managers reveal their implicit performance metric preference. This preference, however, does not necessarily match the actual use of metrics, which is driven and limited by factors such as organizational barriers, traditions, data availability, and method expertise. Thus, little is known about which type of performance measure managers inherently prefer. The author uses a choice-based conjoint experiment to gauge managers' inherent preferences for measuring the performance of an integrated marketing campaign in terms of customer outcomes, product-market outcomes, and financial outcomes. The study produces new and unexpected results about different stakeholders' preferences for the type of performance measurement when decisions are not subject to real-world restrictions. While marketing academics prefer product-market outcomes over customer and financial outcomes, practitioners show the exact opposite preference structure. Moreover, the preference pattern does not vary across marketing and non-marketing top executives as well as investors. Drawing on the well-known principal-agent theory, the author offers a new approach that explains these surprising results.

Thursday, 3PM

TD07

Merrick 1 - Lobby Level
Influencer Marketing Track: Special Session 4
Special Session

Session Co-Chair
Maximilian Beichert, Mannheim, Germany.

Thursday, 3PM

TD07

Merrick 1 - Lobby Level
Influencer Marketing Track: Special Session 4
Special Session

Session Chair
Andreas Lanz, HEC Paris, Paris, France.

Thursday, 3PM

TD07

Merrick 1 - Lobby Level
Influencer Marketing Track: Special Session 4
Special Session

1 Marketing Ethics Framework for the use of Endorsements, Testimonials, and Reviews in Marketing: Public Policy and Legal Case Analysis
Ana Babic Rosario[1], Francesca Sotgiu[2], Bruce Klaw[1], [1]University of Denver, Denver, CO, [2]Vrije Universiteit Amsterdam, Amsterdam, Netherlands.
Despite policy on the use of endorsements, testimonials, and reviews in marketing (e.g., Federal Trade Commission [FTC] Act, Consumer Review Fairness Act), companies are overwhelmingly engaging in unfair business practices, e.g. not disclosing incentivized reviews, adding "gag" clauses to contracts so consumers cannot post negative reviews, censoring negative reviews on their websites. We propose an interdisciplinary(marketing and business ethics & legal studies) research to (1) analyze public policy and (FTC) cases to understand the nature and effectiveness of existing enforcement mechanisms and (2) design a marketing ethics framework to guide policy-makers to help align firm goals with those of societal stakeholders.

Thursday, 3PM

TD07

Merrick 1 - Lobby Level
Influencer Marketing Track: Special Session 4
Special Session

2 Regulating Influencer Markets
Ruobing Han[1], Tianshi Mu[2], [1]Stanford, Stanford, CA, [2]Georgetown, Washington, DC, Contact: robinhan@stanford.edu
In this paper, I study the economics of influencer markets with evidence from China's leading livestreaming platform. Consumer attention is scarce and concentrated at the top. Two people, the King and Queen, control about 60% of consumer traffic and GMV sales. By studying an exogenous shock where the Queen was banned due to tax evasion, I can see how the market structure changed and how this change would impact the other influencers, consumers, and brands. I find the prices of the same items advertised by the remaining influencers are higher by 3%, and consumers end up paying 4% higher. But I find no clear evidence of change of product variety. Also, the other major influencers could not recover from the demand loss due to losing a superstar, even when they supplied more labor time by livestreaming longer. Hence the shock to the market structure has a long-standing adverse effect on the platform. The managerial implications are, using influencers to grow a platform is path-dependent, and superstar influencers may disintermediate the platform. We illustrated why superstar influencers could be a concern for the platform using a simple model. Intuition is the platform could not be monopolistic, and, the superstars may have market power, so the platform could not fully extract all surplus superstars created. To rationalize the reduced-form patterns, we structurally model the consumer demand for influencers as bundling choices. This model would capture the tradeoff in the platform's superstar strategy: the countervailing forces between the market expansion effect and the cannibalization effect from the superstar onto the other influencers. I find superstar influencers have positive net consumer traffic spillover on some competing influencers. Given the complementarity between superstars and other influencers, the platform should also be very careful when steering consumers away from the superstars. To implement

such interventions, we write down the platform's objective functions given its bargaining with influencers and solve for the optimal exposure of influencers to consumers.

Thursday, 3PM

TD07

Merrick 1 - Lobby Level
Influencer Marketing Track: Special Session 4
Special Session

3 Gender Bias in Consumer Comments and Influencers' Choices of Products to Review

Michelle Song[1], Jeremy Yang[2], [1]Boston College, Boston, MA, [2]Harvard University, Boston, MA

Consumers are increasingly seeking product reviews through influencers. However, the gender representation in product reviews is typically imbalanced, where products with more male/female users are reviewed by more male/female influencers; in other words, more influencers review gender-compliant rather than gender-defying products. Our study examines to what extent this influencer gender imbalance is driven by consumer feedback using Twitch data. Twitch is the largest video game livestreaming platform where games have large variances in players' gender distribution and comments are less subject to influencers' censorship. We investigate three main questions leveraging a moderation policy change that discourages hateful conduct in March 2018. First, do influencers receive more hateful comments when reviewing gender-defying games before and after the policy change, holding review quality fixed? Second, do influencers review fewer gender-defying games after receiving hateful comments? Third, does the exit of gender-defying influencers drive away gender-defying players from a game and thereby decrease its sales? We discuss how biased consumer comments could reduce diversity in information provision, its implications for influencers, players, and game developers, as well as the role of platforms in regulating the information environment.

Thursday, 3PM

TD07

Merrick 1 - Lobby Level
Influencer Marketing Track: Special Session 4
Special Session

4 The Dark Side of Influencer Marketing - the Role of Impulse Buying and Product Returns

Sarah Amsl[1], Maximilian Beichert[2], Andreas Bayerl[2], David Dubois[3], [1]Johannes Kepler University, Linz, Austria; [2]University of Mannheim, Mannheim, Germany; [3]INSEAD Business School, Fontainebleau, France. Contact: sarah.amsl@jku.at

Influencer marketing has grown into a $16.4 billion industry by 2022. More than 90% of companies consider influencer marketing as a critical advertising channel to promote their products and services. Identifying influencers who can authentically represent the brand and drive positive ROI remains the biggest challenge for marketers wishing to take advantage of this opportunity (Influencer Marketing Hub, 2023). However, influencer marketing, as well as other advertising channels, lead to product returns which can harm the profitability and sustainability, especially, for fashion retailers. For example, the perceived credibility and authenticity of influencers induce impulse buying behavior and often result in perceptions of regret and dissatisfaction towards the purchased product. Consequently, we expect for such perceptions higher return rates. To test this expectation, we combined sales data from a leading European fashion brand resulting from Instagram postings (with unique and directly attributable discount codes) of about 5,000 influencers with more than 45,000 sponsored postings leading to a preliminary revenue of €160,000,000 and product returns worth €89,000,000 resulting in a revenue of €71,000,000. By analyzing the textual components of the influencers' postings for the brand we explore the sentiment and its impact on impulse buying behavior and product returns. We contribute to the marketing literature by investigating the effect of both the influencer and the sponsored posting characteristics on downstream return rates for the brand. Based on that, we derive recommendations for not only effective but also sustainable influencer marketing strategies.

Thursday, 3PM

TD08

Merrick 2 - Lobby Level
Digitization 4: Social Platforms
Special Session

Session Co-Chair

Giorgos Zervas, Boston University School of Management, Brookline, MA

Thursday, 3PM

TD08

Merrick 2 - Lobby Level
Digitization 4: Social Platforms
Special Session

Session Co-Chair
Ayelet Israeli, Harvard Business School, Boston, MA

Thursday, 3PM

TD08

Merrick 2 - Lobby Level
Digitization 4: Social Platforms
Special Session

Session Chair
Pinar Yildirim, University of Pennsylvania, Philadelphia, PA

Thursday, 3PM

TD08

Merrick 2 - Lobby Level
Digitization 4: Social Platforms
Special Session

1 Identity and Economic Incentives
Kwabena Donkor[1], Eugen Dimant[2], Lorenz Goette[3], Michael Kurschilgen[4], Maximilian Müller[5], [1]Stanford University, Stanford, CA, [2]University of Pennsylvania, Guiyang, China; [3]University of Lausanne, Lausanne, Switzerland; [4]UniDistance Swiss, Sierre, Switzerland; [5]Institute on Behavior & Inequality, Bonn, Germany.
This paper examines to what extent identity-conforming consumption or investment decisions are driven by identity-specific beliefs and identity-specific preferences. We first present a model where identity distorts individuals' beliefs about uncertain outcomes and imposes psychic costs on identity-incongruent actions. Then, using two large field experiments on soccer betting in Kenya and the UK, we experimentally varied material incentives for betting on matches where soccer fans are supporters or neutral observers of the teams playing. We find that soccer fans have overoptimistic (underconfident) beliefs about identity congruent (incongruent) outcomes rather than neutral outcomes. Finally, we combine the model with respondents' portfolio allocations across the potential outcomes of different matches and find that, on average, respondents undervalue gains from identity-incongruent assets by 16% to 26%. These identity-specific preferences account for 20-30% of the gap in investments between neutral observers and supporters.

Thursday, 3PM

TD08

Merrick 2 - Lobby Level
Digitization 4: Social Platforms
Special Session

2 Wisdom of Some Crowds: Predicting Investors Success in a Social Trading Platform
Yael Karlinsky-Shichor[1], Verena Schoenmueller[2], Shimon Kogan[3], Barak Libai[3], [1]Northeastern University, Boston, MA, [2]ESADE, Barcelona, Spain; [3]Reichman University (IDC), Herzliya, Israel.
The emerging trend of social trading allows individuals to make financial investments through observation of other users' investment decisions. Using nearly 300K investment decisions on Etoro, a leading social-trading platform in which users allocate funds to investors by following them, we identify a group of followers whose following decisions are predictive of the investors' success and whose returns on the platform over time are higher-than-average. The oracle followers strategy yields higher returns than other investment strategies such as following the most popular investors or following investors randomly. We find that followers who are also investors themselves are less predictive than non-investor followers. However, the higher the investor's own returns, the more predictive they are of other investors' success.

Thursday, 3PM

TD08

Merrick 2 - Lobby Level
Digitization 4: Social Platforms
Special Session

3 The Value of Brand Community in Social Commerce: A Field Experiment on Wechat

Jeremy Yang[1], Max MA[2], [1]Harvard University, Boston, MA, [2]University of the Chinese Academy of Sciences, Beijing, China.

Social commerce—the process of buying and selling products directly within a social media platform—is expected to surpass $50 billion by 2023 in the US. Even though it is quickly expanding, the US market is still in its infancy compared with China. Social commerce in China, which is a decade ahead of US, is projected to reach $475 billion in 2023. Social media allow brands to build communities, engage members with content, and remove frictions by reducing the steps taken from discovery to purchase. It is widely believed to be effective in increasing brand loyalty and repeated purchase among practitioners. However, estimating the causal effect of joining a brand community on sales is challenging given that customers are self-selecting into these communities. In this paper, we present results from a large-scale three-wave field experiment that randomly solicits about 60K existing customers of a brand to join its community on WeChat in May and June 2022. We investigate four main questions. First, does joining the community increase sales volume and value? Second, how does the effect change in the short vs. long term? Third, is the effect larger on certain type of customers? What is the mechanism? Fourth, is there a spillover effect on other channels such as brand's e-commerce website? Are they substitutes or complements? We also discuss the implications of brand community as a sales channel and customer relationship management tool.

Thursday, 3PM

TD08

Merrick 2 - Lobby Level
Digitization 4: Social Platforms
Special Session

4 Personalized Newsfeeds and User Engagement: An Empirical Evaluation of the Reddit News Feed

Alex Moehring, MIT, Cambridge, MA

Digital platforms must algorithmically curate content for their users due to the quantity of content available. Increasingly, social media platforms curate content in a personalized manner with engagement occupying a prominent role in the objective function. Here, we study the impact of engagement maximization on the quality, slant, and diversity of news users engage with using data from the popular social media platform Reddit. First, we leverage knowledge of the platform's ranking algorithm from Reddit's open source code to estimate the causal effect of rank on engagement using a regression discontinuity design. Using the estimated position effects, we estimate a discrete choice model of engagement allowing for rich user-level heterogeneity in preferences. We then simulate the distribution of news articles users are exposed to and engage with under a personalized engagement maximizing ranking algorithm. Preliminary results show that engagement maximization leads to more polarized news diets, with users engaging with news from a less diverse set of outlets. Moreover, we find that the average credibility of news users engage with declines under the personalized algorithm. Finally, we study the impact of alternative ranking algorithms that explicitly promote credible and diverse news sources on short-term engagement metrics to better understand the trade offs faced by platforms.

Thursday, 3PM

TD09

Grove - Lobby Level
AI: Applications IV
Contributed Sessions

Session Chair
Khai Chiong, University of Texas-Dallas, Richardson, TX

Thursday, 3PM

TD09

Grove - Lobby Level
AI: Applications IV
Contributed Sessions

1 The Loan Officer'S Dilemma: Decision Making when Human Experts and Ai Algorithms Provide Conflicting Recommendations

Aaron Lyvers[1], Dipankar Chakravarti[2], [1]Virginia Tech, Blacksburg, VA, [2]Virginia Tech, Ellicott City, MD

AI algorithms are commonly used in business decisions and often are more capable than human experts in performing specific tasks (e.g., Dawes et al. 1989; Yeomans et al. 2018). However, despite enhanced capabilities, prior research reports mixed receptivity to AI algorithms from both

decision makers as well as decision targets (Jussupow et al. 2020). Although "algorithm aversion" is a common finding (Dietvorst et al., 2015, Longoni et al. 2019), other researchers (e.g., Logg et al. 2019) report "algorithm appreciation." Thus, decision makers, particularly those higher on numeracy, prefer algorithms over human experts, more so for objective (vs. subjective) tasks, when the decision affects *others* (vs. *themselves*) and when the algorithm is more accurate than the human expert.
We report three studies set in the context of a loan officer's decision on a consumer loan. Specifically, we focus on the extent to which the officer's decision aligns with the human expert (vs. the AI algorithm) when their recommendations conflict. Study 1 manipulates the recommendations of a human expert and an AI algorithm (approve/deny or deny/approve) on an application with a marginal FICO score. The results are consistent with algorithm aversion: participants align more with the human expert than the algorithm. Also, the algorithm is more likely to be overruled when it recommends denial. Study 2 additionally manipulates the accuracy levels of the human expert and the algorithm. Algorithm aversion is observed when the two recommenders are equally accurate (high or low). However, the effect is attenuated when the AI algorithm is known to be more accurate than the human expert. Notably, the human expert is penalized less for lower accuracy. Study 3 adds a manipulation of the decision maker's predisposition to approve/deny the loan. The results show a strong predisposition effect and replicate the high accuracy attenuation results in Study 2. However, both effects are moderated by the relative accuracy of the algorithm/human expert. We discuss the import of the results for AI applications in business decisions.

Thursday, 3PM

TD09

Grove - Lobby Level
AI: Applications IV
Contributed Sessions

2 Beings Bargain Better with Bots

Sumon Chaudhuri[1], Arnaud De Bruyn[2], [1]E, Cergy, France; [2]ESSEC Business School, Cergy, France. Contact: sumon.chaudhuri@essec.edu

Artificial Intelligence (AI) applications are used to automate several business processes that were traditionally carried out by human workers. One such business process is negotiation. With the advent of companies that sell autonomous negotiation systems like Pactum and RoboNegotiator, and many other companies developing this capability in-house, it has become important to develop an understanding of automated negotiation. Negotiation is a unique context from a theoretical point of view because the interactions between AI and human are strategic in nature, unlike the majority of research that has been done in this domain. Prior research has shown that consumers are averse to the use of algorithms for tasks previously conducted by humans (Dietvorst et al, 2014) and that anthropomorphization can be used to overcome this aversion (de Visser et al, 2016). This anthropomorphization is done primarily through textual or speech-based responses. We propose that in strategic interactions like negotiation, anthropomorphization of strategies also plays a major role in how consumers perceive the automated process. In a stylized bargaining game, we show that a supervised learning based human-like AI results in economic inefficiencies, whereas a reinforcement learning based payoff-optimizing AI results in negative reactions from the consumer. Using adversarial modelling techniques, we develop a strategy anthropomorphization approach that is able to generate win-win situations for the firm as well as the consumer, without sacrificing the consumers' subjective evaluations of the negotiation process. We discuss the theoretical and managerial implications of using this bot design as well.

Thursday, 3PM

TD09

Grove - Lobby Level
AI: Applications IV
Contributed Sessions

3 How the Voice of Human and Artificial Intelligence Agents Impacts Customer Purchases: Field Experiments

Siliang Tong[1], Xueming Luo[2], Zheng Fang[3], Jaakko Aspara[4], [1]Nanyang Technological University, Singapore, Singapore; [2]Temple University, Philadelphia, PA, [3]Sichuan University, Chengdu, China; [4]Aalto University, Helsinki, Finland. Contact: jack.tong@ntu.edu.sg

Most previous research has explored the associations between salespeople's voice features and customer perceptions. This research scrutinizes whether and how human and artificial intelligence (AI) agents' voice features may causally impact actual customer purchases, based on two randomized field experiments and an online experiment. In field experiment 1, we gauge the causal impact by directly manipulating the voice stability (e.g., variance in pitch, amplitude, and speed) of AI voicebot in the context of sales calls promoting a credit card business. Results not only identify the causal evidence that AI agents' voice stability and speech adaptivity can positively affect customer purchases, but also reveal a novel synergistic interaction effect between these two speech features. Field experiment 2 randomly assigns either human agents or the well-designed AI voicebot to conduct sales calls promoting consumer loans and leverages machine learning techniques to quantify human and AI agents' voice stability with variance in pitch, amplitude, and speed of speech. Results replicate those in the first experiment and add a new insight—compared with human agents, AI voicebots demonstrate a more stable voice (i.e., lower variance in pitch, amplitude, and speed) and a greater level of verbal adaptivity, which accounts for the superior sales performance of AI voicebots. Using a sample of Western customers, a follow-up online experiment replicates the synergistic effect between voice stability and speech adaptivity and uncovers the underlying mechanisms. Our findings provide useful managerial implications in terms of training human sales agents' voices and using AI voicebots to increase customer purchases.

Thursday, 3PM

TD09

Grove - Lobby Level

AI: Applications IV

Contributed Sessions

4 Ai and Ai-Human Based Salesforce Hiring Using Interview Videos

Ishita Sunity Chakraborty[1], Khai Chiong[2], Howard Dover[3], K. Sudhir[4], [1]University of Wisconsin, Madison, WI, [2]University of Texas-Dallas, Dallas, TX, [3]University of Texas at Dallas, Richardson, TX, [4]Yale School of Management, New Haven, CT, Contact: Khai.Chiong@utdallas.edu

We study the problem of AI and AI-human based candidate selection in salesforce hiring. Using videos of structured interviews and ratings from multiple recruiting experts on standard performance criteria, we develop an AI model of sales personnel recruitment by extracting theory-relevant objective measures of interviewee performance embedded in videos. Using the model, we address two issues: First, to aid explainability of the AI model, we assess what mode of unstructured data from the interview (text, audio and video) and what specific behaviors (e.g, body language, conversation style) drive AI predictions of salesperson's ability. Our time-stamped video data allows us to quantify two critical elements of salesforce interaction- style matching and real-time adaptation. These two features emerge as critical in predicting both top as well as bottom candidates. Second, we consider a hybrid AI-human model where we augment AI predictions with human interventions in a Bayesian framework. The hybrid model improves accuracy but increases cost (of human labor). Hence, we propose a cost-effective way of deploying AI in salesforce hiring with humans in the loop --- use AI for screening and augment it with human judgments based on early stages of interview for selection.

Thursday, 3PM

TD10

Oxford - Level 2

Digital Marketing: General

Contributed Sessions

Session Chair

Soogand Alavi, The University of Texas-Dallas, Richardson, TX

Thursday, 3PM

TD10

Oxford - Level 2

Digital Marketing: General

Contributed Sessions

1 Digital Financial Inclusion from Mobile Innovations: A Cross-Country Examination

Nandini Nim[1], Deepa Chandrasekaran[2], Youngjin Kim[3], [1]University of Texas at El Paso, El Paso, TX, [2]University of Texas-San Antonio, San Antonio, TX, [3]University of Texas at San Antonio, San Antonio, TX, Contact: youngjin.kim@utsa.edu

Much research has focused on financial inclusion, defined as a process that ensures the ease of access, availability, and usage of the formal financial system for all members of an economy. Recent technological advances have led to the introduction of digital financial products provided by formal financial players and new financial technology (Fintech or TechFin) companies enabling digital financial inclusion (DFI). DFI offers a transformative potential for bringing previously excluded populations into the banking and retail consumption spheres, especially in emerging markets, such as India and Brazil. Also, such financial tools have become particularly important to firms and customers in navigating retail consumption during the COVID-19 pandemic. Although market access and supply as well as customer adoption and usage are at the core of DFI, research in this area is still sparse in the marketing domain. In this paper, we address the research gap and determine whether and how DFI varies across consumer segments, countries and regions by leveraging a rich dataset for 60+ emerging markets (at different levels of economic growth) with a total of 60000+ consumers who have mobile money and neo-banking products (as a measure of DFI). We model DFI as a function of market-level variables that define market access and product supply, including a country's regulatory framework, social-structure, culture, and supply of neo-banking and personal finance products. We explore the unique structural impact of COVID-19 on the adoption and use of digital financial products. Our results indicate that DFI varies across consumer segments, defined by gender and income, and across regions. Our research explores the potential of financial inclusion and equity among marginalized populations, such as women and low-income consumers and can drive a better understanding of how to drive DFI by the designing of specific retail strategies.

Thursday, 3PM

TD10

Oxford - Level 2
Digital Marketing: General
Contributed Sessions

2 Non-Monetary Payment Forms in the News Industry

Elena Koch[1], Michel Clement[1], Felix Eggers[2], Petra Fuechtenbusch[1], [1]University of Hamburg, Hamburg, Germany; [2]Copenhagen Business School, Frederiksberg, Denmark.

The news industry faces challenges in selling content online because there is substantial competition from free competitors.
Research shows that users who consume content for free can hardly be transformed into paying customers. We replicate this finding with an incentive-aligned choice-based conjoint experiment (n=1,923 German consumers) that examines five monetary price models. The results show that about half of the consumers do not currently pay for online content and that this segment is not attracted to any of the price models. Our main research focus therefore lies on testing whether the segment of consumers who are reading news for free can provide value via non-monetary payment forms. Specifically, we examine paying with data (e.g., derived information via cookies or stated information via surveys), paying with attention (e.g., via ads), or paying with effort (e.g., via Human Intelligence Tasks or sharing processing power).
Overall, we test 23 forms of non-monetary payment and benchmark these options with monetary payments. The results based on a sample of 737 German consumers identify several options that generate value to publishers and are equivalent to paying less than €0.01 for the consumers, e.g., paying with stated (survey) data or with attention (ads).
Aside from the managerial contribution of this research, we add new theoretical insights to the literature that addresses willingness to pay for journalistic content and literature on non-monetary payment forms that were previously predominantly analyzed in isolation (e.g., regarding payment with data in privacy research).

Thursday, 3PM

TD10

Oxford - Level 2
Digital Marketing: General
Contributed Sessions

3 Dynamics of Firm-Consumer Interactions on Social Media Platforms

Sae Hoon Chang[1], Ceren Kolsarici[2], Selin Atalay[3], [1]Queen's University, Aurora, ON, Canada; [2]Queen's University, Kingston, ON, Canada; [3]Frankfurt School of Finance and Management gGmbh, Frankfurt am Main, Germany.

Social media platforms engendered a dynamic ecosystem for the propagation of content created by multiple users. Traditionally, firm-generated content (FGC) has primarily consisted of firm-to-many (FTM) communications with the source of the message being generated by firms for large groups of consumers. The emergence of social media platforms enabled consumers to publicly respond to FTM communications, which we refer to as Firm-to-One (FTO) communications. In this paper, we study the differences in consumer engagement in FTM and FTO contexts.
We investigate the message content-related factors deriving upper funnel and lower funnel consumer response for FTM and FTO communications using NLP methods and multiple regularization processes. We hypothesize that 1) consumer engagement is different for FTO and FTM messages since the persuasion knowledge is easily accessible

for the latter and 2) the affective, and informational components that derive engagement for these two types of communications are different.
Our contribution is three-fold. We investigate i) the differences between FTM and FTO communications that have not yet been studied in the literature, ii) in the dynamic social-media environment iii) with a rich range of affective, cognitive, and linguistic characteristics. The results from a large study conducted on Twitter show that the volume and type of engagement (i.e., lower vs. upper funnel) are different for FTM and FTO messages. Moreover, supporting hypothesis 2, the drivers of engagement vary between FTM and FTO signaling differences in consumer processing. For FTM, higher emotional messages regardless of the emotion (e.g. sad, happy, excited, angry) lead to higher upper and lower funnel engagement. While for FTO, emotional content has no effect on consumer response. In addition, while higher cognitive processing requirements have a negative effect on engagement in both contexts, the effect size is significantly larger for FTO, for which easy-to-understand functional words derive bigger responses in both the upper and lower funnel.

Thursday, 3PM

TD10

Oxford - Level 2
Digital Marketing: General
Contributed Sessions

4 Mitigating Gender-Based Algorithmic Bias in Social Media Advertising

Soogand Alavi, Ying Xie, The University of Texas-Dallas, Richardson, TX, Contact: soogand.alavi@utdallas.edu

Social media advertising plays a major role in spreading information about social issues and political participation opportunities. However, the factors that drive the dissemination of these ads are largely unknown for advertisers and researchers due to the proprietary nature of the ad delivery algorithms on these platforms. In this study, we analyzed all social issues and political ads published on Facebook and Instagram over a four-year period from 2019 to 2023 that were targeted *neutrally* (i.e. targeted to the entire US population regardless of gender, age, or interest). Our findings reveal significant variations in the delivery rate of these ads among different gender classes despite being neutrally targeted. This suggests a potential existence of a gender-based algorithmic bias in social media advertising delivery. We extract content design elements from the text and image of these ads using topic modeling and panoptic image segmentation, and find that certain designs skew ad delivery towards the female audience and others towards the male audience. To mitigate this skew towards a more equal ad distribution across genders, we propose a framework where ad design elements that create gender-based bias are identified, and a modified version of the ad that can ensure equal delivery is created using the style-based GAN architecture. Finally, we test the validity of our framework by running ads on Facebook to show that the modified designs indeed achieve more equal ad distribution across gender classes compared to the original ad designs.

Thursday, 3PM

TD11

Cambridge - Level 2
Meet the Editors I
Special Session

1 Moderator

Joseph Johnson, University of Miami, Coral Gables, FL

This session will include panelists from Journal of Marketing, Marketing Science, International Journal of Research in Marketing, and Journal of Service Research.

Thursday, 3PM

TD12

Trinity - Level 2
Branding: General I
Contributed Sessions

Session Chair

Giang Tue Trinh, University of South Australia, Adelaide, Australia.

Thursday, 3PM

TD12

Trinity - Level 2
Branding: General I
Contributed Sessions

Session Chair

John Dawes, Ehrenberg-Bass Institute, UniSA, Adelaide, Australia.

Thursday, 3PM

TD12

Trinity - Level 2
Branding: General I
Contributed Sessions

1 Share Dispersion of National Brands: The Role of Retailers

Robert Clark[1], Jean-Francois Houde[2], Xinrong Zhu[3], [1]Queen's University, Kingston, ON, Canada; [2]University of Wisconsin-Madison, Madison, WI, [3]Imperial College London, London, United Kingdom. Contact: x.zhu@imperial.ac.uk

We systematically study market share and product assortment dispersion of national brands in 25 consumer packaged goods industries across 199 markets and 109 retailers in the US. Previous findings by Bronnenberg et al. (2007,2009) highlight the persistent differences in market shares of national brands across markets. Using the same product categories as Bronnenberg et al. (2007), we show the important role of retailers in explaining the dispersion. We first document stylized facts that the distributions of national top brand shares are asymmetric across retailers, even among retailers competing in the same geographic market. The "share advantage" that a leading brand enjoys within a retailer is persistent across markets where the retailer is present and stable over time. We then specify and estimate a variance decomposition model to decompose the total variance in national brand shares and assortments into a Brand * Retailer component and a Brand * Market component. We find that 50% to 60% of the total variance is accounted for by the Brand * Retailer component, while the Brand * Market component only explains about 10% to 20% of the total variance. Our results suggest that the large market share dispersion of national brands is caused by strong asymmetries in how these brands are presented in different retailers, even under similar market conditions. Finally we provide evidence that long-term vertical relationships between retailers and manufacturers is a key explanation for the strong asymmetries in national top brand shares across retailers.

Thursday, 3PM

TD12

Trinity - Level 2
Branding: General I
Contributed Sessions

2 Designer and Consumer Perceptions of Premium and Luxury: A Social Constructionist Analysis

Yael Pedro[1], Enav Friedmann[2], [1]Shenkar college, Ramat Gan, Israel; [2]Ben Gurion University, Beer sheva, Israel. Contact: enavfrie@bgu.ac.il

This study examines the luxury fashion designers' impact on consumers' perceptions of premium and luxury brands using a social constructionist theory of art. A triangulation of methodologies was used in three studies, including sentiment analysis of tweets, qualitative interviews with worldwide premium and luxury designers, and a quantitative consumer survey. Results showed that 73.7% of consumer tweets were positive, but the interviews with the designers showed a less optimistic perspective. We found that fashion designers generally classified their brand category lower than that of the consumers (e.g., if it was luxury designers tend to classify it as premium, while consumers classified it as luxury). Consumers expressed higher satisfaction levels with luxury brands than designers, supporting the theory of different realities. Brand value is constructed by the interactions between designers and consumers, as consumers' the luxury brand value depends on the designers' perspectives about their work. The study highlights that designers' perceptions reduce the luxurious value of a brand and suggests that stakeholders should ensure alignment between designers and the brand's value in their luxury brand strategy planning.

Thursday, 3PM

TD12

Trinity - Level 2
Branding: General I
Contributed Sessions

3 The Role of E-Commerce Website use for Increasing Dtc Brand Uniqueness in Cross-Bordere- Commerce: An Empirical Study

Rong Qin[1], Ximin Lu[2], Zhonghuan Wu[1], Ruihe Yan[3], Chunlin Duan[4], [1]South China University of Technology, Guangzhou, China; [2]Wuhan University, Wuhan, China; [3]Hefei University Of Technology, Hefei, China; [4]South China

University Of Technology, Guangzhou, China. Contact: qrlonglong@163.com

In the process of accelerated digital transformation of the world economy, cross-border e-commerce(CEBC) has become an important form of trade digitization. Behind the development, a large number of fast-growing Internet-based DTC brands have emerged in China, such as SHEIN,Insta360,Florasis etc. They claim to have a high degree of independence and uniqueness. In contrast to the DTC model, some CEBC brands positioning uniqueness choose platforms such as Amazon, AliExpress to enter the market. So how does a DTC brand use e-commerce website to demonstrate the brand uniqueness claim compared to a third party platform? What is the role of e-commerce website in increasing the uniqueness of DTC brand? How does it work?While there have been many studies on CEBC and brand websites, there are fewer studies related to DTC brands and their independent e-commerce websites.To solve this issue, we consider the e-commerce website as an information system that consumers use to communicate with the DTC brand and thus perceive the uniqueness of the DTC brand. Based on adaptive structuration theory(AST) perspective,we will develop a DTC brands CEBC dedicated research model that consider CEBC consumption motives (utilitarian, social,and hedonic) as inputs, information system usage patterns(exploitive and explorative) as processes, and brand uniqueness perceptions as outputs. A partial least squares structural equation model is selected to analyze a sample of 260 Chinese DTC brands' CEBC consumers from around the world to validate the framework of the study. The research results can help us 1) deepen our understanding of the role of standalone websites from an information systems perspective 2) identify a potential mechanism that can explain why and how international consumers increase their perception of brand uniqueness when using e-commerce websites. In addition, this research can extend the application of AST to new fields and the research results can also provide suggestions for DTC brands to design and optimize their e-commerce websites to achieve marketing goals.

Thursday, 3PM

TD12

Trinity - Level 2

Branding: General I

Contributed Sessions

4 Brand Exploration in Metaverse: Effects of Avatar Resemblance on Brand Attitude

MinChung (MC) Kim[1], Jaehyun Lee[1], Yeolib Kim[2], YongHee Kim[3], [1]Ulsan National Institute of Science and Technology (UNIST), Ulsan, Korea, Republic of; [2]Ulsan National Institute of Science and Technology, Ulsan, Korea, Republic of; [3]Pusan National University, Busan, Korea, Republic of. Contact: mckim@unist.ac.kr

A 'brand' metaverse is a virtual space where customers experience the brand via digital avatars. With the advancement of augmented and virtual reality technologies, a brand metaverse is an important medium for communicating the brand with customers. In this study, we focus on the resemblance between a customer's self and his/her avatar (i.e., self-avatar resemblance) in the brand metaverse and examine its influence on brand attitude. Prior studies examine self-avatar resemblance exclusively in non-brand related virtual gaming platforms and test its effects on identity perception and immersion in the platforms. However, few studies probe the extent to which self-avatar resemblance influences customers' exploration in a brand metaverse and their attitude toward the brand. We fill this research gap by uncovering the positive effects of self-avatar resemblance on brand attitude and purchase intentions. Moreover, we proffer that attitude toward the brand metaverse platform mediates the relationship between self-avatar resemblance and brand attitude. In addition, based on the interactive nature of metaverse, we hypothesize copresence�the number of avatars exploring the brand metaverse at the same time�to be a moderator which strengthens the mediation. We conduct an experiment using a fashion brand's virtual world positioned in a popular metaverse platform. In this experiment, participants create an avatar and freely roam around in the brand metaverse with their avatar. By reviewing the screen recording of each participant's brand exploration in the metaverse, we measure self-avatar resemblance and other constructs. We also collect responses from questionnaires designed to measure attitudinal and behavioral variables. With the accumulated data, we test the hypotheses using partial least square structural equation model and find the results largely consistent with the hypotheses. With the findings, we provide important and interesting implications to marketing practitioners considering and doing 'metaverse marketing.'

Thursday, 3PM

TD12

Trinity - Level 2

Branding: General I

Contributed Sessions

5 **Where is the Brand Growth Potential? an Examination of Buyer Groups**

Giang Tue Trinh[1], John G. Dawes[2], Byron Sharp[1], [1]University of South Australia, Adelaide, Australia; [2]Ehrenberg-Bass Institute-UniSA, Adelaide, Australia. Contact: giang.trinh@marketingscience.info

Practitioners and academics have long discussed strategies for brand sales growth. A recent example is an industry debate in which different brand growth strategies were argued: https://www.mmaglobal.com/thegreatdebate (MMA Global & Neustarr, 2021). A central question in this arena is whether a brand should focus on its heavy, light, or non-buyers in its efforts to grow its sales. This study contributes to our knowledge about how sales growth can occur by investigating the potential contribution these three buyer groups can make to any sales gain. Using both a simulation study and an empirical study of purchases of approximately 12,400 households in the UK, across different brands, categories and time periods, we show that almost any brand's headroom growth potential lies mostly in light or non-buyers of that brand. Even for large brands with high penetration the growth potential of light brand buyers eclipses heavy brand buyers.

Thursday, 3PM

TD13

Escorial - Level 2

The Role of Information in Marketing

Special Session

Session Chair

Doug J. Chung, University of Texas at Austin, Austin, TX

Thursday, 3PM

TD13

Escorial - Level 2

The Role of Information in Marketing

Special Session

1 **Sales Goal Reminders on Motivation and Information Acquisition**

Doug J. Chung[1], Dongkyu Chang[2], [1]University of Texas at Austin, Austin, TX, [2]City University of Hong Kong, Hong Kong, Hong Kong.

This study examines the role of goal reminders on salespeople's motivation and their information-acquisition behavior. To do so, we collaborate with a major Nordic organization to conduct a field experiment sending goal reminders to salespeople on their quota achievement. The field experiment involved more than 450 sales employees across 100 retail stores. The results indicate that goal reminders have a positive effect on performance, specifically for low-performing salespeople through an increase in their motivation. Information acquisition, in the form of goal-progress monitoring, can help employees with their effort provision. However, goal reminders suppress employees' willingness to acquire information—the ostrich effect—and, thus, can adversely affect their performance.

Thursday, 3PM

TD13

Escorial - Level 2

The Role of Information in Marketing

Special Session

2 **Managing Relational Sales: The Role of Behavior-Based and Outcome-Based Controls**

Byungyeon Kim[1], Doug J. Chung[2], [1]University of Minnesota, Minneapolis, MN, [2]University of Texas at Austin, Austin, TX

This study provides a dynamic structural analysis of an agent's behavior in response to behavior-based and outcome-based sales force control measures. The model accommodates both observable, quantifiable sales effort (e.g., number of sales calls) and unobservable, qualitative sales effort (e.g., attitude), as well as the dynamics in demand induced by customer goodwill. By understanding how multiple management levers—including incentives, route call planning and price promotions—jointly affect behavior, the study offers insights on optimal sales management policies. A series of counterfactual experiments demonstrate a trade-off between increasing the number of sales calls (behavior-based control) and offering additional incentives (outcome-based control); heterogeneous responses to reducing the level of price promotions in which some salespeople exert extra effort to mitigate the disadvantage; and how a firm can minimize the negative impact of reducing price promotions by utilizing different sales force control measures.

Thursday, 3PM

TD13

Escorial - Level 2

The Role of Information in Marketing

Special Session

3 Interactive Customer Feedback in the Digital Economy: When and How Should Creators Respond to Customers?

Minjee Sun[1], Matthew Osborne[2], [1]University of Iowa, Iowa City, IA, [2]University of Toronto, Misssissauga, ON, Canada. Contact: minjee-sun@uiowa.edu

Technological development has brought substantial changes to economic activities, especially those that require a high level of interactivity between companies and consumers. As a result, it has become widespread for content producers to solicit feedback from customers, and modify their market offerings in response to feedback. While content producers can receive their consumers' feedback in real-time, they still face a decision of whether and how to respond to such feedback. Feedback which is of low quality may not be worth pursuing. Moreover, even high-quality feedback may require substantial changes to a final product to be addressed properly, and hence the quality of a producer's response to feedback will likely be a function of the producer's ability and experience, in addition to the quality of customer feedback. In this paper, we empirically investigate how producers respond to different types of feedback from customers, and quantify the economic value of the response. To do so, we have collected a unique dataset from a webnovel platform, where we can observe reader feedback and writer modifications to the text. We apply natural language processing, text mining, and topic modeling to characterize readers' comments, quantify the changes in writers' novel contents, and further map the comments to the changed part of novel episodes. Our results suggest that the sentiment of comments, the number of comments associated with the novel's main topics, as well as the writers' characteristics are important drivers of modifications. We also find that, while in general, the modification enhances the outcome of novels, the comments relevant to the novel's key topics and the writers' characteristics matter for the sign and magnitude of outcomes.

Thursday, 3PM

TD14

Alhambra - Level 2

Game Theory: General II

Contributed Sessions

Session Chair

Vincent Mak, Cambridge Judge Business School, University of Cambridge, Cambridge, United Kingdom.

Thursday, 3PM

TD14

Alhambra - Level 2

Game Theory: General II

Contributed Sessions

1 Choice Deferral and Search Fatigue

Z. Eddie Ning[1], J. Miguel Villas-Boas[2], Yunfei (Jesse) Yao[2], [1]University of British Columbia, Vancouver, BC, Canada; [2]University of California, Berkeley, CA

When gathering information to make decisions, individuals often have to delay making a decision because the process of gathering information is interrupted, and the individual is not yet ready to make a decision. The paper considers a model of choice deferral based on time-varying search costs, potentially based on search fatigue, in which individuals have to strategically decide whether to defer choice, taking into account the current available information, and when they will have again a chance to gain further information. We find that individuals are more likely to defer choice when the amount of information gained when gathering information is greater, when there is an opportunity to gather information again sooner, when the individuals discount less the future, and when the likelihood of having search fatigue is lower. We also consider the case in which individuals incur costs of re-starting a process of information gathering, and when the individual has greater information about the extent of search fatigue.

Thursday, 3PM

TD14

Alhambra - Level 2

Game Theory: General II

Contributed Sessions

2 Binge Watching and Information Product Release Strategy

Ganesh Iyer[1], Zemin (Zachary) Zhong[2], [1]University of

California-Berkeley, Berkeley, CA, [2]University of Toronto, Toronto, ON, Canada. Contact: giyer@haas.berkeley.edu
Digital consumption, such as TV shows and serials, games and news consumption often feature the provider releasing a series of content episodes that form the whole product. In practice, some firms simultaneously release all episodes while others sequentially release them one at a time. We analyze the optimal release strategies when consumers experience disutility (anxiety cost) from delaying watching content which the firm has chosen to make available. This disutility can be seen as preferences over realized uncertainty of information, namely, the content is already available but the consumer has not yet resolved the uncertainty. The key trade-off is that while simultaneous release gives consumers flexibility in the timing of consumption, it may increase the cost of delaying consumption. Thus, the simultaneous release strategy may endogenously create higher anxiety costs and induce binge-watching. This has ex-ante implications for consumers' choice to purchase the product. We characterize the optimal design and how the strategic choice of the release strategy interacts with the design of content across episodes.

Thursday, 3PM

TD14

Alhambra - Level 2

Game Theory: General II

Contributed Sessions

3 Self-Preferencing in E-Commerce Marketplaces:Role of Sponsored Advertising and Private Labels

Fei Long[1], Wilfred Amaldoss[2], [1]University of North Carolina at Chapel Hill, Chapel Hill, NC, [2]Duke University, Durham, NC, Contact: fei_long@kenan-flagler.unc.edu

Traditionally, e-commerce marketplaces have enabled third-party sellers to sell to potential consumers and have earned commission from the sales. In recent years, e-commerce platforms have begun to leverage the private label and sponsored advertising to generate additional revenue. This raises the question of when and why a platform may seek to give preference to its private label in sponsored advertising, and what are its implications for consumers and third-party sellers. To examine this issue, we build a model where two horizontally-differentiated third-party sellers and one private label compete for a prominent ad slot to increase their respective demand. The platform can concede the ad slot to third-party sellers, generate ad revenue and increase the commission from third-party sales. Alternatively, the platform can contest for the ad slot, place its private label in a prominent position, increase private label sales, and thus evince self-preference. Interestingly, we find that such self-preferencing on the part of the platform improves the profits of third-party sellers. Counter to our intuition, self-preferencing hurts consumers even though the platform offers the private label at a price lower than the price of third-party sellers. It is optimal for the platform to concede the ad slot to third-party sellers when sponsored advertising is more effective in boosting demand or when the commission rate is low. In contrast to our intuition, the platform can hurt third-party sellers when it concedes the ad slot to them though it benefits consumers and increases the total surplus. If the commission rate is endogenous and if the third-party sellers' outside option is large, the platform concedes the ad slot to third-party sellers and yet hurts their profits. Moreover, the private label and sponsored advertising are not two independent sources of profits. They can function as complements or substitutes in improving the platform's profits if the commission rate is exogenous, but become complements if the commission rate is endogenous.

Thursday, 3PM

TD14

Alhambra - Level 2

Game Theory: General II

Contributed Sessions

4 Fairness and Transparency in One-To-Many Bargaining Behavior

Vincent Mak[1], Rami Zwick[2], [1]Cambridge Judge Business School, University of Cambridge, Cambridge, United Kingdom; [2]University of California, Riverside, Riverside, CA, Contact: v.mak@jbs.cam.ac.uk

We report an experiment designed to study one-to-many bargaining behavior and how it is influenced by fairness concern and information transparency. We base our setup on a structured alternating-offer bargaining model in which a buyer procures complementary items from two heterogeneous sellers with endogenous choice of the order of bargaining. In addition, we implemented an information transparency manipulation regarding whether the sellers were informed about each other's offers/counteroffers with the buyer. Experimental behavior exhibited deviations from equilibrium predictions that did not differ significantly by information condition, suggesting that sellers were not significantly influenced by direct social comparison between each other. Further analysis suggests that each seller demanded splitting the value of the deal approximately half-half with the buyer as a normative fairness benchmark. The buyers, on the other hand, did not have a demand for fairness that was based on a fairness benchmark.

Thursday, 3PM

TD15

Michaelangelo - Level 2
CRM: Customer Journey and CLV II
Contributed Sessions

Session Chair
Cleo Silveira, [1</sup]

Thursday, 3PM

TD15

Michaelangelo - Level 2
CRM: Customer Journey and CLV II
Contributed Sessions

1 Effective Customer Evaluation in Acquisition: A Model of Detecting Incentive Exploiters
Liangbin Yang, Syracuse University, Syracuse, NY
In today's competitive and saturated business landscape, acquiring customers has become increasingly challenging and expensive. Firms often extend generous incentives to secure the most valuable customers. Unfortunately, some prospects take advantage of these bonuses and rewards by creating new accounts solely to exploit them and then becoming inactive afterward. How can companies identify potential incentive exploiters at the beginning of the customer journey? This is challenging due to a lack of clarity in customer acquisition (e.g., customers may open accounts, but it's unclear if they will remain active) and limited data on new customers in acquisition. This study presents a new model to detect incentive exploiters during the early stages of the customer journey and shows that the model outperforms existing benchmarks in identifying and predicting such behavior. The empirical findings emphasize the importance of detecting incentive-exploiting behavior and show how the proposed model could significantly improve the ROI of acquisition efforts. The study also provides valuable managerial insights into how companies could effectively evaluate customers in the acquisition, proactively prevent incentive exploiting behavior, strategically design better incentive campaigns, and so on.

Thursday, 3PM

TD15

Michaelangelo - Level 2
CRM: Customer Journey and CLV II
Contributed Sessions

2 Could Sales Agents' Incentives Backfire? Evidence from a Large Individual-Level Data in the Life Insurance Industry
Sevda Sattari[1], Miremad Soleymanian[2], Sana Mosalli[3], [1]Simon Fraser University, Burnaby, BC, Canada; [2]Simon Fraser University, Vancouver, BC, Canada; [3]Alzahra University, Tehran, Iran, Islamic Republic of. Contact: sevda_sattari@sfu.ca
Companies spend a considerable amount of annual marketing budget on acquiring new customers such as incentivizing salespeople; however, these efforts might not pay off in the long term as much as expected in terms of customer retention. In this empirical study, we investigate the determinant factors of consumer churn behaviour, in other words, consumer choice to terminate their life insurance contract. Moreover, we study the effect of incentivizing the sales agents by offering periodic promotions on customers' lapse decisions, whereas consumers are not aware of the agent's incentivization. We use a large individual-level dataset of a life insurance company in the middle east which is unique in the sense of economic turmoil. In this dataset, we have access to individual-level demographics of all customers, their agent's information, customers' decisions to choose life insurance coverage, and their churn behaviour. Since our data is right-censored, we use the Proportional Cox Hazard model to capture the impact of incentivizing agents and other determinants on lapse behaviour. In addition, we use the Causal Random Forest method to identify conditional average treatment and heterogeneous effects. We find that although incentivizing agents increases the adoption of life insurance customers in the short term, it may reduce the quality of acquired customers which leads to a higher churn (lapse) rate among the customers who joined the company during the agents' promotions. We also find that the impact of agents' incentives on the lapse behaviour of customers is heterogeneous across different types of life insurance benefits and agents' experiences.

Thursday, 3PM

TD15

Michaelangelo - Level 2
CRM: Customer Journey and CLV II
Contributed Sessions

3 Does the Nps Predict Future Consumer Behavior? Evidence from the Casino Industry

Sanghee Nina Kim, Thomas S. Gruca, University of Iowa, Iowa City, IA, Contact: sanghee-kim@uiowa.edu

The Net Promoter Score (NPS) is a widely used measure of customer loyalty. Using the distribution of responses from a 0-10 intent-to-recommend (ITR) scale, the NPS is defined as the percentage of promoters (top-two boxes) minus the percentage of detractors (bottom 7 boxes). It was touted as "the one number you need to grow" due to a purported relationship between NPS and firm growth. A number of academic papers have examined this relationship with decidedly mixed results.

In this study, we focus on the micro relationship between a customer's loyalty category (Promoter, Passive, Detractor) and future behavior. While other studies focus on the relationship between a customer's NPS category and WOM (the other driver of firm growth), only a few have examined the impact of NPS category on consumer retention and future spending. Unlike prior studies using consumers, we have objective measures of retention, future spending and visit frequency. We explore three important research questions. First, does past purchase behavior vary differ across NPS categories? Second, does future consumer behavior vary across NPS categories? Third, how does the NPS compare to other satisfaction and behavioral intent metrics in predicting future consumer behavior?

Our data comes from the casino gaming industry. Post-visit survey results were merged with transaction histories which allows us to look at year-to-year changes in visit frequency and spending. We compare the ability of NPS category (or ITR scores) and measures of satisfaction and behavioral intentions to predict customer retention, visit frequency and spending.

We provide insights to practitioners on how critical future behaviors are explained by the customer's NPS category for their most important customers. For academics, we expand the limited body of empirical work testing the underlying assumptions of the NPS framework to a non-contractual, frequently used entertainment service.

Thursday, 3PM

TD15

Michaelangelo - Level 2
CRM: Customer Journey and CLV II
Contributed Sessions

4 Customer Management Framework Based on Customer Portfolio Optimization

Cleo S. Silveira[1], Rodrigo Heldt[1], Fernando Bins Luce[1], Sarang Sunder[2], [1]Universidade Federal do Rio Grande do Sul, Porto Alegre, Brazil; [2]Indiana University, Indianapolis, IN, Contact: cleo.silveira@ufrgs.br

How to manage risk and reward in CRM? While Customer lifetime value (CLV) has proven to be a useful metric to identify the most valuable customers and prioritize them, less is known about how managers can simultaneously manage their overall portfolio of customers using CLV. In this paper, we propose a framework that integrates strategic and operational decisions regarding customer portfolio management. At its core, the framework relies on building an optimized portfolio of customers by balancing reward (customer equity (CE)/CLV) and risk (variance in CLV within the customer base). We implement the proposed modeling framework on customer-level data from a large retail bank company (4MM+ customers) and demonstrate decision-making and performance improvements. Specifically, we identify optimal customer portfolios across the firm's efficient frontier such that managers can use the proposed framework to choose a target portfolio according to their own objective (maximize reward, minimize risk, or some other combination of reward and risk). Across all models, the proposed framework consistently performed better than the portfolio held by the company. For instance, our holistic approach ranged from 5.7% to 6.5% better in terms of CE/risk ratio, increasing reward and decreasing risk. In summary, moving from a customer to portfolio evaluation using CLV and enabling a globally optimal solution for the firm that also considers customer risk, allows better allocation of marketing investments to prioritize the valuable customers without incurring in unnecessary and unwanted risks.

Thursday, 3PM

TD16

Raphael - Level 2
Online Reviews #1
Special Session

Session Co-Chair

Frank Ohnesorge, 1</sup

Thursday, 3PM

TD16

Raphael - Level 2
Online Reviews #1
Special Session

Session Chair
Andreas Bayerl, Mannheim, Germany.

Thursday, 3PM

TD16

Raphael - Level 2
Online Reviews #1
Special Session

1 Review Placement: Theoretical Framework and Multimethod Investigation of Online Reviews Displayed in Firm-Generated Messages

Ana Babic Rosario[1], Francesca Sotgiu[2], Ali Besharat[1], [1]University of Denver, Denver, CO, [2]Vrije Universiteit Amsterdam, Amsterdam, Netherlands. Contact: ana.babic-rosario@du.edu

Back in 2009, Domino's Pizza ran a campaign focused on transparency and improving the credibility by *displaying customer reviews on the New York Times Square*. This is one of the earliest instances of *'review placement'*—consumer-generated reviews (and ratings) displayed in firm-generated messages. Even though review placement seems widely accepted among practitioners, there is no apparent theoretical framework which explains this phenomenon.
In this paper, we provide a new framework and address the following questions: *How is review placement created and utilized by marketers? How is review placement processed and evaluated by consumers, especially in terms of credibility, purchase intentions?* We explore moderating factors, including marketer differences, individual consumer (online review sender and receiver) differences, channel/media effects, and product characteristics. To do so, we employ multiple methods. In a lab experiment, we compared the effectiveness of review placements across four conditions (only image, image with ad copy, image with testimonial text, image with review placement) for four product categories (water bottle, printer, book, blender). Next, we conducted a content analysis of 973 review placements from 350 brands between 2011 and 2022. Finally, we conducted interviews with online review aggregators, their client companies, and regulators. Overall, we demonstrate that practitioners are using review placements—namely via highlighting average ratings in email communications—to reduce consumer uncertainty and increase sales.

Thursday, 3PM

TD16

Raphael - Level 2
Online Reviews #1
Special Session

2 Trick or Treat? the Stock Market Impact of Fake Reviews

Philip Pollmann-Schweckhorst[1], Alexander Edeling[2], Marc Fischer[1], Thomas P. Scholdra[1], [1]University of Cologne, Cologne, Germany; [2]KU Leuven, Leuven, Belgium. Contact: pollmann-schweckhorst@wiso.uni-koeln.de

Strategic review manipulation (i.e., buying fake five-star reviews) by third-party sellers on e-commerce platforms has become a prevalent phenomenon in the digital economy.
A recent study by He et al. (2022) shows that sellers benefit directly from fake reviews, as it leads to a 16% better sales rank. This is good news for resellers who engage in review manipulation. But does it also apply to brand manufacturers? How do fake reviews affect their stock returns? Based on prior research on the online word-of-mouth performance relationship, one might assume that manufacturers also benefit from any positive online reviews in terms of higher revenues, earnings, and ultimately higher firm value.
The authors show, however, that the occurrence of fake reviews poses a serious threat to the firm value of brand manufacturers. Using a scaling approach, the authors develop a machine learning-based fake review detection model that learns from observations of actually bought fake reviews. The empirical analysis of more than 14 million reviews shows that a fake-review-induced rating bias (i.e., difference between the manipulated and the genuine rating) is negatively associated with stock returns. Negative financial consequences are amplified when firms face high levels of competition. The study results provide important theoretical, managerial, and policy implications regarding the regulation and prevention of deceptive review practices.

Thursday, 3PM

TD16

Raphael - Level 2
Online Reviews #1
Special Session

3 Are Female Consumers Emotional?Understanding Gender Stereotypes in Online Reviews

Alisa Wu, Vicki Morwitz, Columbia University, USA, New York, NY, Contact: YW3214@gsb.columbia.edu

Research has found that gender stereotypes manifest in online review context. Hotel managers tend to use more impolite and aggressive words when responding to female (vs. male) customers' reviews (Proserpio et al. 2021). Unverified beliefs can put members of certain genders in a less privileged situations. To gain perspective on this issue, this research examines the veracity of the long-held gender stereotype that females are more emotional than males in an online context. We adapted the stereotypical belief scale (Timmers et al. 2010) for an online review context, developing a 17-item scale to measure beliefs regarding whether females are more emotional than rational/males. We recruited 600 participants (M_{age} = 37.91) from Prolific and found that males (vs. females/nonbinary/other) and Republicans (vs. Democratics /Independents/other) believe female reviewers are more emotional than logical, and that, female reviewers are more emotional and less rational than male reviewers (*ps < .0001*). We next analyzed 100,000+ online reviews scraped from TripAdvisor, Yelp, and Amazon to examine the veracity of this stereotype. Using textual data analysis tools (NLP), we first found that being emotional and rational are not two endpoints of a spectrum, but rather are two orthogonal constructs. More importantly we found that gender is not associated with whether reviews are emotional or rational. An experiment with 200 Prolific participants further found that making gender stereotypes salient, leads female reviewers to to express less emotions in reviews (*p = .003*), something that does not manifest when stereotypes are not salient (*p = .250*), Our research refutes commonly held beliefs that females are more emotional than other genders and that being emotional is irrational. We hope that our findings will liberate females to freely express emotions in public, online environments, without negative consequences.

Thursday, 3PM

TD16

Raphael - Level 2
Online Reviews #1
Special Session

4 The Weekend Effect in Online Reviews

Andreas Bayerl[1], Verena Schoenmueller[2], Jacob Goldenberg[3], Florian Stahl[1], [1]University of Mannheim, Mannheim, Germany; [2]ESADE, Barcelona, Spain; [3]Interdisciplinary Center (IDC) Herzliya, Herzliya, Israel.

The effect of the weekend on individuals' behaviors and decisions has been established in a variety of domains. The current research contributes to this arena by investigating the effect of weekends in the domain of online reviews. The authors establish that reviews written on the weekend have systematically lower rating scores than reviews written during the week, with robustness of this "weekend effect" shown across contexts. This effect is surprising given that literature usually reports higher levels of happiness and better mood on weekends. By testing an extensive set of potential drivers, the authors find strong evidence that the weekend effect is driven by a temporal reviewer selection, i.e., a different kind of reviewer being active at different times of the week, and a general "weekend loneliness" that worsens ratings written on the weekend. Evidence for these explanations stems from a multimethod approach including secondary data (a quarter billion online reviews from five different platforms), an observational study, text analysis, and a lab study. Given the relevance of online reviews for consumers' decisions, important managerial implications are derived by showing with solicited reviews from the field that organizations should not trigger users to review on the weekend.

Thursday, 3PM

TD17

Balmoral Level 2
Blockchain Meets Marketing 1
Special Session

Session Co-Chair

Martin Spann, Ludwig Maximilian University of Munich, München, Germany.

Thursday, 3PM

TD17

Balmoral Level 2
Blockchain Meets Marketing 1
Special Session

Session Chair
Renana Peres, The Hebrew University, Israel.

Thursday, 3PM

TD17

Balmoral Level 2
Blockchain Meets Marketing 1
Special Session

1 Uniqueness as a Driver of Secondary Market Interest - a Crypto Market Case

Sophie Berghueser, Martin Spann, Ludwig Maximilian University of Munich, München, Germany. Contact: spann@spann.de

Marketers and managers from different industries employ the concept of uniqueness in their marketing and product strategies. While there is an understanding of the numerous merits of uniqueness as part of a firm's strategy and its underlying mechanisms, the effects of varying degrees of uniqueness across a product line remain unclear. Given the control of firms over their product lines as opposed to the broader market space, exploring this avenue suggests additional business potential. In this research, we study the effect of product uniqueness based on 27,837 transactional observations of a non-fungible token (NFT) collection over a time span of 14 months. We find that despite undifferentiated initial launch prices across the collection, secondary trades generate higher prices for products with a higher level of uniqueness. Employing a selection model and mediation analysis, our results show that uniqueness positively affects product interest and length of ownership (i.e., pre-purchase engagement in the form of favorite likes as well as actual purchases). These results highlight the potential of using uniqueness as a differentiated product attribute (e.g., by varying the level of uniqueness across the product line). The implications of our findings add to the uniqueness and NFT literature, inform marketers on new ways to employ product uniqueness, and educate different NFT stakeholders on reactions to product design and product description.

Thursday, 3PM

TD17

Balmoral Level 2
Blockchain Meets Marketing 1
Special Session

2 Consumer Data as an Asset: Using Blockchain to Let Consumers Manage Their Data Equity

Renana Peres[1], David A. Schweidel[2], [1]The Hebrew University, Jerusalem, Israel; [2]Emory University, Atlanta, GA, Contact: renana.peres@mail.huji.ac.il

Consumer data have become an important driver of firms' marketing strategy, service design, media management, and advertising targeting. In industries such as online social platforms, consumer data are the main value engine. However, while these data is the property of consumers, they are usually not compensated for their contribution and have no control as to what they are willing to share and how the data are used. Here, we present a novel approach for a data market which uses Blockchain technology to handle and trade customer data in a full controllable way, without any data brokers, and where data are traded at their market value. We present the concept, a preliminary implementation, and a set of optional research questions.

Thursday, 3PM

TD17

Balmoral Level 2
Blockchain Meets Marketing 1
Special Session

3 The Value of NFTs Authors

Mercedes Esteban Bravo, Lisbeth d. l. M. Jiménez-Rubido, Jose M. Vidal-Sanz, Universidad Carlos III de Madrid, uc3m, Getafe, Madrid, Spain. Contact: mesteban@emp.uc3m.es

The value of a work of art can be significantly affected by the artist. Measuring creator's value is challenging, especially when there is limited information about the author, and there is a moderate number of works in the market. This is the case in digital markets where a non-fungible token (NFT) links each unique digital asset with an online identity of the creator. In this research we use data from OpenSea, the largest online marketplace for NFTs, and estimate the creator value in dollars, measuring also the impact of creators on the liquidity of their work. We also study how creators' activity in social networks (Twitter and Instagram) can influence their market value and the liquidity or their works in the NFT market.

Thursday, 3PM

TD17

Balmoral Level 2

Blockchain Meets Marketing 1

Special Session

4 Rarity, Price, and Product Line Design in Nft Markets

Nikhil Malik[1], Zijun (June) Shi[2], Yanhao Wei[3], Lan Luo[3], [1]USC Marshall, Los Angeles, CA, [2]HKUST, Clear Water Bay, China; [3]University of Southern California, Los Angeles, CA, Contact: lluo@marshall.usc.edu

We study the relation between prices and product rarity in the context of the NFT (non-fungible token) market, by analyzing a dataset of over 2.6 million transactions collected between April and September 2022, involving 256,127 NFTs distributed across eight thousand collections. Inspired by the observation that there exist pairs of highly similar digital artworks with one highly priced but the other with almost zero market value, we explore the underlying factors that drive such considerable price disparity. We measure the uniqueness (rarity) of a NFT by the extent to which it resembles / differentiates from other NFTs in the same artwork collection by the same creator. After controlling for an array of attributes that may affect prices, we find an inverted U-shaped relation between price and NFT uniqueness. Specifically, a piece of NFT artwork is expected to sell for a high price when: (i) there are many similar artworks in the same collection, and (ii) there are one or a few distinctive attributes that make the focal artwork rare relative to the similar artworks. We substantiate this result with cross-collection comparisons. Specifically, by matching similar collections, we find that a collection tends to create more total sales when it hosts a large number of similar "base" artworks and yet simultaneously features a smaller number of "special" artworks that differentiate from the base artworks with a few rare attributes. Overall, our findings have important implications for product line design and collectable marketplace.

Thursday, 3PM

TD18

Windsor - Level 2

Retailing:E-Commerce

Contributed Sessions

1 Using In-Store Analytics to Bridge the Purchase Intention and Behavior Gap at the Point of Sale

Michael Jungbluth[1], Anna Ulrichshofer[1], Christian Schlereth[2], [1]Technische Hochschule Ingolstadt, Ingolstadt, Germany; [2]WHU - Otto Beisheim School of Management, Vallendar, Germany. Contact: anna.ulrichshofer@thi.de

Retailers are increasingly utilizing in-store analytics to track customers during their shopping trips, capturing data such as time spent in the store, categories visited, and purchase information. Survey data often complement this data to understand the impact of in-store variables on purchase decisions. A growing body of research has investigated, for instance, the emergence of unplanned purchases (Hui et al., 2013a; Suher & Hoyer, 2020), the impact of mobile-phone usage (Grewal et al., 2018), social interactions (Zhang et al., 2014), and promotions (Stilley et al., 2010; Hui et al., 2013b). In this study, we contribute to the current literature by (1) considering both unplanned purchases and purchase resignation events, (2) providing insights into a specialty retail setting, where customers may have predetermined purchase intentions, and (3) proposing a way to condense the rich tracking information by discretizing paths into clickstream-like sequential category-visit decisions and extracting the underlying latent states. We study how much added value is provided to inform unplanned purchase and purchase resignation events in comparison to other sources of data like customer characteristics and shopping motivations. Omitting in-store tracking variables in our field study degrades the model fit for unplanned purchases by 50.28% and purchase resignation by 14.58%. At the same time, omitting shopping motivation and customer characteristics account for just a 1.17 - 2.84% decrease in model fit. This empirical outcome highlights the significance of utilizing point-of-sale tracking information, particularly for specialty retailers who must address unplanned purchases and purchase resignations. It motivates the development and improvement of models which efficiently condense behavioral in-store information for managerial inference as we know it from web analytics.

Thursday, 3PM

TD18

Windsor - Level 2

Retailing:E-Commerce

Contributed Sessions

2 Robotics, Iot and Point of Sales Data to Measure the Impact of Shelf Position on Sales

Andres I. Musalem[1], Sofia Pontigo[2], [1]U. Chile & ISCI, Santiago, Chile; [2]U. Chile, Santiago, Chile.

Extant research has shown a significant relationship between product location and sales. However, most studies have mainly focused on space elasticity and less is currently known about the effects of shelf position on sales. In addition, the potential reverse causality in the shelf position-sales relationship and the costs of conducting controlled experiments have made it even more difficult to obtain managerial implications. This study examines the effects of shelf position on sales using a novel dataset about product position collected using a combination of robotics, internet of things and machine learning technologies. The data considers product position data for multiple stores of a major supermarket chain in Latin America and sales data provided by one of the retailer's vendors covering five product categories. Using these data, we first perform a descriptive analysis to explore possible (non-causal) associations between variables. This analysis suggests that products located at the edges of an aisle sell more than those located near the center, while products located closer to the checkout counters sell more than those located farther away. The results also suggest that products located at low or medium heights sell more than those placed on higher shelves. We then propose a quasi-experimental approach to draw causal inferences about the impact of shelf position on sales. This requires us to rely on a semiautomatic method to detect changes in shelf position and hence identify suitable changes for a quasi-experimental approach, which we implement with a difference-in-differences analysis. This analysis reveals qualitatively different conclusions from those obtained under a descriptive analysis, highlighting the importance of using a causal approach.

Thursday, 3PM

TD19

Sandringham - Level 2
Pricing: Dynamic Pricing
Contributed Sessions

Session Chair

Qi Pan, The Chinese University of Hong Kong, Shenzhen, Shenzhen, China.

Thursday, 3PM

TD19

Sandringham - Level 2
Pricing: Dynamic Pricing
Contributed Sessions

1 Dynamic Competition and Behavior-Based Pricing in Markets with Reference Price Effects

Dong Wook Chae[1], Koray Cosguner[2], [1]Indiana University, Bloomington, IN, [2]Indiana University, Bloomington, IN

Extensive research of demand-side studies document the existence of the reference price (RP) effect on consumer purchase behaviors across various product categories. This literature suggests that consumers' RP can be constructed either externally (stimulus-based; SRP) or internally (memory-based; MRP), and consumers can respond to gains and losses asymmetrically. Despite the abundance of demand-side studies, there has been only a limited number of research on the pricing implications of the RPE. In this research, we provide an empirical investigation using a structural model by explicitly studying the RPE's demand and supply-side implications. In our setting, we allow consumers to have either an SRP or an MRP (but not both), and their brand choice decisions depend on actual prices and their RPs. This demand model becomes an input in our supply-side analysis, where we estimate the dynamic pricing game played among duopolist manufacturers. Through counterfactual simulations, we investigate how competing firms' pricing decisions and profit levels are affected due to changes in 1) the size of the SRP vs. MRP-type consumer segments, 2) the level of loss aversion that SRP and MRP-type consumers have, 3) the levels of brand preferences of the SRP and MRP-type consumers. Lastly, we study how firms' profitability and consumer welfare are impacted if firms decide to dynamically engage in behavior-based pricing (BBP) via utilizing cent-off coupons to target SRP and MRP-type consumers.

Thursday, 3PM

TD19

Sandringham - Level 2
Pricing: Dynamic Pricing
Contributed Sessions

2 An Empirical Analysis of Extended Warranty : Designing a Dynamic Personalized Pricing Strategy

Vasavi Rayachoty, Jialie Chen, Dinesh Gauri, University of Arkansas, Fayetteville, AR, Contact: vrayachoty@walton.uark.edu

Despite the commercial importance (e.g., high-profit margin) of extended warranty services (EW) that are offered on electronic products, a few related issues still remain less well understood. For instance, many retailers of EWs employ a one-size-fits-all pricing strategy that accounts for a very limited variation across underlying products and consumer characteristics. Obviously, such a pricing strategy could be sub-optimal. To address this issue, we first propose a demand model of EWs, where we posit that EW purchase decisions depend on a number of factors related to consumers' store loyalty, experience with the underlying product category, and price sensitivity. The model is estimated using EW purchase data from a major retailer in the US. Based on our model estimates, we further conduct a series of optimizations, wherein we solve for the optimal price based on the above-mentioned characteristics of each consumer. Given that these characteristics are both individual-specific and time-varying, solution to the price optimization based on our proposed demand model indeed leads to a dynamic personalized pricing strategy of EWs. While our proposed pricing strategy is effective in driving revenue (approximately 12% more), it is also costly to implement, with the consideration of data and computational requirements. To address this issue, we also develop a simplified approach to cater to firms that do not have enough resources to run the more complex optimization model.

Thursday, 3PM

TD19

Sandringham - Level 2

Pricing: Dynamic Pricing

Contributed Sessions

3 Reference Effect in Dynamic Promotion Strategy: The Case of Didi Chuxing

Qi Pan, Chinese University of Hong Kong (Shenzhen), Shenzhen, China. Contact: panqi.sysu.ruc@gmail.com

As a dominant ride-hailing company in China, DiDi has noticed that its current promotion strategy could have room for improvement since it might ignore the current promotion's long-term impact on consumer loyalty. Therefore, this paper proposes a structural model incorporating the reference effect. We allow the reference point to be a hidden process loaded with consumer heterogeneity. The reference point will affect whether the consumer opens the ride-hailing app and, after opening the app, whether to call a car. When designing the promotion strategy, the ride-hailing company would consider the current and future impacts in a forward-looking environment. Furthermore, we also follow a budget constraint setting to make our results comparable and practical.

To empirically estimate the model, we utilize two sets of data. The first data set, an auxiliary one, is a random experiment covering 10% DiDi national-wide population. The experiment is about consumer responses under different discount levels. The second data set, the major one, is a 1% DiDi operation data covering six months. In our model, the price coefficient and the reference effect could be biased since price and discount are endogenous. We deal with price endogeneity by using the random experiment data. As for the discount endogeneity, we explicitly model the discount allocation as a truncated distribution using factors similar to DiDi's actual operation, together with the app opening process and car calling process. Because the reference point is hidden, we use particle filter to recover the reference points. Upon estimating the demand side of the model, we can simulate the optimal discount under a certain budget constraint.

The paper's first main finding is that the reference effect is significant. And consumers are more sensitive to lower discounts (loss aversion). The second main finding is that under the reference effect, thus forward-looking setting, the simulated optimal discounts lead to a 2.3% increase in revenue. In this 2.3% increment, 0.4% comes from the opening app stage, and 1.9% comes from the car calling stage.

Friday, 8:30AM

FA01

Trade Room- Lobby Level

ML:B2B Marketing

Contributed Sessions

Session Chair

Navid Mojir, Harvard Business School, Boston, MA

Friday, 8:30AM

FA01

Trade Room- Lobby Level

ML:B2B Marketing
Contributed Sessions

1 Spend Analysis 4.0: Revolutionizing Procurement Practices Using Natural Language Processing and Machine Learning

Xingyi Li[1], Viviana Culmone[1], Bert De Reyck[2], Onesun Steve Yoo[3], [1]UCL School of Management, University College London, London, United Kingdom; [2]Lee Kong Chian School of Business, Singapore Management University, Singapore, Singapore; [3]UCL School Of Management, University College London, London, United Kingdom.

Conducting a spend analysis of a procurement practice is a challenging task for supply-chain managers. They must make sense of large-scale spend data in the form of unstructured texts and identify savings opportunities by organizing suppliers and products into detailed hierarchical categories. We present a methodology that overcomes practical challenges to automate spend analysis. It utilizes "small data" of detailed hierarchical taxonomy guides to train classifiers, as well as "big data" of supplier information collected from various sources. To improve accuracy throughout the categorization hierarchy, our algorithm combines the categorization of the top-level hierarchy that relies on general supplier descriptions and that of the bottom-level hierarchy that employs specific word identifiers. Finally, our decision support tool performs a Kraljic analysis to identify the product categories with the highest savings potential, and also specifies target suppliers. Using the spend data from Cranswick plc, a major food producer in the UK, we test the accuracy of our methodology and show superior performance compared to benchmark models. Our methodology has been implemented with multiple industry partners. Our methodology is the first academic work to formalize the automation of spend analysis for large-scale procurement. It enables accurate, quick, and cost-effective spend analysis for industrial firms (including SMEs), and can help them measure and track Scope-3 carbon emissions in their supply chains.

Friday, 8:30AM

FA01

Trade Room- Lobby Level
ML:B2B Marketing
Contributed Sessions

2 Monetary and Non-Monetary Promotions for Entrepreneurial Buyers

Rahul Suhag, Rajdeep Grewal, University of North Carolina, Chapel Hill, NC, Contact: rahul_suhag@kenan-flagler.unc.edu

Promotions influence the decision making of buyers, including consumer or individual buyers and business buyers. Extant literature focuses largely on individual buyers with the exclusion of business buyers. We focus on business buyers, essentially, small entrepreneurial firms that purchase consumables and durable products to sustain their business from retailers such as Lowes, Costco, Grainger, and O'Reilly Auto Parts. How does a seller promote its offerings to such entrepreneurial organizational buyers? In this realm, we seek to study the efficacy of monetary and non-monetary promotions that sellers may offer to such entrepreneurial buyers and in the process, we add to the sales promotions and organizational buying literature by extending it to entrepreneurial buying. Using data from field experiments conducted by a durable goods retailer, we estimate the average increase in sales resulting from the promotions. The Bayesian Causal Forests algorithm, a modification of the Bayesian Additive Regression Trees, helps us capture the heterogeneous causal treatment effects and the conditional average treatment effect (CATE) using regularization priors for nonlinear trends that may even involve small effects and strong confoundedness. We find that there is substantial heterogeneity in the effect of promotions on sales across entrepreneurs. The effect sizes vary widely across promotions, and entrepreneurs prefer different kinds of promotions such that no one strategy can be applied when selling to all.

Friday, 8:30AM

FA01

Trade Room- Lobby Level
ML:B2B Marketing
Contributed Sessions

3 Resilience in the Face of Adversity: Evidence from a Multinational Enterprise's Expansion into Multiple Markets

Amrita Mitra[1], Kersi Antia[2], [1]Ivey Business School, London, ON, Canada; [2]Western University, London, ON, Canada. Contact: amitra.phd@ivey.ca

Multinational firms' international expansion aspirations depend on physical locations owned and operated by host country local partners. Both parties have a vested interest in outlets shedding their early-stage vulnerability

and transitioning to maturity. Maturity, however, does not confer immunity from sudden dips in sales that all outlets experience. The most severe of these—what we term a *setback*—might even pose an existential threat to the outlet. In contrast to the one-sided view of failure or unmitigated success adopted by prior research, we acknowledge the reality that all outlets inevitably face setbacks that they may or may not recover from. Accordingly, we identify the factors driving outlets' *resilience*□ the likelihood and speed of their recovery from setback. We posit that the firm and its local partners' ability and motivation to leverage the resources conferred by *incubation* (time spent in each phase of the lifecycle), *imprinting* (the outlets' performance in their early days), *learning* (specifically from other outlets worldwide that have gone concurrently into setback), and *incentives* (elicited by the royalty regime) determine setback-experiencing outlets' resilience in nuanced yet powerful ways. We rely on a unique dataset comprising monthly sales data of 384 outlets of an international franchise system observed from inception over up to 18 years of operation across six countries. We incorporate estimates from Functional Data Analysis (FDA) in an endogeneity-corrected Accelerated Failure Time Model (AFT) regression model. The findings from this study inform multinational enterprises' and their local partners' efforts to identify setbacks and recover from them.

Friday, 8:30AM

FA01

Trade Room- Lobby Level
ML:B2B Marketing
Contributed Sessions

4 IoT and Customer Loyalty Loop: The Value of Usage Data for B2B Buyers and Sellers

Navid Mojir, Harvard Business School, Boston, MA

The advent of the Internet of Things (IoT) technologies has afforded marketers, particularly in business-to-business (B2B) contexts, access to detailed data about their customer's journeys. Taking advantage of proprietary data collected by a heavy construction equipment manufacturer using IoT technology, we measure the value of such technology both for the customers and the seller. The seller has installed IoT modules on its products to collect detailed usage data through cell phone tower connections. A government policy change about utilizing subscriber identity modules (SIM) to collect data remotely resulted in many products going offline for an extended period. We leverage this natural experiment to measure the value of IoT-collected data. While access to detailed data overall provides value for the customers and the seller, there is significant heterogeneity in the value provided by the technology to the customers and the seller. Leveraging detailed data collected by IoT benefits most customers. However, using the data could hurt the value the seller extracts from some customers. Our results highlight the importance of having a clear value extraction strategy when using data collected through technologies like IoT and how such a strategy should be rooted in a deep understanding of the customer journey.

Friday, 8:30AM

FA02

Flagler - Lobby Level
Social Media: Social Influence II
Contributed Sessions

Session Chair
Malika Chaudhuri, Oakland University, Rochester, MI

Friday, 8:30AM

FA02

Flagler - Lobby Level
Social Media: Social Influence II
Contributed Sessions

2 The Contagion Process of Online Negative Discourse: Case of Celebrities' Suicide

Srabana Dasgupta[1], Nilesh Saraf[1], Ehsan Nouri[2], Jie Mein Goh[1], Dianne Cyr[1], [1]Simon Fraser University, Vancouver, BC, Canada; [2]Beedie School of Business, Vancouver, BC, Canada. Contact: srabanad@sfu.ca

Social media discourse around shocking and highly emotive events, such as school shootings or terrorist attacks, can potentially influence individuals' real-life behaviors. Using Twitter activity following several celebrity suicides, we investigate the online propagation of negative emotions and identify factors that impact the volume and longevity of the dialogue. We find that, first, the volume of tweets and their retweets (define as a cascade) for each celebrity, demonstrates an initial spike, and then a long 'tail' that tapers off. Two, the leading negative emotions in terms of volume and timing are fear and anger, followed by sadness which as more likely to be retweeted later but over a longer period of time. Third, popular users were more likely to retweet a post during the last quarter of the cascades' lifetime. Thus, the most followed individuals have less influence in the discourse than previously understood.

Friday, 8:30AM

FA02

Flagler - Lobby Level
Social Media: Social Influence II
Contributed Sessions

3 Can Online Popularity Manipulation Lead to Overvaluation? Evidence from the Football Players' Market

Théo Marquis[1], Nicolas Soulié[2], [1]Sciences Po, Paris, France; [2]Institut Mines Télécom Business School, Evry, France. Contact: theo.marquis@sciencespo.fr

Talent and popularity are valuable assets for celebrities. While talent improvement generally involves effort, online popularity can be easily manipulated as there are firms selling social media fake followers. This paper investigates the economic motives of professional athletes who manipulate their social media popularity by the acquisition of fake followers. Focusing on soccer, we created a unique dataset of 1,075 international players and took advantage of Twitter's suspicious account removal held in July 2018 to proxy fake followers. Empirical explorations provide evidence of consistent patterns of soccer players associated with fake followers. In these cases, Twitter account creation is quickly followed by a transfer to a new club and predominantly occurred before 2015, when Twitter was more popular than Instagram. The results show that fake followers significantly impact players' value, that is, transfer fees, but only if the transfer occurs between one to six months after the creation of the Twitter account. These fake followers are associated with an average rise in transfer fees of 6% (≈ €650,000). This result is consistent with the acquisition of fake followers to boost the online popularity of a recently created Twitter account and monetise it during transfer negotiations.

Friday, 8:30AM

FA03

Dupont - Lobby Level
Methods: Econometrics
Contributed Sessions

Session Chair
Eric T. Bradlow, University of Pennsylvania, Philadelphia, PA

Friday, 8:30AM

FA03

Dupont - Lobby Level
Methods: Econometrics
Contributed Sessions

1 Using Text Analysis in Parallel Mediation Analysis

Judy (Zijing) Zhang[1], H. Alice Li[2], Greg M. Allenby[2], [1]The Ohio State University, Columbus, OH, [2]The Ohio State University, Columbus, OH, Contact: zhang.9808@osu.edu

Text data is widely used in marketing research. In this paper, we propose a model that uses text data to identify multiple mediators in a parallel mediation analysis. Our model is based on the Latent Dirichlet Allocation (LDA) model that incorporates treatment and outcome variables. Treatment variables can affect topic composition in the text data, with topic probabilities used to predict outcomes via a logistic regression model. Lexical priors are introduced to seed topics that researchers consider relevant to an analysis, while non-seeded topics allow researchers to find other potential mediation paths. The resulting analysis of mediation replaces rating scales with text that more flexibly reflects the reasons for respondent choices. The assessment of stimuli's effect on topic probabilities provides information on which aspects of stimuli contribute to the change in respondents' choices of words and their latent meanings behind these words. In the empirical application, we find that our model is able to identify multiple constructs through which the treatments affect the consumption decision, even though it appears that the overall mediation is not significant. Our model indicates that the treatments affect mediators differently and that the mediating variables have opposing valences in predicting an outcome variable. Our model is shown to provide a large increase in explanatory power over the use of a traditional model of mediation.

Friday, 8:30AM

FA03

Dupont - Lobby Level
Methods: Econometrics

Contributed Sessions

2 The use of Propensity Scores Across Multiple Cross-Sectional Surveys to Approximate Longitudinal Studies

Dave Bussiere, University of Windsor, Windsor, ON, Canada. Contact: bussiere@uwindsor.ca

Industry surveys provide useful information on consumer and business perceptions. Often conducted by industry associations, these studies do not include the same respondents, but still provide an important historical perspective of views on relevant topics. Analyzing changes over time, however, becomes problematic. Multiple cross-sectional surveys do not equal one longitudinal study.
Prior research has used propensity scores to compare 2 cross-sectional surveys. This paper explores the theoretical implications of using propensity scores on multiple cross-sectional surveys to approximate longitudinal studies.
In study 1, simulated data over a 4 survey structure are evaluated without propensity scores. Propensity scores are then used to match respondents for the same simulated data. Matched respondents significantly improve results. Study 2 then uses 4 surveys over a 9 year period (2012 - 2021) by the National Association of Home Builders of individuals who plan on buying a home in the next three years to empirically test the results. The core research questions involve a willingness to pay for premium housing components. Without propensity scores, little and inconsistent change was observed. With propensity score case matching over the 4 surveys, significant willingness to pay trends emerged for space use and green technology.

Friday, 8:30AM

FA03

Dupont - Lobby Level
Methods: Econometrics
Contributed Sessions

3 Accounting for Skewed Distributions in Modeling Self-Rreported Customer Response Data

Nadine Schröder[1], Giampiero Marra[2], Rosalba Radice[3], Thomas Reutterer[1], [1]Vienna University of Economics and Business, Vienna, Austria; [2]University College London, London, United Kingdom; [3]Bayes Business School – City, University of London, London, United Kingdom. Contact: nadine.schroeder@wu.ac.at

In many customer feedback scenarios, large fractions of respondents typically report that they were highly satisfied with a product or service. This phenomenon has gained a lot of attention in the field of product reviews and is known by the j-shape distribution of star ratings. These distributional characteristics are challenging when the task is to model the relationship between such satisfaction metrics and (potentially) influencing variables. In addition, since not all customers are willing to provide a rating, the responses are typically subject to possible selection biases. As marketers are keen in understanding why customers provide a certain rating, choosing the correct model is of vital importance to avoid biased and hence unreliable estimates leading to wrong managerial implications. We illustrate this issue in an empirical setting of modeling drivers of customer review ratings in the hotel industry.
The hotel review data have been collected from a booking platform over a period of two years and were enriched with data from a local hotel chain in a major European city. This gives us the opportunity to have a unique data set at hand enabling us to identify which customers have provided a review and observe the associated rating. When transforming the ratings into deviations from the top rating, an inverted j-shape pattern emerges with a vast number of zero valued observations. We hence propose a count model based on the Tweedie distribution and account for sample selection. We compare the Tweedie, which is a flexible exponential-family distribution with a point mass at zero, to alternative count models and further models used in previous research. We evaluate model performance with respect to their distributional assumptions as well as further model selection criteria. We find that our proposed Tweedie model outperforms other (sample selection) models. Specifically, our results show that the estimated parameters vary in terms of significance and effect size across the various models, which would imply different managerial conclusions and make the right model choice important.

Friday, 8:30AM

FA03

Dupont - Lobby Level
Methods: Econometrics
Contributed Sessions

4 Two-For-One Conjoint: Bayesian Cross-Category Learning for Shared-Attribute Categories

Eric T. Bradlow, John McCoy, Rachele Ciulli, University

of Pennsylvania, Philadelphia, PA, Contact: ebradlow@wharton.upenn.edu

Conjoint analysis is an ubiquitous market research tool. As normally implemented, each time you wish to understand consumer utilities for a product category, you run a conjoint study for that category. For example, if you require consumer preferences for yogurt features, you run a (choice-based) conjoint using choices between yogurts.

In this research, we propose two conjoint methodologies. The first, based on transfer learning, has the researcher learn about a focal category (e.g. yogurt) by leveraging results from a conjoint study on a related category (e.g. ice cream). The second contribution is a data collection task that uses choice pairs between products in different categories. We demonstrate our approach using three category pairs (hiking jackets and sleeping bags, ice creams and yogurts, and televisions and computer monitors) where paired categories have fully or partially overlapping features.

We show, with a Bayesian model, how out-of-sample prediction accuracy is improved when using out-of-category information, with both no data and sparse data from the focal category. We demonstrate the effects of out-of-category information on managerially relevant decisions such as market share predictions. Since our approach uses standard conjoint software with no modifications, it can be used immediately as a practical marketing research tool.

Friday, 8:30AM

FA04

Tuttle - Lobby Level

Advertising: Consumer Response IV

Contributed Sessions

Session Chair

Wee Chaimanowong, The Chinese University of Hong Kong, Hong Kong, China.

Friday, 8:30AM

FA04

Tuttle - Lobby Level

Advertising: Consumer Response IV

Contributed Sessions

1 Impact of Celebrity Endorsement on Consumer Behavior

Qian Su[1], Chuan He[2], [1]Xidian University, Xian, China; [2]University of Colorado-Boulder, Boulder, CO, Contact: qiansu@stu.xidian.edu.cn

Celebrity endorsement, as a promotion strategy, plays an important role in marketing. Are firms better off with a high-influence celebrity endorsement? We examine the question in a theoretical monopoly model of conspicuous consumption using the rational expectation framework, where consumers are affected by the desire for exclusivity and conformity, and consumers could be congruent or incongruent with the celebrity. Our results suggest that it’s not profitable for all firms to do the celebrity endorsement, especially when the portion of snobs is extremely low or high. When the portion of snobs is moderate, endorsing a celebrity is more beneficial to the firm. Meanwhile, a higher-influence celebrity does not always lead to a higher profit. We also find that the total demand increases with the congruency sensitivity gap but decreases with the conspicuous consumption sensitivity gap. Moreover, the snob’s demand can increase with conspicuous consumption sensitivity gap.

Friday, 8:30AM

FA04

Tuttle - Lobby Level

Advertising: Consumer Response IV

Contributed Sessions

2 Advertising Skepticism: A Meta-Analysis of Consumers’ Response and Situational Contingencies

Bipul Kumar, Indian Institute of Management Indore, Indore, India.

Advertising skepticism is an attitude toward disbelief of the claims made in an advertisement (Obermiller & Spangenberg, 1998). Friestad and Wright (1994) highlight advertising skepticism as an important element of consumer persuasion knowledge. It is positively related to advertisement avoidance and a sense of disbelief (Baek & Morimoto, 2012). Obermiller et al. (2005) mention that advertising skepticism negatively relates to the attitude toward advertisements creating a sense of disbelief. They also argue that it leads to lesser attention and confidence in the advertisement. This study explores the consumers’ response to advertising skepticism. It also explores the situational contingencies, such as the product type, price, and brand image, which affect the relationship between advertising skepticism and various types of consumer response. We test this framework using a meta-analytic approach. Meta-analysis estimates the true population effect size with the help of an integrative view of inconsistencies in earlier studies. It also allows an investigation of the effect of contextual factors on the relationships between variables using moderation analysis (Kumar et al., 2022). Following an extensive literature search, this study uses effect sizes from 31 independent research studies and tests the framework meta-analytically. The study's findings suggest an integrated view of the relationship between advertising skepticism and consumers' response, such as advertisement avoidance. It also suggests that situational factors such as product type and price moderate the relationship between advertising skepticism and outcomes like advertisement avoidance. This study adds to the literature on advertising skepticism by providing an integrated view. It also provides managerial implications, such as the advertising skepticism varies as per the price of the advertised products.

Friday, 8:30AM

FA04

Tuttle - Lobby Level
Advertising: Consumer Response IV
Contributed Sessions

3 The Effects of Microtargeting on Conversion Rates and the Role of Information Asymmetry

Wee Chaimanowong[1], Stylianos Despotakis[2], Francisco Cisternas[1], [1]The Chinese University of Hong Kong, Hong Kong, China; [2]City University of Hong Kong, Hong Kong, China. Contact: chaimanowongw@gmail.com

Behavioral advertising targets consumers based on who they are, while contextual advertising targets consumers based on what they see. In many websites today a combination of the two (referred to as microtargeting) is used to offer more targeted ads to consumers. It is an ongoing debate in the industry and the academic literature whether more precise targeting, using behavioral data of consumers, can benefit or hurt publishers' revenues. However, there is still not a lot of research on the effects of microtargeting on the conversion rates of ads.In this paper, we study a game-theoretic model of an advertising market and show the surprising result that when a publisher turns off micro-targeted behavioral advertising he can sometimes not only increase his revenue but also the advertisers' conversion rates. We link this phenomenon to the information asymmetry that exists in the online advertising market, where some advertisers have access to behavioral data that might not be available to other advertisers. We show that this information asymmetry can reduce the efficiency of the market. By disabling microtargeting, efficiency can be improved, counterbalancing the fact that all advertisers are now less informed, and lead to higher conversion rates.

Friday, 8:30AM

FA04

Tuttle - Lobby Level
Advertising: Consumer Response IV
Contributed Sessions

4 Voice of Respondents: Attitude Measures in A/B Tests

Xing Li, Peking University, Beijing, China. Contact: xingli@gsm.pku.edu.cn

This paper proposes a framework to measure the attitudinal effects of branding ads using randomized control trials (RCTs). Subjects are randomly assigned to treated and control groups, and only those in the treated group may expose to branding ads by some algorithms. Rather than the widely-applied performance-based ads that use behavioral metrics as the outcome, we deliver surveys to measure the subjects' attitudes. The standard ITT-based estimates to evaluate performance-based ad effects are not directly applicable due to two challenges. One is the non-response bias that not all subjects respond to the survey, and their response propensities are affected by the treatment status. In this case, the difference between response values between treated and control groups may come from the changes in the composition of respondents, not their attitudes. Two is data sparsity caused by the low response rate. Our methods deal with two challenges and produce an estimate of the attitudinal effects of branding ads. We collaborate with one large ad platform to implement this method. Empirically, subjects from the platform exhibit non-response bias, and our framework produces a different estimate than the naive ITT-based calculation. Ad platforms and branding managers can use our framework to measure the ad effects for branding, thus balancing brands' spending between branding and performance ads.

Friday, 8:30AM

FA05

Gusman - Lobby Level
Marketing and Consumer Welfare I

Special Session

Session Chair
Michael Patrick Palazzolo, University of California - Davis, Davis, CA

Friday, 8:30AM

FA05

Gusman - Lobby Level
Marketing and Consumer Welfare I
Special Session

1 Quantifying the Heterogeneous Impact of Fda Changes to the Nutrition Facts Label

Anocha Aribarg[1], Matthew Osborne[2], Yiqi Li[1], [1]University of Michigan, Ann Arbor, MI, [2]University of Toronto, Toronto, ON, Canada.

The US Food and Drug Administration (FDA) updated the Nutrition Facts label on the back of packaged food in 2016 to reflect new scientific information, including information about the link between diet and chronic diseases, such as obesity and heart disease. The objective of the update is to help consumers make more informed food choice decisions. In particular, the FDA requires all manufacturers with annual sales of $10 million or more to update the nutrition information on their label by January 1, 2020, and those manufacturers with annual sales less than $10 million to do so by January 1, 2021. The mandate involves changes to several different components on the label, the most significant of which include enlarging the font size presenting calories per serving, including an item for "added sugar", removing the item "calories from fat", and adjusting serving sizes to better reflect actual consumption. Considering the substantial costs incurred by product manufacturers to implement the new label, it is important to understand the consequences of this new FDA regulation. Therefore, in this paper we first quantify the impact of the Nutrition Facts label change on consumer food consumption using a large-scale panel of retail sales at the week and UPC level. We investigate the prevalence of unintended consequences occurring as a result of some components of the change. We also quantify how the effects of the label change vary across product categories. Second, exploiting data that combines individual-level household purchases with longitudinal survey data on self-reported health conditions, we analyze the heterogeneous effects of the label change across households. Specifically, we address the question of whether the label change nudges unhealthy consumers to improve their food consumption. Finally, extant previous research has investigated the effectiveness of various components and styles of food labels. We compare our results to those reported from field and lab experiments performed in more restrictive situations.

Friday, 8:30AM

FA05

Gusman - Lobby Level
Marketing and Consumer Welfare I
Special Session

2 The Impact of Voluntary Labeling

Anita Rao[1], Raluca Ursu[2], [1]Georgetown University, Washington DC, DC, [2]New York University, New York, NY, Contact: anita.rao@georgetown.edu

Policy makers have mandated food labeling standards (e.g., the NLEA). However, many claims made by firms are voluntary, e.g. "low calorie", "no High Fructose Corn Syrup (HFCS)". This paper examines whether voluntary labels can be informative or misleading. On the one hand, voluntary labels can present pertinent information to a consumer, making it a valid differentiation strategy. On the other hand, such labels can lead consumers to ignore mandated labeling information leading firms to use voluntary labels as an obfuscation strategy to hide negative nutritional information about their products. Examining the nutritional content of brands across various product categories where the use of the "no HFCS" label is prevalent, the findings indicate that products with the "no HFCS" label are less healthy, containing more sugars, than others. An incentive compatible experiment allows us to analyze consumer search and purchase behavior. If consumers consider brands with the "no HFCS" label to be healthier, such selective marketing may be misleading and result in consumer harm.

Friday, 8:30AM

FA05

Gusman - Lobby Level
Marketing and Consumer Welfare I
Special Session

3 Joint Presentation of Nutrition and Taste Labels

Michael Palazzolo[1], Beatriz Pereira[2], [1]University of California - Davis, Davis, CA, [2]Ivy College of Business,

Ames, IA, Contact: mpalazzolo@ucdavis.edu
Prior research suggests that on-shelf and front-of-package nutrition labels, including simplified measures such as NutriScore, do not lead to large shifts in consumer behavior towards healthier foods. Nutrition, though, is only one key dimension of consumers' preference for food, and perhaps not the dominant one. We propose a new joint-labeling option, where nutrition is scored by experts, a la NutriScore, and where taste is scored by consumers. By providing an accurate measure of taste, these joint labels may (i) counteract any existing bias about healthy foods not tasting good, and (ii) help consumers make more precise trade-offs between health and taste, such that they may choose healthier foods more often (especially if there is a healthier alternative to a preferred option that tastes just as good, or nearly as good). We find that providing taste information does complement nutrition labels, leading consumers to choose healthier foods. The shift in choices is driven in part by an increased willingness to try UPCs that consumers had not previously purchased, once they have information that an unknown UPC tastes good.

Friday, 8:30AM

FA06

Marti - Lobby Level

New Product Development: Marketing and Innovation

Contributed Sessions

Session Chair

Cem Bahadir, University of North Carolina at Greensboro, Greensboro, NC

Friday, 8:30AM

FA06

Marti - Lobby Level

New Product Development: Marketing and Innovation

Contributed Sessions

1 From Rookie to Superstar: How the Track Design Strategy Impacts Playlist Adoption

Zhaokun Li, Jack Cadeaux, Junbum Kwon, UNSW Business School, Sydney, Australia.

Streaming platforms enable indie musicians to deliver their new releases to a larger audience at a much lower cost than other channels. A by-product is that users of streaming platforms are facing overwhelming choices among millions of songs. In such a situation, playlists are emerging as important intermediaries. However, little is known about how the product design strategies of new tracks can affect adoption by playlists. This paper studies (1) how product design strategies, in terms of both consistency with an artist's previous tracks and differentiation from competing tracks can affect channel coverage (i.e., the number of adopted playlists), (2) how the artists' career stage moderates this effect, and (3) how the boundary clarity of a genre (i.e., the clarity or fuzziness of its boundary) can moderate this effect. Based on streaming data for about 1 million songs from 6 genres and 8,484 artists, the results show positive effects on playlist coverage for both consistency with an artist's previous tracks and differentiation from competing tracks. Furthermore, both strategies have the strongest effect on mid-tier artists but are weaker for top-tier artists and are extremely weak for bottom-tier artists. Genre boundary clarity has no effect on the effectiveness of being consistent with artists' previous tracks, but a strategy focusing on differentiation from competing tracks is more effective in a genre with a clear boundary than in a genre with a fuzzy boundary.

Friday, 8:30AM

FA06

Marti - Lobby Level

New Product Development: Marketing and Innovation

Contributed Sessions

2 Technological Disruption in Fashion Industry: A Quasi-Experimental Analysis

Francesca Bonetti[1], Sajeev Nair[2], Gerard Tellis[3], [1]HEC Montreal, Montreal, QC, Canada; [2]University of Kansas, Overland Park, KS, [3]University of Southern California, Los Angeles, CA, Contact: f.bonetti@fashion.arts.ac.uk

Technological innovation is fundamental for organizations' growth in contemporary markets. Yet often dominant incumbents fail to innovate and repeatedly stumble and fall. In contrast, entrants rise by introducing a radical innovation. Given that the global fashion industry is worth $2.5 trillion in 2022, we examine whether this pattern occurs in fashion markets as it does in high tech markets. We exploit a quasi-experiment, comparing the US Los Angeles market vs. the

UK London market before vs. after Covid. Starting from rival theories for the fall of incumbents, we hypothesize: (1) Great success leads organizations to protect their success and avoid radical change & innovation. (2) Entrants with no turf to protect eagerly embrace new technologies to tap into the lucrative fashion market. (3) Cultural shifts favor new entrants riding on technological innovation. (4) Differences in markets - new world (e.g., LA) vs old world (e.g., London) exacerbate these shifts. (5) External shocks (e.g., Covid-19 pandemic) further heighten these transitions. We employ multiple methods, including quasi-experiment analysis of market data and a cultural survey of managers. We use AI algorithms, including ChatGPT, to identify and quantify key factors that contribute to a company's success from the survey data. Our preliminary results show that entrants are gaining on incumbents more sharply in the US than in the UK and after Covid than before. Analysis of survey data suggest that the internal culture of the firm and investment in R&D (vs. traditional advertising) are key drivers. We find only modest support for firm size and bureaucracy. Brand category is a moderator: apparel and sportswear gain in the US while luxury gains in the UK. The difference is probably due to differences in brand heritage, desirability, and customer loyalty between these two markets.

Friday, 8:30AM

FA06

Marti - Lobby Level

New Product Development: Marketing and Innovation

Contributed Sessions

3 Public Discourse, Innovations and Rise of Functional Food: A Causal Framework for Strategy and Policy Insights Using Narrative Economics

Poorya Selkghafari, Tirtha Dhar, University of Guelph, Guelph, ON, Canada.

With the increase in health consciousness of consumers, functionality of food has become a key driver of innovations and a major marketing tool for farmers, food processors, distributors, and retailers. In this research project, we build models to establish causal links between public discourse on functional attributes of food and related science on food product innovations and subsequent new product development through voluntary front-of-the-package (FOP) labeling. Our analysis shows that functional claims related to health and nutrition have increased dramatically over the last two decades. In the case of new products, on average, claims per product have risen from 0.47 in 2000 to 2.16 in 2019 in the US market.

We then use Schiller's theory of narrative economics to link firms' decisions to develop new food products, and public discourse across various platforms like magazines, newspapers, books, and online articles. With a focus on gluten-free as a popular and controversial case, our conceptual models help us provide insights into the growth of gluten-free products and build a causal link between talks in books, mags, articles, newspapers, and NPD decisions over 20 years.

To establish the causal relationship, we use a novel approach developed to detect causality in dynamic deterministic systems called convergent causal mapping. The adopted methodology is superior to classic ones like granger causality as it can reveal causal inferences in non-stationary datasets without restricting the system to linear, stochastic assumptions.

The outcomes are important for NPD literature in terms of providing a connection between long-term (20-year) public discourse and firms' strategic NPD decisions. Managers and policy-makers can also use the framework to gain valuable insight into the dynamics of public discourse and modify their campaigns accordingly.

Friday, 8:30AM

FA06

Marti - Lobby Level

New Product Development: Marketing and Innovation

Contributed Sessions

4 The Impact of Divestments on the Customer, Innovation, and Employee Outcomes

Cem Bahadir[1], Nita Umashankar[2], Sundar Bharadwaj[3], [1]University of North Carolina at Greensboro, Greensboro, NC, [2]San Diego State University, San Diego, CA, [3]University of Georgia, Athens, GA

A firm can reduce its scope by divesting, or selling, certain lines of business. While mergers and acquisitions have been the focus of much of the literature, divestitures have received much less attention. This is surprising given that on average, divestitures account for about one-third of overall deal-making value. The limited research that exists on divestitures has been conducted in the areas of finance and management, while their impact on customers, innovation, and employees has been overlooked entirely. This is a shortfall given that customers are undoubtedly affected by a firm's decision to get rid of brands and products, and as a result, customer satisfaction, a key driver of firm value, is likely to change in response. Divestments may also help firms refocus their innovation activities by letting go off obsolete technologies. Finally, divestments may enable firms to better communicate the focus of the company by exiting businesses that are not central to the firm's future growth path. Addressing this gap, the authors establish a panel of firms spanning dozens of industries. Preliminary results suggest that divestments may have asymmetric effects on customer satisfaction, innovation, and employee engagement.

Friday, 8:30AM

FA07

Merrick 1 - Lobby Level
Influencer Marketing Track: Special Session 5
Special Session

Session Co-Chair
Maximilian Beichert, Mannheim, Germany.

Friday, 8:30AM

FA07

Merrick 1 - Lobby Level
Influencer Marketing Track: Special Session 5
Special Session

Session Chair
Andreas Lanz, HEC Paris, Paris, France.

Friday, 8:30AM

FA07

Merrick 1 - Lobby Level
Influencer Marketing Track: Special Session 5
Special Session

1 Influencer Creativity and User Engagement
Yiwei Li[1], Sheng Liu[1], Flora F. Gu[2], Fine F. Leung[2], Xinyuan Chen[3], [1]Lingnan University, Hong Kong, Hong Kong; [2]Hong Kong Polytechnic University, Hong Kong, Hong Kong; [3]Mississippi State University, Starkville, MS, Contact: victor.li@ln.edu.hk
Influencer marketing has become a huge business, with more than 90% of brands enlisting influencers to create content on social media. Despite its popularity, the effectiveness of influencer marketing campaigns largely depends on consumer engagement with influencer posts. Our study suggests that the creativity of influencer-generated posts is an important determinant of customer engagement. As influencers are independent contractors who are paid to create content for the brand. This agency relationship between the firm and the influencer creates the incentive problem: ***whether and how influencer marketing spend affects content creativity, which further influences consumer engagement***. Based on a dataset of Weibo posts, we gleaned evidence regarding the **negative** impact of influencer marketing spend on content creativity. We argue that the negative impact of spend on creativity is caused by a reduced intrinsic motivation (i.e., to create value for followers through her work) and enhanced extrinsic motivation (i.e., to deliver work in line with the firms' objectives for compensation). In line with this mechanism, we found that the negativity weakens when the firm selects an influencer with higher interactivity with followers (i.e., an influencer with stronger intrinsic motivation to create value for followers). Importantly, our work also suggests an **inverted U-shaped effect** of creativity on consumer engagement. On the one hand, creativity allows influencer marketing content to stand out from the increasingly competitive social media market. On the other hand, too much creativity or deviation from the norm (i.e., the average topic composition) falls into the trap of "niche preferences" which obstructs the maximization of engagement.

Friday, 8:30AM

FA07

Merrick 1 - Lobby Level
Influencer Marketing Track: Special Session 5
Special Session

2 I Wanna Talk About Me Today: Effects of First-Person Pronoun Usage on Media Engagement
Ted Matherly[1], Kalinda Ukanwa[2], Jared Joseph Watson[3], [1]Northeastern University, Boston, MA, [2]University of Southern California, Los Angeles, CA, [3]NYU Stern, New York, NY, Contact: jemather@gmail.com

Engaging consumers with content posted on social media is essential for marketers and influencers. Yet, the broadcast and device-mediated nature of social media can result in impersonal communications which limit the ability to build relationships with an audience. One aspect of written communications that impact relationship building is first-person pronouns (FPP) usage, the focus of this research. Prior research has offered mixed guidance for social media on FPP usage. Increased FPP usage is associated with psychological closeness, which can improve relationship quality and result in increased social media engagement. Yet, FPP usage can convey self-focus, thereby decreasing relationship quality, a key driver of social media engagement. Our study provides evidence that reconciles both findings. We argue that time is a moderator where, in the short term, FPP increases the audience's social media engagement via feelings of psychological closeness to the content creator. But, as a relationship builds over time, repeated exposure to FPP increases perceptions that the creator is self-focused, thereby decreasing engagement in the long-term. We demonstrate this with multiple one-time interaction studies that show that higher levels of FPP usage were associated with more helpfulness votes on Amazon reviews, more views and faster answers to questions on StackExchange, more likes and comments on Facebook news articles, and more click through rates on UpWorthy headlines in a between-subjects experiment. From a novel panel dataset of 622 Twitter microinfluencers' daily tweets to over 3.7 million followers over an 18 month period, we also show that increased FPP usage was associated with a decreased probability of unfollowing the influencer. However, after six months, the effect reversed: increased FPP usage lead to increased probability of unfollowing. Our results suggest that content creators must strike a balance between the competing needs of new followers who demand close relationships and veteran followers who desire content that goes beyond the influencer's self-focus.

Friday, 8:30AM

FA07

Merrick 1 - Lobby Level
Influencer Marketing Track: Special Session 5
Special Session

3 Climbing the Social Ladder - Content Provision and Social Networks in Online Communities

Kitty Wang, University of Houston, Houston, TX

This paper studies how users on an online social platform learn to strategically curate their content in order to climb the social ladder. We examine the question of whether and how users learn from their peers in the process. To this end, we use data from the largest Chinese Question-and-Answer (Q&A) platform. Our dataset includes the number of answers each user provides, and the type of topics related to each piece of content contributed, from which we can construct measures of how focused a user's content contribution is. The data seems to suggest that a platform user either contributes to a wide range of questions (broad-coverage strategy) or focuses on a set of specialized questions (focused strategy). On average, a user's strategy is positively correlated with that of the users he follows. Dividing the user by if they have any higher status in the online platform, we find that when a user already has higher status in the online community, his content contribution is driven more by intrinsic preference rather than strategic considerations in moving up the social ladder. On the contrary, when the user not yet has any status in the online community, his action is highly correlated with what has been done by the users he followers, particularly those who were successful in obtaining higher status. The findings suggest that the users on the online platform seem to care about their social status in the community, and they strategically learn ways to help them climb the social ladder, learning from their peers to reduce uncertainties in the process. What is more, we find that in the pursuit of their social status, the context and "rules" from the online community the users are in are more relevant than actual knowledge and expertise in real life. This suggests that for policymakers in online communities, it is important to think through how status is granted, as they have a direct impact on the content contributed in the online communities, and shape the scope of the platform.

Friday, 8:30AM

FA07

Merrick 1 - Lobby Level
Influencer Marketing Track: Special Session 5
Special Session

4 Video Advertising by Twitch Influencers

Ilya Morozov[1], Yufeng Huang[2], [1]Northwestern University, Evanston, IL, [2]University of Rochester, Rochester, NY

We study the effectiveness of influencer marketing in the video game industry. To this end, we collect novel high-frequency data from Twitch.tv, a major video game streaming platform, by monitoring live streams every 10 minutes for eight months. Using plausibly exogenous variation in the broadcast hours of Twitch influencers, we show that sponsored Twitch streams generate a small and short-lived increase in the number of players and game sales. We also show that sponsored streams encourage other influencers to broadcast the game organically, amplifying the initial effect of the sponsorship. Additionally, live streams serve as informative advertisements that benefit lesser-known games released by small publishers and games with appealing attributes. Combining these results, we provide back-of-the-envelope calculations showing that although sponsored live streams benefit some games, they are not worth the investment in most cases. This result questions the conventional wisdom that influencer marketing generates higher returns on investment than traditional advertising.

Friday, 8:30AM

FA08

Merrick 2 - Lobby Level
Digitization 5: Information and Transparency
Special Session

Session Co-Chair
Ayelet Israeli, Harvard Business School, Boston, MA

Friday, 8:30AM

FA08

Merrick 2 - Lobby Level
Digitization 5: Information and Transparency
Special Session

Session Co-Chair
Pinar Yildirim, University of Pennsylvania, Philadelphia, PA

Friday, 8:30AM

FA08

Merrick 2 - Lobby Level
Digitization 5: Information and Transparency
Special Session

Session Chair
Giorgos Zervas, Bostn, MA

Friday, 8:30AM

FA08

Merrick 2 - Lobby Level
Digitization 5: Information and Transparency
Special Session

1 How Do 3d Virtual Tours Affect Home Sale Outcomes?
Isamar Troncoso[1], Mengxia Zhang[2], [1]Harvard Business School, Boston, MA, [2]Ivey Business School, London, ON, Canada. Contact: itroncoso@hbs.edu
3D virtual tours (VTs) have gained significant popularity among home sellers. While the prevailing belief is that VTs improve home sale outcomes (sale price and time on the market), limited empirical research has examined what drives VT adoption and how it benefits sellers relative to other aspects of the property listing/advertising like photos and descriptions. To fill these gaps, we collect data for 75,178 houses sold between March 2019 and March 2021 in the greater Los Angeles area. Leveraging computer vision and text mining to uncover potential confounders from the unstructured data (photos and descriptions), interpretable and causal machine learning methods, we arrive at three key findings. First, sellers who use VTs are more likely to include longer descriptions and more photos of higher aesthetic quality, suggesting they use VTs as a complement rather than a substitute for such sources of information. Second, after controlling for the length, sentiment, and topics of the descriptions, as well as the quality and content of photos, VT does not significantly affect the sale price and slightly increases time on the market. Last, the benefits of VTs are larger for properties in neighborhoods with more racial minorities and lower-income households.

Friday, 8:30AM

FA08

Merrick 2 - Lobby Level
Digitization 5: Information and Transparency
Special Session

2 Algorithm Failures and Consumers Response: Evidence from Zillow

Davide Proserpio, University of Southern California, Los Angeles, CA

In the last few years, online platforms have introduced Algorithms to aid consumers in making a range of decisions. But adoption and benefits of these algorithms can be limited due to a lack of consumer trust. In this paper, we examine if news of one algorithm's failure transfers to a loss in consumer trust in another algorithm. In November 2021, Zillow announced the closure of its iBuyer business. Popular media attributed this in large part to a failure of its proprietary forecasting algorithm. We study the effect of this algorithm failure news on a different Zillow algorithm called Zestimate. This publicly available algorithm estimates home values to aid home sellers when listing their homes on the market. We show that sellers start making pricing decisions that deviate more from Zestimate after the iBuyer failure news. This confirms that news of iBuyer algorithm failure negatively affects consumer trust in the Zestimate algorithm. We also find that average list prices increase after the iBuyer exit. This is counter to the conventional wisdom that the exit of iBuyer should cool down the market. The deviation of sales price from Zestimate, time on market, and the number of unsold homes also increase. Using a simple analytical model, we explain these findings and argue why they indicate increased market frictions from loss in algorithmic trust.

Friday, 8:30AM

FA08

Merrick 2 - Lobby Level

Digitization 5: Information and Transparency

Special Session

3 Platform Leakage: Incentive Conflicts in Two-Sided Markets

Yingkang Xie[1], Huaiyu Zhu[2], [1]Northwestern University, Evanston, IL, [2]Lalamove, Beijing, China. Contact: yingkang.xie@kellogg.northwestern.edu

Leakage happens when buyers and sellers coordinate outside the platform to cut out the middleman, usually to avoid paying fees. Although platforms are concerned about losing revenue, leakage—by its very nature—is hard to measure and manage. Using geolocation data from a large on-demand service platform for cargo delivery, we identify offline transactions that are typically hard to track in online marketplaces. We exploit a quasi-experiment that gradually introduced driver commissions, thereby generating variation in participants' incentives for leakage. The introduction of this commission increased leakage by nearly four percentage points, doubling the percentage of offline transactions we detected. We leverage the variation in commission fees to estimate price sensitivities and transaction costs in a structural model. The likelihood of leakage increases as the quoted price of the delivery increases, as the drivers' potential savings in the commission exceed the costs of offline coordination. Our model estimates suggest that customers typically receive half of the commission savings from drivers to rationalize their agreement to leakage. Counterfactuals show that a stronger bargaining power of customers would exacerbate platform leakage. To conclude, we discuss how targeting coupons, monitoring technology, and matching policy can mitigate leakage by better aligning the incentives of different parties in two-sided markets.

Friday, 8:30AM

FA08

Merrick 2 - Lobby Level

Digitization 5: Information and Transparency

Special Session

4 The Impact of Platform Commission Rates on Content Creation and Consumption

Pu Zhao[1], Georgios Zervas[1], Xintong Han[2], [1]Boston University Questrom School of Business, Boston, MA, [2]Concordia University, Montreal, QC, Canada. Contact: puzhao@bu.edu

Digital marketplaces like app stores and creator platforms allow small businesses and independent creators to flourish by connecting them to larger audiences on the Internet in exchange for charging them a sales commission rate. However, these rates are sometimes perceived as controversially high. Using a unique dataset from a leading Chinese creator platform, we study how commission rate changes affect creators' pricing strategies, content production, and consumer welfare. We show that when the platform significantly reduced its commission rate for certain eligible creators, content prices on average went up. We then show that this increase in prices was due to a change in competition. Creators who were not eligible for the reduced commission rate exited the platform, reducing competition and resulting in increased prices. At the same time, following the change in commission rates, the quality of the content produced on the platform improved, and creators started interacting more frequently with their audiences. We show that these effects were more pronounced in content categories that had fewer creators that were eligible for the reduced rate. Our results have managerial, legal, and social welfare implications for the design of commission rate schedules on digital platforms.

Friday, 8:30AM

FA08

Merrick 2 - Lobby Level
Digitization 5: Information and Transparency
Special Session

5 Price Monitoring and Response: Evidence from the Long Tail

Ayelet Israeli[1], Eric Anderson[2], [1]Harvard Business School, Boston, MA, [2]Northwestern University, Evanston, IL

With the growth of e-commerce and increasing price transparency, there has been tremendous interest in the adoption and competitive consequences of algorithmic pricing. A premise of algorithmic pricing is that firms monitor competitors' prices and then their pricing algorithms respond. In this paper, we empirically characterize what a major e-commerce retailer knows about competitors' prices as well as the associated price response. A typical view in the literature is that firms have a high degree of knowledge about competitors' prices. We challenge this view by analyzing a large data set of more than 100,000 products from a large and sophisticated e-commerce retailer, which allows us to characterize the supply side of this market. Our findings suggest that price monitoring is highly focused. Many products have no monitoring and while there are numerous competitors, monitoring is typically among two or three key competitors. We also find that competitive price response is limited, but retailers engage in behavior consistent with price exploration.

Friday, 8:30AM

FA09

Grove - Lobby Level
AI: Applications V
Contributed Sessions

Session Chair
Runshan Fu, NEW YORK UNIVERSITY, New York, NY

Friday, 8:30AM

FA09

Grove - Lobby Level
AI: Applications V
Contributed Sessions

1 The Impacts of the Ai-Based Monitoring Algorithm on Human Behaviors: A Random Field Experiment in a Ride-Hailing App

Kaiquan Xu[1], Shunyuan Zhang[2], Yiqian Zhang[3], Hong Liu[1], [1]Nanjing University, Nanjing, China; [2]Harvard Business School, [3]Hehai University, Nanjing, China. Contact: kaiquan.xu@gmail.com

With the quick advancement of AI technologies, business has increasingly used AI-based monitoring system in a wide range of applications. Arguably, the monitoring system brings benefits to our society. At the same time, the monitoring algorithm can also change human behaviors. Past literature on observer effects and on effects of observation on performance suggest that monitoring can lead to better performance. Yet, research also shows that monitoring can also lead to worse outcomes even with good surveillance intention (e.g., to protect employee), for example, employee expressing negative sentiment and even more likely to break rules when being monitored.

In this study, we run a large-scale random field experiments in a ride-sharing platform to investigate the impacts of AI monitoring algorithm on the driver-passenger interactions: 1) are the impacts always positive as we expected or there are unintended consequences? 2) what are the possible mechanisms behind the effects? Our research setting is unique in that the cars are equipped with AI enabled system to record drivers' behavior. For example, if 'bad behaviors' such as smoking in the car is detected from the recordings (audio and video), the driver will receive a warning message from the platform. We randomly assigned drivers to three groups to receive different voice messages, each representing a treatment condition: enhancing monitoring, lowering monitoring, no messages. Drivers in the three conditions perceive that the monitoring has been strengthened, been loosened, or stayed the same. Validation checks confirm that drivers were similar on a set of performance/operation metrics prior to the experiment. We find that the operation metrics from the lowering monitoring group show better performance than the other groups. Opposite with the theory prediction, the lowering monitoring group drivers get more positive ratings from passengers than other two groups. Next, to understand the possible mechanisms of these interesting findings, we analyze the transcript of the recordings and conduct interviews with the drivers.

Friday, 8:30AM

FA09

Grove - Lobby Level
AI: Applications V
Contributed Sessions

2 The Dark Side of Algorithms? the Effect of Recommender Systems on Online Investor Behaviors

Rich Zhu[1], Cheng He[2], Jeffrey Hu[3], [1]Georgia Tech, Atlanta, GA, [2]University of Wisconsin, Madison, Madison, WI, [3]Georgia Institute of Technology, Atlanta, GA, Contact: che78@wisc.edu

Despite the widespread adoption of recommender systems by online investment platforms, empirical research into their impact on online investors' behaviors is scarce. Using data from a global e-commerce platform, the authors of this study adopt a regression discontinuity design to causally examine the effects of recommender systems on online investor behaviors, specifically in a mutual fund investment context. The results show that funds featured by recommender systems prompt significantly more purchases. This effect is especially salient among unsophisticated investors, who appear more likely to follow system-provided recommendations. Further analysis also reveals that these investors tend to suffer significantly worse investment performance after purchasing the recommended funds. Thus, recommender systems threaten to amplify wealth inequality among investors in financial markets.

Friday, 8:30AM

FA09

Grove - Lobby Level
AI: Applications V
Contributed Sessions

3 Why Does My Zestimate Fluctuate?Why Does My Zestimate Fluctuate? Algorithms and Ad Revenues in Housing Marketalgorithms and Ad Revenues in Housing Market

Nikhil Malik[1], Runshan Fu[2], [1]USC Marshall, Los Angeles, CA, [2]NEW YORK UNIVERSITY, New York, NY, Contact: rf2583@stern.nyu.edu

Machine Learning (ML) generated home value estimates, such as Zillow's Zestimate and Redfin Estimate, are gaining attention. They are usually marketed as free tools designed to increase transparency and efficiency in housing markets. While these estimates are usually shown to be reasonably accurate for most of the properties, it is also generally observed that these estimates tend to "swing" significantly for a property over time. It is therefore puzzling where the fluctuations come from. Do they reflect real changes in property values that are not easily detectable by humans, or are they simply unintended artifacts of the algorithms? In this paper, we demonstrate with an analytical model that one potential contributing factor of the large swings is the platform's incentive to maximize its own payoffs. Drawing on the the fact that these platforms usually serve or partner with real estate agents (e.g., Zillow) or are real estate agents themselves (e.g. Redfin), we show that the platforms have an incentive to manipulate ML estimates to induce excess market entry and increase sales volume. When directly manipulating ML estimates is not feasible, the platforms would adjust the level of model fitness in the algorithms to achieve the same goals. This leads to overfitting of the ML models and excessive fluctuations in the ML estimates. These results persist in equilibrium even if homeowners are fully rational about platform incentives. Our results suggests that the seemingly harmless fluctuations may reflect the misaligned interests between platforms and homeowners, and could actually harm homeowners.

Friday, 8:30AM

FA10

Oxford - Level 2
Digital Marketing: Signaling
Contributed Sessions

Session Chair
Yan Xu, Virginia Tech, Blacksburg, VA

Friday, 8:30AM

FA10

Oxford - Level 2
Digital Marketing: Signaling
Contributed Sessions

1 Unexpected Price Promotions Can Hurt Sales

Rae Yule Kim, Montclair State University, Montclair, NJ, Contact: kimr@montclair.edu
Businesses spend majority of their marketing budgets on price promotions at the expense of advertising and product innovation. The effect of price promotions on sales is rarely questioned. Price discount is almost a guaranteed marketing tactic to boost sales immediately. However, price promotions might hurt sales under certain circumstances. Consumers compare a vast number of options based on quality information cues when they make purchases online. Product quality information, online review valence, and price promotions can serve as information cues, and subsequently, consumers utilize this information simultaneously to make purchase decisions. In this article, we examine more than ten million transactions on an accommodation booking website to investigate the moderating role of online review valence and contextual normalcy in the effect of price promotions on sales. The findings suggest that price promotions can decrease sales in the short term. When information cues signal positive product quality and price promotions are not usually expected, such as for luxury hotels, launching price promotions can rather hurt sales, and the moderation effect of online review valence alters.

Friday, 8:30AM

FA10

Oxford - Level 2
Digital Marketing: Signaling
Contributed Sessions

2 Gem or Lemon? Reducing Information Asymmetry in Secondhand Luxury Markets
Alex Yao, San Diego State University, San Diego, CA, Contact: yyao2@sdsu.edu
The secondhand luxury market is a fast-growing sector that has attracted much attention. However, empirical research on this market is still limited. Because information asymmetry is a big challenge in the digital secondhand luxury market, it is important to understand the effectiveness of different information disclosure strategies. Utilizing a secondary dataset to explore this market, this paper finds that the information disclosure effect is important yet complicated in the digital secondhand luxury market, depending on not only how much information to disclose, but also on what type of information to share. Specifically, we find that it is beneficial for sellers to provide more information related to product itself (e.g., through product images). However, providing extra price information may backfire. Additionally, we find that information disclosure influences secondhand luxury sales also through other marketing mix, such as price. Managerially, this study provides guidance to sellers to help them better promote their products in a digital secondhand luxury market.

Friday, 8:30AM

FA10

Oxford - Level 2
Digital Marketing: Signaling
Contributed Sessions

3 The Value of Reputation Badges for Sellers in the Age of Ratings and Reviews: An Empirical Study of Airbnb'S Superhost Program
Rajan Mishra[1], Guofang Huang[1], Manohar U. Kalwani[2], [1]PURDUE UNIVERSITY, WEST LAFAYETTE, IN, [2]Purdue University, West Lafayette, IN, Contact: mishra92@purdue.edu
This paper studies the value of a reputation badge for high-quality sellers on e-commerce platforms amidst the availability of customer reviews and ratings. A reputation badge may serve as a quality signal for experience goods in markets with significant search friction due to, for example, the cost of reading reviews and ratings. Also, sellers with a reputation badge become more prominent than other sellers. When customers who search only a finite number of times search (high-quality) sellers with the badge first, they are less likely to leave the platform without buying anything. We estimate the impact of introducing the seller reputation badge using a unique panel data set from Airbnb. In contrast to the extant research focusing on the impact of a reputation badge on individual sellers, our study focuses primarily on the overall impact of the seller's reputation badge on the platform. Exploiting a regression discontinuity design and an exogenously fixed schedule of updating the Superhost badge, the seller reputation badge on Airbnb, we find a strong positive effect of the Superhost badge system on the bookings and revenue of the Airbnb platform. Furthermore, we find evidence for two mechanisms that contribute to the positive effect of the Superhost badge system. First, the Superhost badge facilitates the bookings of new properties with few ratings and reviews hosted by multiple-property hosts by serving as a positive signal for the latent quality of the host (service). Second, the Superhost badge enhances the prominence of high-quality hosts (of either single- or multiple- properties) on the platform. Because of this, customers are more likely to find a good match before

they give up on searching. Overall, our findings suggest a significant positive value of introducing a seller reputation badge system, even for online platforms that already have customer reviews.

Friday, 8:30AM

FA10

Oxford - Level 2
Digital Marketing: Signaling
Contributed Sessions

4 Reputational Badges on E-Commerce Platforms and the Economics of Product Discovery

Yan Xu, Virginia Tech, Blacksburg, VA, Contact: yanx19@vt.edu

Internet technologies have facilitated information-sharing by allowing consumers to share their reviews; however, paying attention to the information and comparing different review scores can still be costly. In practice, many online platforms provide reputational badges—for example, Etsy's star-seller badge and Airbnb's super-host badge. Yet little is known about the underlying mechanism of how a reputation badge influences online consumers' purchase decisions. Exploiting a policy change on Etsy, we seek to understand to what extent a reputation badge affects information provision or salience, and consequently a consumer's purchase decision. Our results intend to help inform the design of reputation systems in e-commerce platforms.

Friday, 8:30AM

FA11

Cambridge - Level 2
Meet the Editors II
Special Session

1 Moderator

Joseph Johnson, University of Miami, Coral Gables, FL

This session will have panelist for Journal of Marketing Research, Quantitative Marketing and Economics, Journal of the Academy of Marketing Scienc,e Journal of Retailing, and Journal of the Association for Consumer Research.

Friday, 8:30AM

FA12

Trinity - Level 2
Branding: Activism
Contributed Sessions

Session Chair
Marco Qin, Temple University, Philadelphia, PA

Friday, 8:30AM

FA12

Trinity - Level 2
Branding: Activism
Contributed Sessions

1 Social Movements, Consumption Stereotypes and Gender: Evidence from #metoo

Clement Bellet, Erasmus University Rotterdam, Rotterdam, Netherlands. Contact: bellet@ese.eur.nl

Although we know that social movements affect beliefs and public policies, it is not clear how they impact consumption. To address this question, we examine whether and how #MeToo affected the consumption of fashion products designed to target consumers based on stereotypical aspects of their identity. To do so, we analyzed unique and comprehensive high-frequency product-level stockout data from a leading global fashion retailer spanning 5.2 million observations from January 2017 to December 2018 in 32 OECD countries (covering 89\% of the population of OECD members). Using a triple-difference strategy over time, across countries, and between product attributes, we document a change in product-level stockouts consistent with dissociation from gender stereotypes along two major design dimensions: colors (pink or red vs. black or blue) and form (slim vs. bulky shapes; heel height emphasizing silhouette and gait). We discuss the contribution of supply-side effects (product assortments, changes in product prices) relative to demand-side effects in reaction to #MeToo. We discuss the results' implications for firms' communication strategies as they relate to identity targeting and stereotyping, as well as for our understanding of the role of social movements in shaping consumer market dynamics

Friday, 8:30AM

FA12

Trinity - Level 2
Branding: Activism
Contributed Sessions

2 Can Social Justice Movements Mitigate Racial Inequality in Digital Platforms -- an Analysis of Image Signals in the Context of Crowdfunding
Xiongkai Tan[1], Jochen Hartmann[2], Jaap Wieringa[1], [1]University of Groningen, Groningen, Netherlands; [2]Technical University of Munich, Munich, Germany. Contact: kai.tan@rug.nl
Online crowdfunding platforms provide a valuable channel for minority groups to raise funding for various causes. However, research suggests the existence of racial inequality on crowdfunding platforms. Although antiracist social movements offer a potential societal-level solution for reducing racial bias, extant research provides mixed results. Based on a representative sample of crowdfunding campaigns created before November 26, 2020, on GoFundMe, we combine econometric models with unstructured data analysis techniques to investigate the impact of BLM protests surrounding the murder of George Floyd on racial inequality in digital platforms. First, we use the automated image analysis (AIA) tool to detect the faces in the images posted in each campaign and classify the faces into three racial groups, White,Black, and the non-white, non-Black racial group. In addition, we extract thecampaigns' textual features with automated text analysis techniques. We employ propensity score matching (PSM) to match the campaign in the treatment and control groups, and then identify the causal effects of BLM on racial inequality with the difference-in-difference (DID) framework. Our results show a significant negative impact of Black racial cues on crowdfunding performance compared with white and the antiracist social movements can mitigate racial inequality in digital platforms. The BLM protests may have had a spillover effect on other racial minorities and attenuated the inequalities faced by other racial groups, though other minority groups do not benefit as much as the focal race. In addition, we identify the moderating role of category features, showing the impact of social justice movements varies across crowdfunding campaign categories.

Friday, 8:30AM

FA12

Trinity - Level 2
Branding: Activism
Contributed Sessions

3 Separating the Artist from the Art: The Effects of Social Media Boycotts on Human Brands
Daniel Winkler[1], Nils Wlömert[1], Jura Liaukonyte[2], [1]Vienna University of Economics and Business, Vienna, Austria; [2]Cornell University, Ithaca, NY, Contact: daniel.winkler@wu.ac.at
This paper examines how the consumption of a human brand-artist's creative work-is affected when there is a movement to "cancel" the artist on social media due to their misconduct. Compared to product brands, human brands inherently exhibit increased reputation risks, but there is still a lack of understanding about how this affects the consumption of an artist's work. Some argue that the artist's work should be judged on its own merit, while others believe that human brands should be held responsible for their conduct and that consumers should prevent them from benefiting financially from their art. The paper uses the scandal surrounding the music artist R. Kelly as an example to examine the changes in streaming demand for an artist's music in relation to three types of exogenous shocks: the boycott call by the #MuteRKelly movement, the removal of songs from major playlists on a global streaming service, and publicity shocks around major news reports. The results show that R. Kelly's music consumption on streaming platforms decreased, but this was mainly due to the supply-side factors - streaming platforms removing his songs from sponsored playlists - rather than demand-side factors, where consumers chose to stop consuming R. Kelly's music. Additionally, news about R. Kelly's court trials and documentary releases had a positive promotional effect, suggesting that social media boycotts can generate additional publicity and achieve the opposite of some of their intended goals. Overall, we find consistent evidence that consumers can separate the artist from the art-they can condemn the artists for their misconduct but continue to consume their art.

Friday, 8:30AM

FA12

Trinity - Level 2
Branding: Activism
Contributed Sessions

4 Strategic Eschewal in Brands' Lgbtq Activism: A Quasi-Natural Experiment
Marco Qin[1], Xueming Luo[1], Nan Jia[2], Yang Wang[3], [1]Temple

University, Philadelphia, PA, [2]University of Southern California, los angeles, CA, [3]Amazon, Seattle, WA, Contact: shaojun.qin@temple.edu

Brands face heightened expectations from customers to support the rights of lesbian, gay, bisexual, transgender and queer (LGBTQ) people. Using a quasi-natural experiment of then President Donald Trump's celebratory tweet of the pride month in 2019, which was the first time a Republican president endorsed LGBTQ rights and triggered mass outcry over hypocrisy, we find that after Trump's tweet, brands immediately decreased their LGBTQ-related posts on the same platform—Twitter—by 38%, relative to such posts on the Instagram. The reduction of posts on the Twitter and enhancement of activities on the Instagram both lasted throughout the entire pride month, which is significant. Furthermore, we show that it was the brands that held moderate political ideologies—thus whose positions on LGBTQ issues were moderate and open to interpretation—rather than those holding extreme progressive or conservative positions, that adopted such strategic eschewal. Key to successful engagement in LGBTQ activism is to establish a brand's authenticity and sincerity, so brands strive to avoid being associated with hypocrisy. Finally, our supplementary analysis shows that the moderately conservative brands that posted more LGBTQ-related tweets after Trump's tweet received more liking on Twitter, but this effect is absent for brands holding other ideological positions. Our results have implications for brand management.

Friday, 8:30AM

FA13

Escorial - Level 2

Understanding Educational Outcomes Beyond Classroom-based Learning

Special Session

Session Chair

Peipei Cai, Insead, Fontainebleau, France.

Friday, 8:30AM

FA13

Escorial - Level 2

Understanding Educational Outcomes Beyond Classroom-based Learning

Special Session

1 The Effects of On-Demand Content on Consumer and Platform Outcomes in Online Education

Joy Lu[1], Eric T. Bradlow[2], J. Wesley Hutchinson[2], [1]Carnegie Mellon University, Pittsburgh, PA, [2]University of Pennsylvania, Philadelphia, PA, Contact: tonglu@andrew.cmu.edu

Online educational platforms increasingly allow users to learn in a self-paced manner with flexible content completion options. We study over 64,000 business course students on a major online educational platform before vs. after a natural experiment where the platform switched from a "traditional" format with weekly content release and one-time course certificate fees, to an "on-demand" format with all content immediately available and monthly subscription options. We find that on-demand content affected both consumer and platform-oriented outcomes. In particular, on-demand content increased binging and decreased quiz performance. However, the performance drop was offset by a segment of the on-demand cohort who continued to complete quizzes well past the recommended 4-week course period. This "stretching out" of consumption was also reflected in the on-demand cohort engaging in fewer additional courses in the 6 months following the focal course. On the positive side, on-demand content increased the rate of payment, yielding greater potential for firm revenue. These results were robust to different matching and stratification methods, and persisted in the year following the switch. Our work demonstrates the pros and cons of offering users flexibility with on-demand content, which provides guidance to platform managers considering this switch.

Friday, 8:30AM

FA13

Escorial - Level 2

Understanding Educational Outcomes Beyond Classroom-based Learning

Special Session

2 The Impact of Book Bans on Readership

Ananya Sen, Carnegie Mellon University, Pittsburgh, PA

Banning books has been a common theme in the history of United States education. But the pace at which ban events are occurring has increased tremendously in the past few years. And so have the political ramifications of such banning exercises. But the impact of such ban events on the demand for banned books is not yet clear. In this study, using state-month level data on book circulations for about 60% of the school and public libraries in the United States, we evaluate the impact of book bans on the readership of the banned books in the banned states and the spillovers to non-banned states. We observe that books that have been proposed to be banned from public or school libraries generally have two main themes - race-related and LGBTQ literature related. We find that instead of inhibiting readership, the ban events mostly act as word-of-mouth marketing events for the books proposed to be banned and increase the book readership. This increase in readership is driven mostly by physical format copies and not by digital formats. Interestingly, LGBTQ-themed books observe a large increase in readership post-ban events, and readership of race-related books either have no impact or is negatively impacted by the bans. Additionally, we also find that bans have spillovers into non-banned "blue" states - banning a book in one state leads to an increased readership in non-banned "blue" states. Given the obvious political nature of these ban events, we also look at the impact of bans on political donations for individual donors. Interestingly, we find that individual donations to republican candidates decreased compared to donations to Democratic candidates after the ban events.

Friday, 8:30AM

FA13

Escorial - Level 2

Understanding Educational Outcomes Beyond Classroom-based Learning

Special Session

3 Determinants and Outcomes of Free Trial Usage Patterns in Online Education

Peipei Cai, Paulo Albuquerque, INSEAD, Fontainebleau, France. Contact: peipei.cai@insead.edu

Despite the prevalence of free trials as a customer acquisition strategy in the service industry, enhancing its performance remains a significant challenge. Extant research have revealed the positive relationship between trial usage and conversion rates. However, our understanding of how to enhance consumer trial usage experience and what is the optimal usage pattern that leads to higher conversions is still limited. We study determinants and outcomes of trial usage using data from an online educational platform for the child. We introduce a factor - the structure of consumers' weekly routine - that has been neglected in the trial literature. Our preliminary analysis shows that there exists the day-of-week effect. To be more specific, we find that the day of the week creates an exogeneous shock to consumer daily trial usage, and that consumer usage and subscription decisions are influenced by the day of the week on which they start the first trial. We build and estimate a joint model of trial usage and adoption decision that account for consumer self-selection to engage in activities. The estimates of corresponding primitives allow us to conduct counterfactual experiments to determine how alternative policies can affect consumption and conversion.

Friday, 8:30AM

FA14

Alhambra - Level 2

Game Theory: General III

Contributed Sessions

Session Chair

Birger Wernerfelt, Massachusetts Institute of Technology, Cambridge, MA

Friday, 8:30AM

FA14

Alhambra - Level 2

Game Theory: General III

Contributed Sessions

1 The Self-Regulating Role of Price Caps on Ticket Platforms

Da He, Song Lin, Hong Kong University of Science and Technology, Hong Kong, Hong Kong.

The secondary market for event ticketing has grown rapidly with the participation of a number of platforms such as Ticketmaster Resale, StubHub, Viagogo, etc. A platform facilitates ticket exchanges between buyers and sellers, and collects revenues in proportion to the price of every transaction. Anecdotal evidence suggests their profits grow with soaring prices and they have strong incentives to connive with ticket speculators. However, we observe a recent wave of self-regulations: many ticket platforms impose a price cap on the resale prices, which seems to be an attempt to restrain the profit margins of ticket sellers at the expense of platform profits. Using a model of a decentralized platform with many buyers and sellers, we show that, in some circumstances, an optimal price cap can actually increase the average transaction prices, thereby hurting the buyers. Our analysis sheds light on the role of price cap introduced by matching platforms and its welfare implication.

Friday, 8:30AM

FA14

Alhambra - Level 2

Game Theory: General III

Contributed Sessions

2 Product Upgrade and Pricing in the Presence of Time-Inconsistent Consumers

Wanjiang Deng, Wei Shi Lim, National University of Singapore, Singapore, Singapore.

How do time-inconsistent consumers make purchase choices between two successive products? Utilizing a semi-hyperbolic utility function, we model consumers' inconsistent upgrade behavior due to present-bias. Specifically, the naive consumers who cannot accurately predict the present-biased preference will make inconsistent intertemporal choices while the sophisticated consumers are consistent as they can predict the bias. Based on the comprehensive demand patterns, we further model and solve a monopolist's decision problem about price and quality. Firstly, the firm can adopt either Expensive Upgrade (EU) strategy or Less-expensive Upgrade (LU) strategy according to a high or low net value for the upgrade, respectively. With EU strategy, the firm can induce more naive consumers with moderate valuations not just to purchase the 1st-generation product (G1) but also to upgrade to the 2nd-generation (G2). Therefore, when the present-bias is severe or the proportion of the naive consumer is high, the firm prefers EU strategy. Secondly, our analysis sheds light on the importance of a resale market as it can significantly change consumers' purchase behavior and the firm's optimal upgrade-pricing strategies. A positive resale price, together with the present-bias, drives the naive consumers to purchase G1 and also inconsistently upgrade to G2. Lastly, our numerical analysis demonstrates an interesting finding that a more severe time-inconsistency could decrease the monopolist's profit even under the optimal upgrade-pricing strategy.

Friday, 8:30AM

FA14

Alhambra - Level 2

Game Theory: General III

Contributed Sessions

3 Small Talk as a Contracting Device: Trust, Cooperative Norms, and Changing Equilibria

Birger Wernerfelt[1], Matthew P. Cashman[1], Boris Maciejovsky[2], [1]Massachusetts Institute of Technology, Cambridge, MA, [2]University of California Riverside, Riverside, CA, Contact: bwerner@mit.edu

We show experimentally that even very brief small talk with a potential trading partner may function as contracting device by enhancing trust and strengthening cooperative norms. Our subjects engage in a video call prior to playing a game in which one player has to trust that the other will not hold them up. The call has large effects on trust and efficiency in spite of the fact that it takes place before the subjects know anything about the game. In contrast to formal contracts, pre-trade small talk can cover contingencies that are truly unforeseen, and unlike relational contracts, it does not depend on repeated play. It complements, and may even substitute for, incomplete contracts. We also show that between-stage small talk in sequential games can help players move from less to more efficient equilibria, again looking at a case in which the players do not know anything about the second period game.

Friday, 8:30AM

FA15

Michaelangelo - Level 2

CRM: Customer Journey and Loyalty

Contributed Sessions

Session Chair

Ying Lei, Peking University, China.

Friday, 8:30AM

FA15

Michaelangelo - Level 2

CRM: Customer Journey and Loyalty

Contributed Sessions

1 Wishful Thinking: An Exploration of Wishlists

K Pallavi Jha[1], Ivy Dang[2], [1]University of Pittsburgh, Pittsburgh, PA, [2]University of Hong Kong, Hong Kong,

China. Contact: kpj7@pitt.edu

Consumer decision journey has evolved due to the advancement of digital technology. To facilitate consumer's shopping journey, many e-tailing sites provide the wishlist function, where consumers can search products and add them to wishlists before finally purchasing or eliminating a product. Though important, very few prior works have studied wishlists in detail. We address three research questions associated with wishlists: Why do consumers add products to wishlists? Which visit and product characteristics influence wishlist addition? And does wishlist addition have an impact on purchase? Our objective is to explore the process of wishlisting. Wishlist can be used as gift registries or temporary holding area. There can be three potential reasons for using wishlists as a temporary holding area: a) Waiting for a change in product attributes b) Evaluating products in a consideration set c) Creating online shopping list. Leveraging a rich clickstream dataset from an e-commerce platform in Asia, we explore consumer's decision funnel of wishlisting. In the first stage, we examine the potential reasons for wishlisting. In the second stage, we examine the impact of session and product characteristics on wishlist addition. This study will extend our understanding of online consumer decision journey by examining the wishlisting process in detail. Lastly, we will derive managerial implications of wishlisting for e-commerce platforms.

Friday, 8:30AM

FA15

Michaelangelo - Level 2

CRM: Customer Journey and Loyalty

Contributed Sessions

2 Reading the Mind of Dissatisfied Customers: An Empirical Analysis of Complaint Resolution Process

Hyeasinn Song, Yi Zhao, Yusen Xia, J. Mack Robinson College of Business, Georgia State University, Atlanta, GA, Contact: hsong19@student.gsu.edu

Post-purchase communication plays a crucial role in enhancing overall customer satisfaction. Dissatisfied consumers file complaints to redress their problems or express their negative experiences. When consumers file complaints, however, it is often challenging to reach an amicable solution with little time and effort. Inadequate complaint management poses a threat to brand equity by resulting in negative word of mouth and hindering quality improvement effort. While prior research primarily focuses on the content of replies and outcomes in complaint resolution, it has given limited attention to the dynamic process. To address this gap, we propose a hidden Markov model framework to model the dynamics of complaint resolution by capturing the transitions among latent relationship states. We assume 3 stages of the consumer as initiation stage, problem-solving stage, and finalization stage. When consumers fail to receive a satisfactory response, they may quit the communication before reaching the finalization stage. Our research aims to accelerate the complaint resolution process by exploring the factors that facilitate consumers' transition towards resolution. Specifically, we examine the effects of the frequency and duration between the complaint and reply, message topics in replies, and negotiation strategies. We use Latent Dirichlet Allocation (LDA) to analyze unstructured (text) longitudinal data of individual-level complaints. Overall, this research advances the knowledge on customer relationship management by offering practical implications for effective complaint response strategies.

Friday, 8:30AM

FA15

Michaelangelo - Level 2

CRM: Customer Journey and Loyalty

Contributed Sessions

3 Exclusive Dealing, Customer Loyalty and Platform Competition

Lijuan Luo[1,2], [1]Renmin University of China, Beijing, China; [2]Cornell University, Ithaca, NY, Contact: ll954@cornell.edu

To compete for more market share, platforms could sign exclusive dealing contracts with sellers who have large cross-side network effects so as to attract more customers. Another way for platforms to extract and maintain market share is to build up customer loyalty towards the platform itself. Exclusive dealing is commonly used in different platforms, and it is less costly and short-term-focus compared with building up the customer loyalty for the platform itself. However, it raises widespread antitrust concerns. Based on prior literature on the welfare effect of exclusive dealing in a two-sided market, I introduce the heterogeneity in the customer's side by segmenting customer's loyalty into two types, which are the loyalty to the sellers and the loyalty to the platform itself. Different from the traditional wisdom, I find that even if the rival platform initiates exclusive dealing, the profitability of the focal platform could also increase if the focal platform enjoys high customer loyalty. The intuition is that customers with seller loyalty will be attracted to the platform that sellers are single-homing. However, customers with platform loyalty will choose to stay on their preferred platform, which could offset the negative impact of exclusive dealing proposed by rivals. This paper suggests that exclusive dealing may be a short-sighted behavior of prisoner's dilemma, and emphasizes the importance of cultivating customer loyalty for the sustainable development of the platform. These results also provide new insights to the antitrust authorities.

Friday, 8:30AM

FA15

Michaelangelo - Level 2

CRM: Customer Journey and Loyalty

Contributed Sessions

4 Searching for Rewards

T. Tony Ke[1], Xu Zhu[2], Jiwoong Shin[3], [1]Chinese University of Hong Kong, Hong Kong, Hong Kong; [2]The Chinese University of Hong Kong, Hong Kong, Hong Kong; [3]Yale School of Mangement, New Haven, CT, Contact: xu.zhu@link.cuhk.edu.hk

Loyalty programs are a commonplace in many markets. It allows enrolled members to receive rewards based on their past purchases and redeem these rewards for future purchase. Based on a repeated ordered search framework, we propose a new theory for loyalty programs in a frictional market. Consumers search for product information sequentially over many firms, each of which offers two independent products in two periods. Consumers make a purchase from one firm in each period. We find that firms use both price discounts and rewards to attract consumers, where price discounts deter consumers from continuing to search other firms in the current shopping trip, while rewards enable the firm to gain prominence in consumers' next shopping trip. Consequently, as the search cost gets higher, firms offer lower price discounts but higher rewards. Overall, loyalty programs always decrease industry profit and raise/reduce consumer surplus when the search cost is high/low. We further extend our framework and analyze how firms' networks affect loyalty programs.

Friday, 8:30AM

FA15

Michaelangelo - Level 2

CRM: Customer Journey and Loyalty

Contributed Sessions

5 On the Profitability of Loyalty

Ying Lei[1], Ji Shen[1], Ei Yang[2], Xin Zhai[1], [1]Peking University, Beijing, China; [2]Shanghai University of Finance and Economics, Shanghai, China. Contact: ylei@gsm.pku.edu.cn

This paper aims to contribute to the understanding of customer loyalty and its relationship with firm profits. Customer loyalty may be driven by various factors, such as favorable brand attitude and switching costs, and is often viewed as a strong indicator of a company's profits. However, empirical findings are conflicting on the profitability of customer loyalty, and yet a comprehensive framework to analyze the link between customer loyalty and firm profits is still lacking. This paper fills the gap in the literature and proposes an analytical framework to characterize how repeat-purchase loyalty is generated from consumer choice in a dynamic competition environment and examines the impact of brand preference, switching costs, and consumer myopia on firm profits and customer loyalty. The results indicate that favorable brand preference can result in profitable customer loyalty, while switching costs do not. We also extend the model to different scenarios of consumer preference change processes and demonstrates the robustness of the results.

Friday, 8:30AM

FA16

Raphael - Level 2

Online Reviews #2

Special Session

Session Co-Chair

Andreas Bayerl, Mannheim, Germany.

Friday, 8:30AM

FA16

Raphael - Level 2

Online Reviews #2

Special Session

Session Chair

Frank Ohnesorge, [1]</sup

Friday, 8:30AM

FA16

Raphael - Level 2
Online Reviews #2
Special Session

1 Hospital Text Reviews: Patients' Perceptions of Their Experience

Nah Lee[1], Rick Staelin[2], [1]SKK GSB, Seoul, Korea, Republic of; [2]Duke University, Durham, NC, Contact: rstaelin@duke.edu

Despite the recent increase in the availability of online hospital reviews, little is known about how the content of these reviews reflects the patient's overall perceptions of the hospital visit experience. In order to understand the prevalence of specific topics discussed and the impact of these topics on the final star rating for the patient's experience, we conduct a descriptive study of over 317,000 Google hospital reviews from 4k U.S. hospitals using a combination of 1) LDA topic modeling to classify each review in terms of topics covered, 2) sentiment analysis to confirm the valence of each topic, and 3) a Prolific survey used to verify the topic names and valences given to the LDA-identified topics. We find the following empirical observations coming from our analysis. 1) It appears that 10 unique topics adequately capture the types of experiences patients document in text reviews. 2) These topics are most often valenced and on a general level fit the five-category classification of services put forth by Parasuraman et al. (1988) 3) However, these topics do not line up well with the standard way that the CMS use to classify experiences, i.e., patients do not compartmentalize most of their comments to specific staff—doctors, nurses, etc.—or departments. 4) Reviews often contain information on more than one topic and can contain both positive and negative information. 5) There seems to be little correlation between most of the topics in terms of the prevalence of one topic affecting the prevalence of a second topic, other than that like-valenced topics tend to be more likely to appear together. 6) Topics have varying partworth values, i.e., the values that make up the patient's overall evaluation utility. Importantly (and somewhat surprising to us), it appears that non-clinical interactions with staff are about twice as important as clinical interactions in predicting overall evaluations. 7) After accounting for the different types of topics, the magnitudes of the partworth values are slightly higher (lower) for positively (negatively) valenced topics.

Friday, 8:30AM

FA16

Raphael - Level 2
Online Reviews #2
Special Session

2 Company Size and Electronic Word of Mouth

Jan Klostermann[1], Anne Mareike Flaswinkel[2], Chris Hydock[3], Reinhold Decker[2], [1]University of Cologne, Cologne, Germany; [2]Bielefeld University, Bielefeld, Germany; [3]Cal Poly - San Luis Obispo, Orfalea College of Business, San Luis Obispo, CA, Contact: klostermann@wiso.uni-koeln.de

In the last decades, marketing scholars and practitioners have been keen on understanding what motivates consumers to use the internet (e.g., social media and review platforms) to articulate their opinions on products, services, and companies publicly (i.e., electronic word of mouth; eWOM). In this paper, we investigate if company size affects electronic word of mouth valence. While one intuitively expects that larger companies receive a higher volume of eWOM articulations, given a higher number of actual customers, it is less clear if company size affects the valence of these articulations (i.e., number of stars in a review or the sentiment of a social media post). We test this relationship throughout several field studies including eWOM articulations from different sources such as online review platforms (Yelp, Tripadvisor, and Amazon) and social media platforms (Twitter and Instagram) for more than 250 companies including both product and service providers. Using both a between- as well as a within-subjects design, we consistently find a negative effect of company size on eWOM valence. Subsequent experiments show that satisfaction with a product or service increases (decreases) the intention to share if the company is a small (big) player. We find that the effect is stronger (i.e., more negative) for service vs. product providers. Further, we find that large companies are actively able to mitigate the negative effect of size on eWOM valence through a high response rate on social media (i.e., answering the company related social media posts from consumers).

Friday, 8:30AM

FA16

Raphael - Level 2
Online Reviews #2

Special Session

3 Persuasive Online Reviewer Behavior

Frances Wang, Christopher Anderson, Cornell University, Ithaca, NY, Contact: xw568@cornell.edu

We incorporate simple cost-benefit considerations into a model of information provision for social learning. Agents differ both in their taste for the product and in the amount of the incentive they have, both to influence others and to enhance their position on the platform. Our model rationalizes several patterns of reviewer behavior. At the individual level, when reviewers experience larger disconfirmation between the expectation and actual experience, they exert more effort to provide more persuasive reviews; at the aggregate level, the model helps explain the asymmetric bimodal (J-shaped) distribution of online reviews resulting from reviewers' strategic polarization behavior. We provide machine-learning methods for quantifying the persuasive power of online reviews, and validate our theoretical predictions using a massive dataset consisting of hotel ratings and reviews.

Friday, 8:30AM

FA16

Raphael - Level 2

Online Reviews #2

Special Session

4 Seeking for the Bias: The Informativeness of Online Product Ratings

Frank Ohnesorge[1], Andreas Lanz[2], Amos Schurr[3], Daniel Shapira[3], [1]University of Mannheim, Mannheim, Germany; [2]HEC Paris, Paris, France; [3]Ben-Gurion University of the Negev, Be'er Sheva, Israel.

In an abundancy of information and opinions, consumers rely heavily on online product ratings on ecommerce platforms for constructing preferences and making purchase decisions. As mean ratings are often not informative, the distribution of online product ratings along the rating scale is critical for consumers to construct preferences. Previous research emphasizes the importance of representativeness of these distributions with respect to the underlying population of consumers' experiences and critiques the prevalence of extremely distributed ratings. Our work provides a contrary perspective on this prevailing thought of undesirable extreme rating distributions by shedding light on consumers' preferences in information interest based on online product ratings. We review consumers' information interests when considering ratings, and whether these ratings help them constructing preferences. We build on prospect theory and multiple studies to argue that consumers try to understand sources of uncertainty by focusing on the tails of the rating distributions, and that a reduction of extremity in ratings does not improve the basis for consumer decision-making. Contrary to current belief and knowledge, we uncover that costly measures (e.g., incentivizing reviews) resulting in more representative rating distributions may be redundant. Consumers are seeking information at the extreme ends of the rating scale, and more centered rating distributions do not improve the ability of consumers to construct rational preferences.

Friday, 8:30AM

FA17

Balmoral Level 2

Blockchain Meets Marketing 2

Special Session

Session Co-Chair

David Finken, 1</sup

Friday, 8:30AM

FA17

Balmoral Level 2

Blockchain Meets Marketing 2

Special Session

Session Chair

Renana Peres, The Hebrew University, Israel.

Friday, 8:30AM

FA17

Balmoral Level 2

Blockchain Meets Marketing 2

Special Session

1 Preserving Essence: Can Nfts Capture Immaterial Values of Objects?

David Finken[1], Tim Döring[2], [1]University of Lucerne,

Lucerne, Switzerland; [2]Maastricht University, Maastricht, Netherlands. Contact: david.finken@unilu.ch

Non-fungible tokens (NFTs) represent a novel way to certify ownership rights to digital art, with most of NFT research focusing on valuation (Zhang 2022). The research proposes, for example, that popularity (v. scarcity) drives NFT value (Hofstetter et al. w.p.). Extending prior research, we propose and find that NFT (v. print) art is better at preserving art's essence. Art's value is tied to a tangible masterpiece conveying the intangible values of the artist—the artist's essence (Vasan et al. 2022). Conveying essence prerequisites direct contact between the artist and the art (Newman et al. 2014). NFT art lacks direct contact, which spurred the question of whether and when the essential identity of NFT art differs from print art. Based on essentialism and contagion theory (Gelman 2003; Rozin et al. 1986), we predict that NFTs (v. print) art contain less essence. We argue that the virtual nature of NFTs reduces art's tangibility. Yet, NFTs' intangible nature preserves their essence after being destroyed and recreated. Three experiments test our predictions, with the first (N=299) showing that essence decreases for NFTs (v. print, v. stock photo) with intangibility explaining the results (NFT v. print: CI=[.11,.70]). Experiment 2 (N=210) shows that—after being destroyed and recreated by the artist's assistant—potential buyers are more interested in buying the recreated NFT art (M_{Print}=3.02; M_{NFT}=3.71; p=.006) with perceived essence explaining findings (CI=[.09,.32]). Experiment 3 (N=398) shows a significant interaction on the essence of art (F(3,394)= 6.00, p=.015) in a 2x2 design (availability of art copy (NFT v. print) x original art (still exists v. was destroyed)). Essence increases for the NFT-copy ($M_{destroyed}$=4.19; M_{exist}=3.68; p=.04) but not for the print-copy ($M_{destroyed}$=4.66; M_{exist}=5.02; p=.15). Using whether the copy captures the identity of the original as the dependent variable, and essence as mediator revealed a significant index of moderated mediation (CI=[1.98,19.30]). Destroying the original art increases the essence captured by an NFT copy (v. print copy).

Friday, 8:30AM

FA17

Balmoral Level 2

Blockchain Meets Marketing 2

Special Session

2 Bias in the Metaverse Gender and Racial Price Disparities in the Nft Marketplace

Yuan Yuan[1], Xiao Liu[2], Kannan Srinivasan[1], Shunyuan Zhang[3], [1]Carnegie Mellon University, Pittsburgh, PA, [2]New York University, New York, NY, [3]Harvard Business School, Boston, MA, Contact: yuany3@andrew.cmu.edu

Non-fungible Token (NFT) investors are generally young, high-income, and progressive. After applying a combination of causal inference and machine learning methods to discover the impact of race and gender of NFT avatars on market valuations, our findings suggest the existence of price disparities in the NFT marketplace, where Female CryptoPunks avatars sell for 36.8% less than otherwise comparable male avatars, and Black CryptoPunks sell at a 30.7% discount. These gaps have widened over time and vary to major political events. Consistent with similar effects in the digital marketplace, this finding suggests that social complexities infect the NFT market. Our further analysis identifies the avatar features that mitigate these biases by up to 7.4% and provide policy implications for fairness in the NFT marketplace.

Friday, 8:30AM

FA17

Balmoral Level 2

Blockchain Meets Marketing 2

Special Session

3 Scaling Smart Contracts via Layer-2 Technologies: Some Empirical Evidence

Lin William Cong[1], Xiang Hui[2], Catherine Tucker[3], Luofeng Zhou[4], [1]Cornell University, Ithaca, NY, [2]Washington University in St. Louis, St Louis, MO, [3]MIT, Cambridge, MA, [4]Columbia, New York, NY, Contact: hui@wustl.edu

Blockchain-based smart contracts can potentially replace certain traditional contracts through decentralized enforcement and reduced transaction costs. However, scalability is a key bottleneck hindering their broader application and adoption, often leading to concentrated or exclusive networks. To avoid falling short of the original promise of the technology, firms actively explore ``layer-2'' methods for scaling. We provide some initial evidence on the economic implications of a layer-2 scaling solution, which moves information aggregation from on-chain to off-chain peer-to-peer networks. A parallel-system experiment allows clean identification because we observe the same unit in the treatment and control systems at the same time. We find that this scaling solution reduces operating costs by 76%, and importantly, leads to decentralization with lower market concentration and more participation, which in turn improves data accuracy. The findings provide insights on how blockchain and smart contracting technologies evolve towards achieving decentralized and scalable trust.

Friday, 8:30AM

FA18

Windsor - Level 2
Retailing:Marketing Strategy
Contributed Sessions

Session Chair
Fred M. Feinberg, University of Michigan, Ann Arbor, MI

Friday, 8:30AM

FA18

Windsor - Level 2
Retailing:Marketing Strategy
Contributed Sessions

1 The Impact of Minimum Advertised Pricing Policy on Channel Management: Evidence from a Quasi-Experiment

Fahmi Grey, Katrijn Gielens, University of North Carolina-Chapel Hill, Chapel Hill, NC, Contact: fahmi_grey@kenan-flagler.unc.edu

In an increasingly competitive market where web crawlers are driving prices down in real time to match the lowest available price, manufacturers are experiencing a cascading effect of price erosion across their retail accounts, a detriment to profits. As a result, managing increasingly complex online and offline retail accounts, while simultaneously safeguarding intended resale prices, becomes critical to channel management. Many manufacturers are turning to MAP policies as a means to regain control over their channels and marketing strategies. In essence, MAP policies act as vertical price constraints designed to protect margins and maintain channel harmony. Consequently, the resulting price floor cannot be enforced. MAP violations, however, can result in (non-price) penalties, such as reductions of manufacturer incentives or termination of distribution. In spite of this, relatively little is known about the outcome of MAP policies. How effective are MAPs at preventing or reducing price distortions? In what ways do they assist manufacturers in safeguarding revenues and profits? Are they displacing retail accounts? In order to assess these effects, we use data from a Fortune 500 manufacturer that introduced MAPs in a number of product categories (but not all) between 2020 and 2022. With this quasi-experimental setting, we examine the degree to which MAP policies reduce price deviations and benefit or harm manufacturers' demand. In addition to providing marketers with insights into the return on investment of MAP policies and their implementation, this study contributes to our understanding of the effects of MAP policies as a form of vertical constraints.

Friday, 8:30AM

FA18

Windsor - Level 2
Retailing:Marketing Strategy
Contributed Sessions

2 Cross-Platforms Merger Effects

Ujjwol Paudel, Arizona State University, Tempe, AZ, Contact: upaudel1@asu.edu

Mergers and acquisitions within same platforms are frequently associated with changes in prices and variety of the firms' products. To our knowledge, there is no empirical research on the price and quality effects of integration across different platforms. We investigate this problem by analyzing the effects of an acquisition of a national grocery chain by a big online retailer in the United States. Our study differs from prior studies on mergers and acqusitions as platforms in our study are subject to indirect network externalities. More precisely, after a cross-platform M&A, restrictions on indirect network externalities of both the online platform and physical retailer are relaxed, as the universe of suppliers and consumers both expand increasing consumer demand, increasing suppliers' demand for distribution services. A preliminary result using two-way fixed effects regression in difference-in-differences framework shows an increase in prices of 26 grocery products by 1.4% to 1.7% following the cross-platforms integration. We intend to use further econometric specifications like synthetic control and propensity score matching methods to provide further validations of our results on price estimates. For the quality estimates, we adapt Cox and Wohlgenant (1986) to find the effects of the cross-platform integration on grocery prices of 26 products in the US.

Our paper makes two contributions. First, we provide empirical insights on the price and quality effects of M&A across different platforms. To the best of our knowledge, this is the first study that analyzes both effects following a merger or acquisition in the grocery industry. Second, the paper contributes to the general literature of platform economics. By studying a merger between a large online platform with strong network effects and a physical grocery platform with relatively weaker network externalities, we provide empirical evidence on how the merger of the two forces change the grocery price and quality in the US.

Friday, 8:30AM

FA18

Windsor - Level 2
Retailing:Marketing Strategy
Contributed Sessions

3 Examining the Adverse Effect of Consumption Threshold in Conditional Promotion

Qingliang Wang[1], Xue Li[2], [1]Xi'an Jiaotong University, Xi'an, China; [2]Northwester Polytechnical University, Xi'an, China. Contact: qingliang.wang@xjtu.edu.cn

To increase sales volume and profit, retailers usually set specific conditions (such as consumption threshold) for consumers to participate in a promotion called conditional promotion. However, because consumers will strategically change their consumption to obtain price discounts, conditional promotion may negatively affect consumers' purchase volume, which the existing literature has ignored. This study aims to systematically examine the possible adverse effect of the consumption threshold in conditional promotion on consumer purchases. We collect consumer transaction data from a refueling service platform. Consumers could participate in different conditional promotion campaigns to get a price discount on this platform. The platform could also make it easier for consumers to fill their gas tanks when there are no promotions. Our empirical analysis shows strong evidence of consumers' strategic behavior in conditional promotion campaigns. That is, when the consumption threshold of conditional promotion is lower than consumers' consumption amount without participating in any promotions, consumers will strategically reduce their purchase amount to exploit the price discount. Meanwhile, we find that this adverse effect of conditional promotion becomes stronger with the increase in consumers' purchase experience and weakens with the increase in consumers' income level. This study provides theoretical guidance for retailers on effectively using conditional promotion to improve sales performance and reduce its negative impact.

Friday, 8:30AM

FA18

Windsor - Level 2
Retailing:Marketing Strategy
Contributed Sessions

4 Price-Gouging Regulation During the Pandemic: Causal Effects and Policy Implications

Fred M. Feinberg[1], Hongxian Huang[2], Shashank Vaid[3], [1]University of Michigan, Ann Arbor, MI, [2]New York University, New York, NY, [3]McMaster University, Hamilton, ON, Canada. Contact: feinf@umich.edu

Price gouging regulation (PGR) helps ensure that essential goods, e.g., medical supplies or grocery staples, remain affordable and accessible. During the COVID-19 pandemic, PGR was implemented due to widespread reports of price-gouging on such critical items. Extant research offers few insights for policymakers and marketers into how PGR influences consumer spending and sales during crises. Using Generalized Synthetic Control, we examine the overall and relative effectiveness of different types of PGR legislation, as well as the moderating effects of consumer mobility and the enactment of strict price caps. We find that PGR is generally highly effective, especially when it is not overly comprehensive and for products that are "essential"' (e.g., paper towels) but not obviously related to preventing contagion (e.g., hand sanitizer). Moreover, PGR's overall effectiveness is strongly moderated by both specific price caps and consumer mobility. Our results have direct implications for policymakers deciding whether to enact PGR as well as setting specific design features depending on locality.

Friday, 8:30AM

FA19

Sandringham - Level 2
Pricing: General
Contributed Sessions

Session Chair

Vinay Kanetkar, University of Guelph, Guelph, ON, Canada.

Friday, 8:30AM

FA19

Sandringham - Level 2
Pricing: General
Contributed Sessions

1 The Effect of Price, Quality, Risk, Coo on Customer-Perceived Value

Connie Chang, Musashino University, Tokyo, Japan. Contact: connie@musashino-u.ac.jp

This study aims to examine the COO label effect on customer-perceived value toward luxury goods. Specifically, it focuses on the relationship between price, quality, risk and customer-perceived value depend on COO label. Over the past few decades, a considerable number of studies have been conducted on product quality (Thakor & Lavack, 2003), premium price (Han, 2010) and willingness to buy (Cheah, Zainol & Phau, 2016) related to luxury goods. Very little attention has been given to the impact of COO label on customer-perceived value and its conditional effect on other marketing variables in a highly developed free-market economy setting. This is the gap that this study attempts to address. A mixed method was employed. Four face-to-face Japanese consumer interviews were conducted. A total number of 122 valid online self-administered respondents were collected and analyzed by SPSS PROCESS V4.0. The findings suggest price is positively related to customer-perceived value among those "relatively high" and "moderate" in COO label. About the 49st (value=4.57) percentile of the distribution of the COO label and above is statistically significant. Quality is also related to customer-perceived value among "relatively low", "moderate" and "relatively high" in COO label. Therefore, there is a statistically significant association between quality and customer-perceived value depend on COO label. In addition, about 1st (value=1.532) percentile of the distribution of the COO label and above is statistically significant, indicating the relationship between price and customer-perceived value is strongly influenced by COO label. Japanese consumers reply heavily on the information shown on the label when determining the product quality. Therefore, the COO label effect remains significant when Japanese consumers purchase luxury goods.

Friday, 8:30AM

FA19

Sandringham - Level 2
Pricing: General
Contributed Sessions

2 Consumer Preference Inconsistencies in Costly Price Offers

Robert Zeithammer[1], Lucas Stich[2], Martin Spann[3], Gerald Häubl[4], [1]UCLA, Los Angeles, CA, [2]Julius-Maximilians-Universität Würzburg, Würzburg, Germany; [3]Ludwig-Maximilians-Universität München, München, Germany; [4]University of Alberta, Edmonton, AB, Canada.

Consumers submit price offers to sellers in a variety of domains. Submitting an offer often comes with administrative, waiting, and opportunity costs. Making such costly price offers involves two intertwined decisions: in addition to deciding how much to offer, consumers must also decide whether to submit an offer at all. We examine the impact of offer-submission costs on consumer behavior using three incentive-compatible experiments. Our findings reveal a preference inconsistency, where the preferences implied by one of the decisions do not match the preferences implied by the other: potential buyers enter more often than standard preference models predict they should. The inconsistency is robust to interventions designed to help consumers make their decisions: (1) the provision of interactive-feedback decision aids and (2) the sequencing of the two sub-decisions in the normative order. Our interventions have large effects on behavior and together suggest that consumers approach the two decisions *as if* they were unrelated, rather than following the normative backward solution process assumed by most existing models. We discuss the implications of our findings for the design of offer-submission interfaces, as well as for attempts to infer consumer preferences from offer and bidding data.

Friday, 8:30AM

FA19

Sandringham - Level 2
Pricing: General
Contributed Sessions

3 Rollover Under Subscription Programs

Jin Miao, Haokun Du, The University of Texas at Dallas, Richardson, TX, Contact: hxd180022@utdallas.edu

When a firm offers subscription plans with finite quota (e.g., pay $5.49/month to print at most 100 pages/month), marketing managers need to decide whether to allow consumers to rollover unused amount to the next period. We build a two-period stylized model to examine the impact of rollover policy on pricing, profits, and welfare. Contrary to intuition, we find that rollover could increase the company's profits but reduce consumer welfare. The reason behind this is that the company will charge a higher unit price under rollover policy to counter consumers' strategic stocking behavior. The result can be shown with homogeneous consumers. However, rollover may increase social welfare and efficiency by enabling strategic consumers to reallocate subscription quotas over time. We also illustrate how rollover policy, combined with subscription plans, could serve as a price discrimination tool for different consumer segments.

Friday, 8:30AM

FA19

Sandringham - Level 2
Pricing: General
Contributed Sessions

4 Loot Box Design and Implications for Profits and Welfare

Jin Miao, Sanjay Jain, The University of Texas at Dallas, Richardson, TX, Contact: jin.miao@utdallas.edu

A loot box is a probabilistic allocation of virtual products, the exact outcome of whichis known to consumers only after purchase. Consumers sometimes purchase these goodsmultiple times until their preferred products are obtained. While loot boxes have beengaining enormous popularity in recent years, they are often criticized as exploitative andsocially wasteful. In this study, we develop a stylized model to study the optimal designof loot boxes and its impact on profits and social welfare. We find that firms may assignasymmetric probabilities to ex ante symmetric products. Loot boxes enable firms to earnhigher profits due to better price discrimination and market expansion. Contrary to thewidespread criticism of loot boxes as socially harmful, our analysis reveals that the lootbox strategy can improve consumer and social welfare. Firms could use loot boxes to offerproducts at low prices to users who would not buy these products under the traditionalpricing strategy. Then we examine two strategies that are seeming beneficial for consumers:1) some platforms promise that consumers can obtain their preferred products with nomore than a certain number of purchases; 2) some platforms offer a salvage system whereconsumers can resell unwanted products to the seller. Contrary to conventional wisdom, ouranalysis reveals that these two strategies can increase firm's profits while reducing consumerwelfare.

Friday, 8:30AM

FA19

Sandringham - Level 2
Pricing: General
Contributed Sessions

5 Role of De-Merger in Changing Price Sensitivity

Vinay Kanetkar, University of Guelph, Guelph, ON, Canada. Contact: vkanetka@uoguelph.ca

There is on-going debate whether mergers benefit firms (merged entity), shareholders, customers and society in general. Empirical evidence suggests that mergers benefit most to firms' upper management, consultants and lawyers at the cost of all other stakeholders. We seek to understand consequences when firm decides to de-merge or divorce and form two or more entities. e-bay and Paypal or HP split into HPE and HPQ are well-known examples of de-merger. We propose econometric model to understand price elasticity of brands before and after de-merger. We study 10 different de-mergers and generally note that after separation, some firms become more price sensitive than before.

Friday, 10:30AM

FB01

Trade Room- Lobby Level
ML: Bayesian Model & Causal Inference-Methodology
Contributed Sessions

Session Chair
Juncai Jiang, University of Central Florida, Orlando, FL

Friday, 10:30AM

FB01

Trade Room- Lobby Level
ML: Bayesian Model & Causal Inference-Methodology
Contributed Sessions

1 Innovation Inequality Induced by Investments in Key Opinion Leaders: Evidence from Pharmaceutical Industry and Causal Machine Learning

Jialu Ma, Xueming Luo, Temple University, Philadelphia, PA, Contact: jialuma@temple.edu

The critical role of Dr. Anthony Fauci in the development and diffusion of COVID-19 vaccines attests to the importance of key opinion leaders (KOL) in both marketing and innovation process. Although KOL as a marketing tool to gain social approval has been well-documented, whether KOL create opportunities or inertia for corporate innovation is poorly understood. This study uses causal forest to examine the heterogeneous effect of investing in KOL physicians on innovation output based on pharmaceutical companies' payment records from 2013-2018. We find KOL reinforce the innovation inequality between companies: Investing in KOL increases innovation output for companies with strong technological base, but it diminishes innovation output for companies with weak technological base. For all to be better-off, we find higher firm age can augment the innovation benefit of KOL investments for strong-tech-base companies, while lower social popularity of KOL measured by their influencer status on Twitter can mitigate the innovation cost of KOL investments for weak-tech-base firms. These findings provide implications not only for managers on how to customize KOL investment strategies for sustainable competitive advantage, but also for policymakers to understand KOL as a source of innovation inequality.

Friday, 10:30AM

FB01

Trade Room- Lobby Level
ML: Bayesian Model & Causal Inference-Methodology
Contributed Sessions

2 Deep Kernel Learning for Nonrandom Missingness in Credit Scores

Longxiu Tian, Tian Zhao, UNC Kenan-Flagler Business School, Chapel Hill, NC, Contact: longxiu@unc.edu

Credit scores play a vital role in reducing the risk of lending, insuring, and renting to consumers. Credit-based businesses and institutions typically rely on a portfolio of these scores, each informing a specific measure of creditworthiness, in support of decision processes such as vetting prospective customers and setting attractive risk premiums. Centrally problematic to the availability of credit scores is data missingness, which arises from incomplete or inadmissible credit file information, otherwise referred to as *thin files*. A quarter of U.S. consumers are impacted by thin files, manifesting as unscored gaps in the time-series of a consumer's score histories. These gaps reduce the scores' ability to aid in the targeting of profitable borrowers and identifying of cross-selling opportunities for financial products and services. This paper addresses a prevalent form of unscored gaps, whereby standard credit scoring models do not emit a valid score at the consumer-month level (i.e., the highest possible granularity). To address this problem, we develop a dynamic latent factor model based on Gaussian Process regressions (GPR) to impute credible intervals for gaps in individual score histories within a portfolio of dynamically and contemporaneously interrelated scores. To tackle missingness within the high-dimensional attribute feature spaces that led to unscoreable thin files, we augment GPR with Deep Kernel Learning that enables scalable and automatic discovery of missingness patterns, which are not presumed a priori to be random. We apply this model to novel data from a leading credit bureau on scores for a segment of the U.S. population, along with attributes derived from credit file used to generate the scores by the credit bureaus.

Friday, 10:30AM

FB01

Trade Room- Lobby Level
ML: Bayesian Model & Causal Inference-Methodology
Contributed Sessions

3 Estimating Effects of Long-Term Treatments

Shan Huang[1], Chen Wang[2], Yuan Yuan[3], Jinglong Zhao[4], Penglei Zhao[5], [1]University of Hong Kong, Hong Kong, Hong Kong; [2]The University of Hong Kong, Hong Kong, Hong Kong; [3]Purdue University, West Lafayette, IN, [4]Boston University, Boston, MA, [5]Tencent, Shenzhen, China. Contact: yuanyuan@purdue.edu

One lingering challenge of randomized controlled trials (or A/B tests) is to estimate the effects of long-term treatments at an early stage of the experiment. Learning such effects is crucial for management, as product updates (e.g., new UIs or algorithms) are intended to remain in the system for a long time once implemented but conducting long-duration experiments is costly. In this paper, we propose a longitudinal surrogate model to estimate the effects of long-term treatments using data collected from short-term experiments and historical observations. We show that under standard assumptions, the effect of long-term treatments can be decomposed into a sequence of functions that depend on the user attributes, their short-term intermediate metrics, and the treatment assignments. We describe three sets of identification assumptions that each leads to one estimation strategy, and discuss the advantages and limitations of each estimation strategy. We conduct two large-scale long-term experiments on WeChat, an instant messaging platform, and demonstrate the effectiveness of our methods. For practitioners, using our methods could significantly reduce the amount of time required to conduct experiments.

Friday, 10:30AM

FB01

Trade Room- Lobby Level

ML: Bayesian Model & Causal Inference-Methodology

Contributed Sessions

4 Monetizing Digital Demand Shocks: A Case Study of Airbnb

Connor Campbell, The Wharton School, University of Pennsylvania, Philadelphia, PA, Contact: campcon@wharton.upenn.edu

In recent years, digital platforms have become a cornerstone of the global economy with many of the most influential commercial organizations in the world now operating primarily online. Despite their growing presence, we have only limited understanding of how to monetize the services these platforms provide. I develop a structural economic model of the market for short-term accommodations on Airbnb based on a Bayesian Neural Network in order to investigate the revenue enhancing effects of alternative service fees charged by Airbnb to active hosts. Using the South by Southwest music and movie festival in Austin as a case study demand shock I find that Airbnb could have earned over 10% additional total revenue in the city over the period 2015-2019 if they allowed the service fees charged to hosts to rise during periods of peak activity on the platform.

Friday, 10:30AM

FB01

Trade Room- Lobby Level

ML: Bayesian Model & Causal Inference-Methodology

Contributed Sessions

5 A Dynamic Bayesian Model for Causal Inference with Mediation

Ho Kim[1], Juncai Jiang[2], Norris Ignatiius Bruce[3], [1]University of Missouri - St. Louis, St. Louis, MO, [2]University of Central Florida, Orlando, FL, [3]UNC, Chapel Hill, NC, Contact: jcjiang@ucf.edu

Many marketing research projects aim not only to estimate the causal effect of an intervention but also to understand the mechanism by which the intervention affects outcomes. However, existing causal inference methods, such as difference-in-differences and synthetic control, do not include mediation analysis, nor do existing mediation analysis methods address unobserved confounders. The authors therefore propose an integrative, scalable framework for performing mediation analysis while estimating causal treatment effects with panel data. The proposed method decomposes the causal effect of an intervention into indirect effects, transmitted through the model's mediators, and a direct effect, not transmitted through the mediators. Simulation studies confirm that the proposed method correctly identifies the direct, indirect, and total treatment effects and outperforms existing causal inference methods in inferential quality. Two real-world applications yield further insights. For Washington state's 2010 soda tax, despite a persistent, negative indirect effect on sales through inflated prices, the tax's total effect is transient, due to a direct effect that was initially negative but became positive later on, offsetting the price effect. In the case of U.S. newspaper paywall adoption, paywalls decreased newspaper circulation through increased print prices, but a direct spillover effect dominated the indirect price effect. Moreover, newspaper size positively moderated the spillover effect, such that only large newspapers enjoyed the positive spillover effect and therefore larger circulation.

Friday, 10:30AM

FB02

Flagler - Lobby Level

Social Media: Social Media Monitoring I

Contributed Sessions

Session Chair

Begum Sener, Koc University, Istanbul, Turkey.

Friday, 10:30AM

FB02

Flagler - Lobby Level
Social Media: Social Media Monitoring I
Contributed Sessions

1 Emotion- Versus Reasoning-Based Drivers of Misinformation Sharing: A Field Experiment Using Text Message Courses in Kenya

Susan Athey[1], Matias Cersosimo[1], Kristine Koutout[1], Zelin Li[2], [1]Stanford University, Stanford, CA, [2]Massachusetts Institute of Technology, Cambridge, MA

Two leading hypotheses for why individuals unintentionally share misinformation are that 1) they are unable to recognize that a post contains misinformation, and 2) they make impulsive, emotional sharing decisions without thinking about whether a post contains misinformation. Much of the literature on interventions to counter misinformation focuses on the first hypothesis and tests interventions that educate social media users about reasoning-based techniques employed in social media posts to mislead them; however, other work shows that emotions are important for the spread of and belief in misinformation, supporting a focus on the second hypothesis and emotion-based techniques. To learn whether interventions to counter reasoning- or emotion-based techniques are more effective, or whether the approaches are complementary, we evaluate three distinct versions of a five-day, low-cost, and scalable text message educational course in a field experiment with approximately 9,000 participants in Kenya. We assess the impact of the courses through a pre-post survey design eliciting intentions to share, finding that all treatment courses work, decreasing misinformation sharing 28% on average relative to no text message course. Treating the emotional drivers of misinformation sharing in the "Emotions" course is more effective than teaching about reasoning-based techniques either alone in the "Reasoning" course or in combination with emotion-based techniques in the "Combo" course. Moreover, the Emotions course performs best on misinformation posts that use emotion-based techniques, and does no worse than the Reasoning or Combo courses on misinformation posts that use reasoning-based techniques. In a follow-up experiment approximately two months later, 88% of the treatment effect of the three courses on misinformation sharing persists.

Friday, 10:30AM

FB02

Flagler - Lobby Level
Social Media: Social Media Monitoring I
Contributed Sessions

2 Influencer Marketing: Content Attributes and Consumer Engagement

Mimansa Bairathi, Anja Lambrecht, London Business School, London, United Kingdom. Contact: mbairathi@london.edu

The recent growth of influencer marketing means brands are more likely to contract with influencers to produce sponsored content. However, there is little empirical evidence regarding how consumers perceive such sponsored content relative to organic content. In this paper, we examine whether consumers engage less with sponsored content relative to organic content and what characterizes successful influencer content. We measure engagement as the number of likes. To examine these questions, we collect a dataset of more than 180,000 posts created by 510 Instagram influencers operating in United States. We distinguish between sponsored and organic posts using both advertising disclosure in posts and supervised learning. To account for endogeneity in advertising strategies, we leverage the timing of regulatory actions by the FTC and category-specific advertising trends as instrumental variables. We find that consumers engage less with sponsored content relative to organic content. To examine what attenuates the negative effect of an influencer's post being sponsored on likes, we rely on the insight that consumers prefer authenticity in marketing and propose that authenticity of content attenuates the negative effect of advertising on likes. We measure authenticity as the congruence of a post with other content shared by the influencer, the influencer's propensity to share brand-related content, the number of times a brand is mentioned in the post, and advertising disclosure. Our results demonstrate that authenticity of content attenuates the negative effect of advertising on likes. In view of regulatory interest and advertising disclosure out results demonstrate that consumers indeed respond differently to sponsored posts relative to organic posts. Our findings can inform influencers and advertisers on their content creation strategies and suggest that advertisers should provide influencers independence in creating sponsored content so as to maintain authenticity.

Friday, 10:30AM

FB02

Flagler - Lobby Level

Social Media: Social Media Monitoring I

Contributed Sessions

3 Bad is More Universal than Good: Evidence from Social Media

Begum Sener, Bruce Doré, McGill University, Montreal, QC, Canada. Contact: begum.senersengul@mcgill.ca

Prior research argues that negative emotion is more impactful than positive emotion - here we ask whether negative emotion is also more universal in terms of the content that drives it, whereas positive affect derives from more brand-specific patterns of content. We sought to identify patterns of content that predict digital expressions of negative and positive emotions (i.e., haha, love, sad, and angry 'reactions' on a social media platform), examining these patterns to deepen theoretical understanding of how content relates to emotion expression. We apply text analytic methods to two sets of social media data; (i) over one million posts from influential individuals and (ii) over 340,000 posts from news media brands. We use regression models to estimate relationships between content-based predictor variables (i.e., word embeddings) and emotional reactions. Our analyses reveal that negative emotional reactions can be adequately predicted from a single model ignoring heterogeneity between different brands, whereas positive emotional reactions instead are related to idiosyncratic, brand-specific patterns of linguistic content. Overall, this work sheds new light on the content-based antecedents of emotion, with implications for marketers looking to influence those emotions in consumers.

Friday, 10:30AM

FB03

Dupont - Lobby Level

Methods:Bayesian Econometrics

Contributed Sessions

Session Chair

Nicolas Padilla, London Business School, London, United Kingdom.

Friday, 10:30AM

FB03

Dupont - Lobby Level

Methods:Bayesian Econometrics

Contributed Sessions

1 Understanding the Dynamics of Appeals Scales to Infer Individual Potential to Donate with Bayesian Nonparametrics

Samuel Isaac Levy, Tong Lu, Alan Montgomery, Carnegie Mellon University, Pittsburgh, PA, Contact: silevy@andrew.cmu.edu

Charity organizations often use direct solicitations with suggested amounts, i.e. "appeals scales", to influence gift giving behavior. Large asks may challenge donors to consider amounts greater than they would have, but neither too large or too low. Different segments of donors are assumed to be in a pipeline, and marketers' goal is to forward advancement from smaller gifts to larger gifts over time. Appeals scales have been shown to have an immediate impact on donation, but little is known on the dynamic effect of appeal scales on charitable giving. Using transaction and marketing data from a major U.S. university, we investigate how different suggested amounts, the number of direct solicitations and their timing influence willingness to donate over time. In particular, we show that the suggested amounts influence individual distributions for willingness to donate, that we estimate with Bayesian nonparametrics using probit stick breaking processes. To overcome the issue of endogeneity, we propose a series of randomized controlled trials. Then, we derive an optimal rule for suggested amounts, number of direct solicitations and timing to maximize revenues from donation.

Friday, 10:30AM

FB03

Dupont - Lobby Level

Methods:Bayesian Econometrics

Contributed Sessions

2 Dual-Network Aggregation Problems in Marketing

Mingyung Kim, Eric T. Bradlow, Raghuram Iyengar, University of Pennsylvania, Philadelphia, PA, Contact: mingyung@wharton.upenn.edu

We demonstrate that many marketing problems, that are seemingly unrelated, can be all viewed as problems of (a) data aggregation (i.e., choosing data granularity for analysis) and (b) parameter aggregation (i.e., choosing the level of parameter heterogeneity specified in a model). Examples of aggregation problems in marketing, that we address, include: (1) *SKU aggregation* (If a firm models consumer choice among SKUs, how should they aggregate SKUs to accurately understand consumer choice? For instance, should a firm treat SKUs with different colors or sizes as different products or the same product?) and (2) *Heterogeneity in marketing actions* (How can a firm choose the level of heterogeneity in their marketing actions - e.g., personalized vs. segment-level vs. uniform pricing - that yields higher profitability?) To handle many marketing problems (including those above) via data and parameter aggregation, we propose a *dual-network aggregation* method as an integrative solution. The proposed method, as its name suggests, represents data and parameters as dual (data and parameter) networks with each unit (e.g., person, SKU, store) being a node, and then clusters the dual networks and aggregates the data and parameters based on the clusterings. Thus, it facilitates data and parameter aggregation and so readily addresses many related marketing problems. Finally, we demonstrate that our method can address many marketing problems by applying it to various empirical settings.

Friday, 10:30AM

FB03

Dupont - Lobby Level
Methods:Bayesian Econometrics
Contributed Sessions

3 A Bayesian Nonparametric Approach for Modeling Sequential Search Data

Kohei Onzo, Asim Ansari, Columbia University, New York, NY

Sequential search models have become increasingly popular in marketing to study consumer search behavior. In such models, capturing consumer heterogeneity is crucial in understanding how consumers differ in their willingness to search for products and their tastes for various product characteristics. Current practice often uses restrictive parametric heterogeneity specifications such as normal distributions that assume independence among different response sensitivities. This is inadequate in situations where some consumers have low search cost and others have high search cost, resulting in a multimodal distribution. Restrictive assumptions can result in incorrect inference about important managerially and economically relevant quantities such as the dollar value of search costs and consumer surplus. We develop a Bayesian nonparametric framework based on Dirichlet process priors to flexibly account for heterogeneity among consumers in their tendency to search for products and their tastes for different product attributes. Our proposed methodology accurately recovers true parameters and economically relevant quantities. In contrast, results from Monte Carlo simulation show that inflexible parametric assumptions on heterogeneity can result in biased estimates of model parameters and consumers' monetary value of search cost, consumer surplus, and price elasticities. We apply our methodology to real data and conduct a novel counterfactual analysis in which consumers do not incur search costs. This allows us to quantify how search frictions reduce consumer surplus.

Friday, 10:30AM

FB03

Dupont - Lobby Level
Methods:Bayesian Econometrics
Contributed Sessions

4 Unified Marketing Measurement Under Privacy Regulations

Ryan Dew[1], Nicolas Padilla[2], [1]University of Pennsylvania, Philadelphia, PA, [2]London Business School, London, United Kingdom. Contact: npadilla@london.edu

In the face of increasingly strict privacy laws, digital marketers face unprecedented challenges in measuring the effectiveness of campaigns, particularly at the customer and campaign levels. These new restrictions on customer-level trackability have broken commonplace multi-touch attribution models (MTA), which have become the primary tool by which companies measure effectiveness at the most granular level. While this new environment has made drill-down measurement difficult, it has had a limited impact on the ability of marketers to use classic measurement tools like media mix models (MMM), which have always been built on aggregate measures of campaign spend and performance. Moreover, although scarcely available, marketing effectiveness experiments can provide unbiased measures of the effectiveness of campaigns. In this work, we propose a *unified marketing measurement* (UMM) framework rooted in the idea that media mix models, attribution models and experiments all measure the same estimand: marketing effectiveness. Methodologically, we use a Bayesian framework to jointly model customer-level attribution, aggregate media mix effectiveness, and marketing effectiveness experiments through interrelated components, which are constrained to yield the same insights about campaign effectiveness. This theory-based constraint allows us to identify components of the individual-level model that would be otherwise difficult. We apply our model using a dataset from a large retailer that includes wide-ranging data about customer activity and campaign performance, including A/B tests, which allow us to validate the model's performance.

Friday, 10:30AM

FB04

Tuttle - Lobby Level
Advertising: Visual Analytics and Digital Advertising
Contributed Sessions

Session Chair
Jingyun Hu, Clemson University, Pendleton, SC

Friday, 10:30AM

FB04

Tuttle - Lobby Level
Advertising: Visual Analytics and Digital Advertising
Contributed Sessions

1 Valuable Visual Variety

Keno Tetzlaff[1], Jochen Hartmann[2], [1]University of Hamburg, Hamburg, Germany; [2]Technical University of Munich, Munich, Germany.

Video advertisements compete for attention in an increasingly busy media environment. Platforms such as TikTok and YouTube thrive on short video content that provides a continuous stream of stimulation and variety to consumers. Under these conditions, advertisers must manage visual variety within their advertisements to ensure engagement while avoiding overstimulation. This requires operational measures of visual variety and insights into optimal amounts of visual variety. We leverage state-of-the-art deep learning methods to develop an embedding-based measure of visual variety. By comparing the average image embeddings of neighboring scenes, we understand how strongly scenes differ from each other. The measure can be efficiently computed for any number of videos and inspected during video production to ensure advertisements reach desired objectives.
We compute visual variety for a total of more than 6,400 video advertisements featured on Facebook, TikTok, YouTube, or TV. We investigate the impact of visual variety on engagement (e.g., sharing) of videos as well as purchase intentions. On average, visual variety of advertisements is similar across platforms, with YouTube advertisements as the maximum that features 27% more visual variety than the average TikTok advertisement (minimum). When relating visual variety to consumer responses, we find similar inverted U-shaped patterns across platforms and dependent variables, suggesting brands can find optimum levels of visual variety within the range of the advertisements they compete with. Interestingly, the optimal amount of visual variety is similar across platforms and dependent variables. We investigate what drives optimal visual variety and conclude with recommendations on how to design effective video advertisements.

Friday, 10:30AM

FB04

Tuttle - Lobby Level
Advertising: Visual Analytics and Digital Advertising
Contributed Sessions

2 Patterns and Dynamics of Emotions in Tv Advertising Across Brands and Categories

Nima Y. Jalali[1], Purushottam Papatla[2], Pradeep Chintagunta[3], Ali Jamei[4], Mahsa Hosseinabadi[4], Milad Hour[2], [1]University of North Carolina Charlotte, Charlotte, NC, [2]University of Wisconsin-Milwaukee, Milwaukee, WI, [3]University of Chicago, Chicago, IL, [4]University of Wisconsin Milwaukee, Milwaukee, WI, Contact: nima.jalali@uncc.edu

Despite extensive research into the role of emotions used in advertising and its effectiveness, there are few studies that investigate the patterns and dynamics if any in the emotions used in different product categories and different brands within categories. This is a significant gap because an understanding of the emotions stimulated by the ad campaigns of market leaders (laggards) in different categories can provide insights into emotions that are beneficial (counter-productive) in specific categories. Further, an analysis of the dynamics of emotions used in ad campaigns can also provide additional insights. For instance, how leaders (laggards) in different categories vary the emotions around which they build their campaigns over time and how frequently they do so can be useful. Such an analysis can provide an understanding of how often emotions in campaigns should be changed by brands. Our research addresses the gap in the literature by investigating both the patterns and dynamics of emotions in more than 10,000 advertising campaigns by more than 400 brands in more than 30 product categories. Data on the emotional content of the campaigns is provided by a firm that uses NLP methods on responses by a campaign-specific sample of 500 randomly drawn, but representative, group of individuals to a survey. We develop and discuss generalized findings into (a) emotions used and (b) the dynamics in the use of emotions, by market leaders in different categories.

Friday, 10:30AM

FB04

Tuttle - Lobby Level

Advertising: Visual Analytics and Digital Advertising

Contributed Sessions

3 Persuasion in Advertisements over Time

Leonie Gehrmann, Stefan Kluge, Florian Stahl, University of Mannheim, Mannheim, Germany.

In its original essence, advertising might just be the provision of factual information on product attributes. Instead, an alternative view sees advertising as persuasion, altering consumer tastes, increasing perceived product differentiation and consumer loyalty, and enhancing willingness to pay. Research defines three different modes of persuasion that should be combined and balanced to create consumer appeal. First, ethos refers to credibility, convincing consumers that the advertising brand is trustworthy, reliable, and superior. Second, pathos considers consumer feelings and emotions, attempting to elicit them to create a connection with the viewers. Finally, logos incorporates logic and reason, using facts and data to appeal to consumer minds. Existing work has considered topics such as the use of emotions dependent on product category or the combative nature of advertising. Different streams focusing on the varying views of advertising have developed. However, little research has analyzed the combined use of credibility, emotions, and information in firms' advertising. This study empirically explores how advertisers have varied in their use of information and persuasion in print ads over the past century. The data set consists of all issues of "The Economist" in the time period 1900 - 2014. We analyze both textual and visual cues provided in the ads to understand how the methods of appealing to consumers have changed over time. From a managerial perspective, our study predicts to what extent the relative use of credibility, emotion and information is related to general societal trends.

Friday, 10:30AM

FB04

Tuttle - Lobby Level

Advertising: Visual Analytics and Digital Advertising

Contributed Sessions

4 Emotion Detection and Congruence in Online Video Content

Julian R. K. Wichmann, University of Cologne, Cologne, Germany. Contact: wichmann@wiso.uni-koeln.de

Marketers have long recognized the benefits of matching an advertisement to its surrounding content. Such content-advertisement congruence has been shown to increase advertising effectiveness and reduce consumers' reactance towards ads. While congruence has been extensively analyzed in terms of context (e.g., an ad for soccer shoes on a sports news site), emotion congruence (e.g., a sad ad following a sad video) has received only scarce attention. Especially video content has a strong ability to influence consumers' emotions. At the same time, the prevalence of video content has grown considerably over the past years as consumers spend more and more time online. Consequently, today's online video ads receive as many marketing dollars as TV ads. However, to implement emotion congruence, advertisers would need to know which emotion the content surrounding their ad elicits. This may be realistic in the static, prebooked TV setting but not in the highly dynamic field of programmatic online advertising. As such, this paper makes two major contributions to the field: *First*, it shows how emotion (in-) congruence in video advertising affects ad effectiveness. *Second*, it presents a method to automatically infer the emotionality of video content by extracting a range of audiovisual data points and combining different machine learning tools for text, image, and audio analysis.

Friday, 10:30AM

FB04

Tuttle - Lobby Level

Advertising: Visual Analytics and Digital Advertising
Contributed Sessions

5 Exclusive Marketing Contract in Livestream

Jingyun Hu, Clemson University, Clemson, SC, Contact: jhu3@clemson.edu

More and more Chinese consumers are accustomed to livestream shopping. Douyin, the Chinese version of Tiktok, has emerged as a rapidly growing social media platform in China. Influencers play a critical role within the Douyin ecosystem by leveraging their streams to enhance product visibility. Brands, cognizant of the advantages of this approach, frequently engage influencer services as a means of promoting and selling their products. Exclusive Contracts, a type of marketing agreement, signify a joint agreement between a brand and an influencer. Previous research on Exclusive Contracts has primarily originated from an economic perspective, with limited focus on the marketing agreement between brands and influencers. Empirical studies on livestream sales have not extensively examined the analysis of marketing agreements between brands and influencers, primarily due to the scarcity of available data. The data set utilized in this study is unique, consisting of livestreams from 411 influencers who have a minimum following of 10 million followers. This data allows us to observe and analyze the cooperation between brands and influencers in each individual livestream. The focus of this study lies in the division of various markets based on product categories, with the objective of examining the variations in marketing agreements across different markets. Under varying market concentration and brand size conditions, exclusive contracts may not lead to market expansion for small brands, and may not foster consumer loyalty to the brand for certain types of influencers.

Friday, 10:30AM

FB05

Gusman - Lobby Level
Marketing and Consumer Welfare II
Special Session

Session Chair
Michael Patrick Palazzolo, University of California - Davis, Davis, CA

Friday, 10:30AM

FB05

Gusman - Lobby Level
Marketing and Consumer Welfare II
Special Session

1 Price Variation and Store Choice: The Welfare Implications of Edlp-Hilo Pricing

Kristina Brecko, Avery Haviv, Paul Ellickson, University of Rochester, Rochester, NY, Contact: kristina.brecko@simon.rochester.edu

This paper investigates the distributional effects and implications on firm profits of two common store pricing strategies: everyday low price (EDLP) and high average prices with deep discounts (HiLo). Low-income households may choose to shop at stores where prices are consistent over time, even when average price levels are the same. High variation in prices dissuades low-income households because they cannot stockpile and take advantage of low prices, while higher prices may force the household to leave some needs unmet. This leads to low-income households preferring everyday low price (EDLP) stores to those that occasionally provide deeper discounts (HiLo). On the consumer side, we consider the effect of store pricing strategies on both effective prices paid and healthfulness of the product assortment (and, thus, purchase basket), both of which are determinants of different dimensions of consumer welfare. We find that lower income households are more likely to shop at EDLP stores, even when holding average prices fixed. Given this shopping pattern, lower income consumers may miss out on savings generated by the occasionally lower effective prices at HiLo stores. Moreover, preliminary results show that the product assortment at EDLP stores is less healthful than in HiLo stores, suggesting the correlation between firm's pricing strategies and assortment healthfulness as one potential source of nutritional inequality widely documented in the literature. Finally, we consider the implications of this sorting on the store's ability to price discriminate and explore alternative pricing policies that may improve both firm profits and consumer welfare. Our paper contributes to the rich literatures on store pricing strategies and consumer store choice as well as literature on the causes of nutritional inequality.

Friday, 10:30AM

FB05

Gusman - Lobby Level
Marketing and Consumer Welfare II

Special Session

2 Grocery Store Closures and Household Nutritional Choices

Sylvia Hristakeva[1], Julia Levine[2], [1]UCLA Anderson School of Managment, Los Angeles, CA, [2]UCLA Anderson School of Management, Los Angeles, CA, Contact: levinejulia@ucla.edu

We analyze the impact of a temporary shock to food supply on households' dietary choices. We use hurricane-induced closures of grocery stores, which are typically short term. Results show that store closures influence household purchasing patterns even after the grocery store has reopened. We find a decrease in the nutritional value of household purchases for the five-month period after the store has reopened, despite no change in total expenditures. This finding supports the hypothesis that supply factors play a substantial role in shaping household diets.

Friday, 10:30AM

FB05

Gusman - Lobby Level

Marketing and Consumer Welfare II

Special Session

3 Banning Unsolicited Store Flyers: Does Helping the Environment Hurt Retailing?

Jonne Guyt[1], Arjen van Lin[2], Kristopher Keller[3], [1]Amsterdam Business School, Amsterdam, Netherlands; [2]Tilburg University, Tilburg, Netherlands; [3]Kenan-Flagler Business School, Chapel Hill, NC, Contact: kristopher_keller@kenan-flagler.unc.edu

Retailers often use store flyers, to communicate the availability, price, and promotions of their products. Many shoppers inspect store flyers for promotions, and the majority still prefer to receive store flyers in print. Yet, many households are said to throw out store flyers unread, creating excessive waste that is environmentally damaging due to the excess use of paper, ink, and logistics. Legislation to reduce the waste associated with unsolicited store flyers has been proposed, but if and how much such a cut in distribution would affect households' grocery shopping behavior remains unclear. This paper investigates a recent policy change by seven Dutch municipalities that implemented a ban on unsolicited store flyers by moving from an opt-out to an opt-in policy at some point between 2018 and 2020. Using household scanner data, the authors assess changes in shopping behavior along seven comprehensive dimensions relevant to retailers and manufacturers, using a stacked, synthetic difference-in-differences approach. Although store flyer distribution decreased by 50% under the new policy, the drastic change did not affect grocery shopping behavior, including total spending or purchases made on promotion. These findings are robust to different time windows and modeling approaches, and are estimated with tight confidence bounds. Additional unique survey data corroborate the notion that shifting to digital store flyer usage is an unlikely driver of these null effects. We do not find evidence that retailers adjusted their marketing communication in treated municipalities in response to a ban. The subgroup of consumers who were directly affected by the change in store flyer distribution, we find no evidence of a change in grocery shopping behavior either. Thus, consumers who actively use store flyers continue to use them, and those who did not use them but received them anyway are not harmed by the policy. Such results suggest a win-win-win scenario for retailers, consumers, and the environment.

Friday, 10:30AM

FB06

Marti - Lobby Level

UGC: Digital Economy

Contributed Sessions

Session Chair

Piyush Anand, Rice University, Houston, TX

Friday, 10:30AM

FB06

Marti - Lobby Level

UGC: Digital Economy

Contributed Sessions

1 Winner Takes All: Antecedents and Consequences of Consumer Engagement Concentration in Serialized Digital Goods Markets

Hanyang Wang[1], Amy Wenxuan Ding[2], Shibo Li[3], [1]Indiana University Kelley School of Business, Bloomington, IN, [2]EMLYON Business School, Lyon, France; [3]Indiana University Bloomington, Bloomington, IN, Contact: hw70@iu.edu

In serialized digital goods markets (e.g., web novel, online courses, podcast) with digital serialization, it is common to observe winner-takes-all in consumer engagement and purchase. However, marketing practitioners are struggling with the pricing and product strategies in such markets, which is under-studied in the marketing literature. To fill the gap, this research examines antecedents and consequences of the winner-takes-all in consumer engagement for serialized digital products. A theoretical model is proposed and shows that the antecedents include serialized freemium pricing, product update speed, and producer status. The winner-takes-all in pre/during consumer engagement are due to two mechanisms - the complementarity between serialized sections and the Matthew effect of producer status. Consequently, the presence of a few winners or blockbuster products crowds out post-consumption engagement of other products over time. Using data from a leading web novel platform in the U.S., we develop a simultaneous equations model and empirically tests and finds support for the hypotheses. This paper provides a framework for analyzing consumer engagement inequality in serialized digital goods markets and offers important managerial implications for digital platforms and content creators.

Friday, 10:30AM

FB06

Marti - Lobby Level
UGC: Digital Economy
Contributed Sessions

2 More than a Deal: The Role of Posting Intentions on Social Deal Platforms

Jens W. Paschmann, University of Cologne, Cologne, Germany. Contact: jens.paschmann@wiso.uni-koeln.de

Social deal platforms benefit customers by offering rich cues to identify valuable e-commerce offerings. However, from a retailer's perspective, social deal platforms are a double-edged sword. On the one hand, social deal platforms can boost purchases of intended deals (e.g., to excess stock) which are posted by the editorial team of the commissioned deal platform provider (i.e., commissioned deals). On the other hand, social deal platforms can boost purchases of unintended deals (e.g., caused by pricing errors) and posted by customers with subversive intentions (i.e., subversive deals), which can lead to revenue losses. The author combines panel data of 1,370 deals posted on a social deal platform with 48,111 user-generated comments to empirically show how these two types of deals drive the value chain for customers, retailers, and platform providers. The results show that social deal platforms benefit value creation for retailers and platform providers through increased purchases among commissioned deals, but harm value creation for retailers through increased purchases among subversive deals.

Friday, 10:30AM

FB06

Marti - Lobby Level
UGC: Digital Economy
Contributed Sessions

3 Personalization Strategy in Social Media: A Triangular View

Mengzhou Zhuang[1], Eric Fang[2], Beibei Dong[3], Chuoyan Dong[4], [1]University of Hong Kong, Hong Kong, China; [2]Lehigh University, Bethlehem, PA, [3]Lehigh University, Bethlehem, PA, [4]UNSW, Sydney, Australia.

Advances in technology have led to the widespread use of personalization in marketing. Name personalization, including the recipient's name in marketing messages, raises concerns over the collection and use of consumer data. The growing popularity of social commerce has heightened these concerns. To address the negative impact of name personalization on purchases, our research proposes data utilization benevolence as the mediating mechanism, and looks into using a triadic personalization strategy, which includes sender personalization (disclosing the name of the individual employee), content personalization (personalizing the message content), and name personalization, to mitigate the negative impact of name personalization on purchase. Empirically, two large-scale field experiments were conducted on WeChat, followed by two lab experiments. The first field experiment found that name personalization decreased coupon redemption, that sender personalization mitigated this negative effect, and that the moderation effect of sender personalization is more pronounced for new customers than for repeat customers. The second field experience replicated the findings of the first experiment and additionally discovered that content personalization could also effectively mitigate the negative impact of name personalization on new product adoption rate, and the moderation effect of content personalization is stronger for repeat customers. The lab studies further confirmed the mediating role of data utilization benevolence. Our research addresses the personalization-privacy dilemma by identifying the mediating mechanism and exploring two mitigation strategies; it expands on previous research by examining personalization strategies in social media. Managerially, it highlights the importance of considering the interplay of the three types of personalization and customer relationship stage when crafting an optimal personalization strategy.

Friday, 10:30AM

FB06

Marti - Lobby Level
UGC: Digital Economy
Contributed Sessions

4 Making Online Consumer Activism More Equitable: A Text-Based Intervention Approach

Piyush Anand[1], Yanqing Gui[2], Vrinda Kadiyali[2], [1]Rice University, Houston, TX, [2]Cornell University, Ithaca, NY

While online consumer activism is on the rise, it is unclear if various demographic segments are equally effective in these movements. Using a dataset of 17,117 business-oriented petitions from an online petition platform, Change.org, we find racial and gender gaps in petition performance (signatures), and that petition topics differ by these demographics. It is both undesirable and difficult to change the current topic-demographics matches since demographic segments may have unique interests and knowledge. Therefore, we build a Transformer-based language model to improve petition performance, without changing the petition topic (that might be demographic-specific). That is, the model discovers persuasive words that are predictive of petition performance and are decorrelated with petition topics. We apply this persuasion treatment to currently less effective demographic groups. We quantify the resulting improvement in performance via a gap-closing estimator (Lundberg, 2022) for various demography-based policies. We find that 67% of the racial gap in petition performance can be closed if the platform offers the proposed persuasion treatment to Black and Hispanic petitioners. We are also able to close 11% of the gender gap. Our findings will be of interest to consumer activists, companies that are targeted by petitions, and consumer activism platforms.

Friday, 10:30AM

FB07

Merrick 1 - Lobby Level
Influencer Marketing Track: Special Session 6
Special Session

Session Co-Chair
Maximilian Beichert, Mannheim, Germany.

Friday, 10:30AM

FB07

Merrick 1 - Lobby Level
Influencer Marketing Track: Special Session 6
Special Session

Session Chair
Andreas Lanz, HEC Paris, Paris, France.

Friday, 10:30AM

FB07

Merrick 1 - Lobby Level
Influencer Marketing Track: Special Session 6
Special Session

1 Autoregressive Difference-In-Differences

Anna Shchetkina, Ron Berman, The Wharton School, Philadelphia, PA, Contact: annashch@wharton.upenn.edu

Evaluating the effects of influencer marketing campaigns is not a straightforward task. Difference-in-differences and related methods, such as synthetic control or synthetic difference-in-differences, are promising tools to aid such estimation. These methods are versatile, interpretable, and are widely applied in a variety of marketing contexts. However, there is a caveat in applying the difference-in-differences-based methods within the context of influencer marketing campaigns, since the data may potentially be autocorrelated. We show that when these methods are applied to autocorrelated data, the resulting estimates are biased if the history of observations is limited. We show that when there are enough periods of observation before the campaign but not after, the estimates are shrunk toward zero. In other cases, the bias can have any direction, in particular, the chance of a Type I error may be inflated. We develop the autoregressive difference-in-differences (AR DiD), a method that takes into account the autocorrelation in the data and at the same time utilizes the information from units unaffected by a campaign. We demonstrate that the correction of the bias is greatest for larger effect sizes, which occur when the data is strongly autocorrelated. We apply the AR DiD to estimate the effect of a sponsorship deal on visits to a website and find that the proposed method eliminates bias due to shrinkage to zero compared to standard methods, consistent with analytical results and simulations.

Friday, 10:30AM

FB07

Merrick 1 - Lobby Level
Influencer Marketing Track: Special Session 6
Special Session

2 How Does Ai-Generated Voice Affect Online Video Creation? Evidence from Tiktok

Xiaoke Zhang, Mi Zhou, Gene Moo Lee, University of British Columbia, Vancouver, BC, Canada. Contact: mi.zhou@sauder.ubc.ca

The rising demand for online video content has fostered one of the fastest-growing markets as evidenced by the popularity of platforms like TikTok. Because video content is often difficult to create, platforms have attempted to leverage recent advancements of artificial intelligence (AI) to help creators with their video creation process. However, surprisingly little is known about the effects of AI on content creators' productivity and creative patterns in this emerging market. Our paper investigates the adoption impact of AI-generated voice - a generative AI technology creating acoustic artifacts - on video creators by empirically analyzing a unique dataset of 4,021 creators and their 428,918 videos on TikTok. Utilizing multiple audio and video analytics algorithms, we detect the adoption of AI voice from the massive video data and generate rich measurements for each video to quantify its characteristics. We then estimate the effects of AI voice using a difference-in-differences model coupled with look-ahead propensity score matching. Our results suggest that the adoption of AI voice increases creators' video production and that it induces creators to produce shorter videos with more negative words. Interestingly, creators produce more novel videos with less self-disclosure when using AI voice. We also find that AI-voice videos received less viewer engagement unintendedly. Our paper provides the first empirical evidence of how generative AI reshapes video content creation on online platforms, which provides important implications for creators, platforms, and policymakers in the digital economy.

Friday, 10:30AM

FB07

Merrick 1 - Lobby Level
Influencer Marketing Track: Special Session 6
Special Session

3 Find the Perfect Fit: Leveraging Generative Ai to Optimize Visual Brand Presence in Synthetic Influencer Imagery

Julia Rosada[1], Maximilian Witte[1], Jochen Hartmann[2], Mark Heitmann[1], [1]University of Hamburg, Hamburg, Germany; [2]Technical University of Munich, Munich, Germany. Contact: julia.rosada@uni-hamburg.de

Influencer marketing has become a popular marketing strategy on social media. Among other things, through influencer collaborations, brands attempt to reach more specific target groups and enhance their marketing communication's authenticity. As most of this sponsored content is shared on visual platforms such as Instagram and TikTok, visual brand content that features both the influencer and the brand plays an important role. Typically, influencers create this brand imagery themselves based on instructions from brands. This creates a natural tension about the relative salience of the influencer and the brand on these images, as influencers seek to drive engagement, which may be undermined by excessively salient sponsored products, while firms seek to drive awareness and sales. To investigate this tension and explore the variation in the placement of the sponsored products, which can range from highly salient positioning in the image center to barely noticeable in the background, we collect more than 1,400 brand-related influencer images, originating from Instagram, covering 447 brands. Based on 14,200 user ratings, we indeed find substantial variation in the perceived brand and influencer presence, suggesting that finding the right brand balance in sponsored visual content is a nontrivial task. To remedy this issue, we propose a solution that leverages recent advances in generative artificial intelligence (AI). Specifically, we generate photo-realistic influencer images featuring an optimized level of brand presence without compromising the presence of the influencer based on a fine-tuned latent text-to-image diffusion model. Assessments of subjective brand and influencer perceptions suggest influencer images can be improved in significant and practically relevant ways with low-cost and time-efficient tools. We conclude by discussing the impact of generative AI for brand-influencer collaborations where trade-offs between different objectives need to be minimized.

Friday, 10:30AM

FB07

Merrick 1 - Lobby Level

Influencer Marketing Track: Special Session 6

Special Session

4 Influencer Selection Using Inverse Reinforcement Learning

Mengjie (Magie) Cheng[1], Maximilian Beichert[2], Xitong Li[3], Shunyuan Zhang[1], [1]Harvard Business School, Cambridge, MA, [2]University of Mannheim, Mannheim, Germany; [3]HEC Paris, Jouy-en-Josas, France. Contact: macheng@hbs.edu

Despite the exponential growth and promise of influencer marketing, selecting influencers for a campaign remains a major challenge for brands. Many industry practices rely on general guidelines for influencer selection, but often overlook the motivation misalignment between influencers and brands, where influencers value not only monetary rewards, but also non-monetary rewards such as social capital and personal satisfaction from creating content. This study addresses this issue by analyzing influencer motivation from the influencer perspective, uncovering both tangible and intangible rewards for accepting or rejecting brand sponsorship offers. We collected data on influencer marketing campaigns, collaboration decisions, and reputation changes for over 30,000 influencers working with a large e-commerce company between 2020 and 2022. Using an inverse reinforcement learning model, we were able to uncover the rewards that influence influencers' sponsorship decisions. Next, an exploratory analysis of the model-predicted reward function suggests that influencers' sponsorship decisions are strongly influenced by their recent reputation changes and by the cool-down periods between recent sponsored posts. We further contextualize our findings by conducting a series of Instagram campaign experiments with the e-commerce company. Our experiments demonstrate that incorporating influencers' sponsorship decision-making into the influencer selection process can greatly improve targeting effectiveness and campaign outcomes such as sales lift. The study provides valuable managerial implications for brands in planning influencer marketing campaigns.

Friday, 10:30AM

FB08

Merrick 2 - Lobby Level

Digitization 6: Privacy and Consumer Behavior

Special Session

Session Co-Chair

Ayelet Israeli, Harvard Business School, Boston, MA

Friday, 10:30AM

FB08

Merrick 2 - Lobby Level

Digitization 6: Privacy and Consumer Behavior

Special Session

Session Co-Chair

Pinar Yildirim, University of Pennsylvania, Philadelphia, PA

Friday, 10:30AM

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Merrick 2 - Lobby Level

Digitization 6: Privacy and Consumer Behavior

Special Session

Session Chair

Giorgos Zervas, Boston University School of Management, Brookline, MA

Friday, 10:30AM

FB08

Merrick 2 - Lobby Level

Digitization 6: Privacy and Consumer Behavior

Special Session

1 Digital Hermits

Avery Haviv[1], Jeanine Miklós-Thal[1], Avi Goldfarb[2], Catherine Tucker[3], [1]University of Rochester, Rochester, NY, [2]University of Toronto Joseph L Rotman School of Management, Toronto, ON, Canada; [3]MIT, Cambridge, MA

When a user shares multi-dimensional data about themselves with a firm, the firm learns about the correlations of different dimensions of user data. We incorporate this type of learning into a model of a data market in which a firm acquires data from users with privacy concerns. User data is multi-dimensional, and each user can share no data, only non-sensitive data, or their full data with the firm. As the firm collects more data and becomes better at drawing inferences

about a user's privacy-sensitive data from their non-sensitive data, the share of new users who share no data ("digital hermits") grows. At the same time, the share of new users who share their full data also grows. The model therefore predicts a polarization of users' data sharing choices away from non-sensitive data sharing to no sharing and full sharing.

Friday, 10:30AM

FB08

Merrick 2 - Lobby Level
Digitization 6: Privacy and Consumer Behavior
Special Session

2 Debiasing Treatment Effect Estimation for Privacy-Protected Data: A Model Audition and Calibration Approach

Tawei Huang, Eva Ascarza, Harvard Business School, Boston, MA

The growing concern for data privacy and recent regulatory changes have led organizations to adopt privacy-enhansing measures. In particular, differential privacy has emerged as a crucial tool for protecting sensitive customer information by adding noise to the data. This approach makes it challenging for outsiders to extract information about specific individuals in the dataset, while still enabling meaningful analysis. However, organizations are concerned that this method may impede their ability to tailor their interventions to specific individuals. This research examines the impact of differential privacy on an organization's ability to perform targeted interventions. We show that differential privacy can significantly decrease the prediction accuracy of current methods and even cause bias in the estimation of heterogeneous treatment effects (HTE), suggesting that implementing differential privacy may significantly hinder the effectiveness of the state-of-the-art targeting approach.
To address this problem, we develop a novel post-processing method that incorporates recent developments in multi-group algorithmic fairness and heterogeneous treatment effect learning. This bias correction technique involves dividing the experimental data into three groups, using one group for training an initial HTE model, another for calibrating the model based on subgroups of individuals with high prediction errors, and the third for determining when to stop the calibration process. Through simulation studies and real-world examples, we demonstrate that our proposed approach can significantly improve the predictive accuracy of existing CATE models and lead to more efficient targeting policies when the data is protected by differential privacy.

Friday, 10:30AM

FB08

Merrick 2 - Lobby Level
Digitization 6: Privacy and Consumer Behavior
Special Session

3 An Empricial Analysis of Optimal Sequential Screening

Soheil Ghili[1], Nitish Jain[2], K. Sudhir[3], [1]Yale University, New Haven, CT, [2]London Business School, London, United Kingdom; [3]Yale School of Management, New Haven, CT

"Sequential Screening" is a common pricing practice for experience products (e.g., flights, flight ancillary products, shows, etc): firms commit in advance to a price schedule that charges a low price if purchase is made at least x-days in advance, and a high price otherwise. We build a structural model that, inspired by the mechanism-design literature on sequential screening, captures multi-dimensional heterogeneity across customers on (i) price sensitivity and (ii) information revelation. We are currently estimating this model using novel experimental data from an international airline based in Asia. Our results will have recommendations to the airline on whether and to what extent it should do sequential screening. Our framework would be applicable to other firms faced with similar pricing decisions.

Friday, 10:30AM

FB08

Merrick 2 - Lobby Level
Digitization 6: Privacy and Consumer Behavior
Special Session

4 Consumer Learning in a Durable-Goods Environment and Profitable Free Trials

Takeaki Sunada, University of Rochester, Rochester, NY

Free trials, wherein consumers have limited access to the product before the purchase, are a common strategy among providers of experience goods, for example, digital goods. Although a more comprehensive trial facilitates more consumer learning, it becomes a closer substitute for the full product and cannibalizes the demand. I develop a structural framework to study the mechanism behind this trade-off. The model embeds a dynamic model of durable-goods adoption in a Bayesian learning framework and characterizes how a product experience affects users' product valuation.

I apply my framework to designing free trials of a major sports videogame. I find limiting duration of free usage is an effective strategy to differentiate trials from the full product, whereas limiting access to product features is not. I also illustrate the complementary role between trials, pricing, and offering incentives to user engagement.

Friday, 10:30AM

FB08

Merrick 2 - Lobby Level
Digitization 6: Privacy and Consumer Behavior
Special Session

5 Consumer's Risk-Seeking Behavior in Opaque Product Purchase: Evidence from a Leading Online Retailing Platform

Hongxian Huang[1], Anindya Ghose[2], Runshan Fu[2], [1]NYU Stern School of Business, New York, NY, [2]New York University, New York, NY

"Probabilistic and opaque products are becoming increasingly popular. When buying an opaque product, consumers know the set of possible products, but the exact realization of the product they eventually get is revealed only after the purchase. Despite their popularity, it is unclear how opaque products with built-in uncertainty affect consumer choices. In this paper, we study this question in the context of a specific type of opaque products, called ""loot box"". Each loot box contains a toy, chosen from a series of toys with different probabilities. A series usually includes 6-12 standard toys, as well as 1-2 special toys that appear with very low probability. Consumers will only find out what the toy is in a loot box after the purchase. A unique feature of our setting is the availability of each individual toy for purchase in a marketplace. Thus, consumers can choose between a loot box (an opaque product) and a specific toy in the series (a regular product). Leveraging a dataset of sales and toy characteristics, we estimate a BLP-type model and find that consumers on average obtain positive utility when buying a loot box, compared with buying specific toys. This suggests initial evidence of potential risk-seeking behavior in purchasing opaque products. We will conduct a set of counterfactual analysis to evaluate the choices in adopting opaque products, and discuss different behavioral mechanisms behind our results."

Friday, 10:30AM

FB09

Grove - Lobby Level
Platforms: Digital Economy I
Contributed Sessions

Session Chair
Ludovic Stourm, HEC Paris, Jouy-en-Josas, IF, France.

Friday, 10:30AM

FB09

Grove - Lobby Level
Platforms: Digital Economy I
Contributed Sessions

1 Modeling Two-Sided Platform Diffusion

Paul Parker[1], Yeji Lim[2], Murali K. Mantrala[3], [1]University of Kansas, Lawrence, KS, [2]Cal State Fullerton, Fullerton, CA, [3]University of Kansas, Lawrence, Lawrence, KS, Contact: paul.parker@ku.edu

The proliferation in global internet access has resulted in the adoption of two-sided digital platforms across geographically and culturally distinct locations. However, the impact of how diffusion forces affect each side of these platforms, across geographies, has yet to be fully characterized. To better understand these phenomena, we develop a two-sided diffusion model that captures the growth of crowdfunding platforms across countries. Our framework analyzes how each side of a platform in a specific country influences the other side's growth while also considering the effect of the platform's growth in other countries. Using data from Kickstarter, the largest two-sided crowd funding platform of the last decade, we examine the diffusion forces within and across 25 countries. Our dataset consists of 13 years of adopters on both sides of the platform: those founding projects who seek financial support for a specific objective, and the backers who fund the projects. In this research, we find that innovators fuel the growth of projects to a greater degree than backers. Furthermore, we find that the growth in new projects and backers is primarily driven by the existing number of backers, rather than projects. Regarding multinational effects, our findings show that the growth of multinational backers has a greater impact on the growth of projects and backers in the focal country than the growth in the local market.

Friday, 10:30AM

FB09

Grove - Lobby Level
Platforms: Digital Economy I
Contributed Sessions

2 The Influence of Digital Platform Remuneration on Service Choice

Levent Uyar[1], Rouven Seifert[1], Michel Clement[1], Sonke Albers[2], Janek Meyn[2], [1]University of Hamburg, Hamburg, Germany; [2]Kuehne Logistics University, Hamburg, Germany.

While digital music subscription platforms account for almost 70% of record music revenues (IFPI 2022), there is an ongoing debate about the allocation of the subscription revenues towards right holders. Streaming services and labels discuss alternative remuneration models, potentially changing the artists´ and labels´ income from digital platforms. Most industry debates focus on implications when switching between pro rata (based on total market share of all users) and user centric (based on market share of an individual consumer) remuneration models. Prior research studied the efficacy of different remuneration models and the change in revenue allocation, without considering consumers' response when switching between pro rata and user centric remuneration models. In this study, we contribute to the literature on digital platforms and investigate consumers' response to two remuneration models. We propose a conceptual framework that links remuneration policies in subscription services to service choice. We conduct a choice based conjoint experiment as part of an online survey with 2,000 participants, representative of the German population with Internet access. We divide the participants in two groups and test the impact of remuneration policies on consumers social and moral preferences under different primings. We estimate the values of product attributes in a choice set design that is orthogonal and balanced, varying the number of available songs, sound quality, price and remuneration model. The results indicate consumers' preference towards the user centric model. However, with priming, the remuneration model becomes the most important decision criterion, amplifying the preference for the user centric model. Furthermore, we conduct a set of online experiments to estimate the contingencies of the remuneration effect. Finally, we derive various implications for different stakeholders.

Friday, 10:30AM

FB09

Grove - Lobby Level
Platforms: Digital Economy I
Contributed Sessions

3 Platform Leakage and Disintermediation Prevention

Pradeep Chintagunta[1], Liqiang Huang[2], Wei Miao[3], Wanqing Zhang[4], [1]University of Chicago, Chicago, IL, [2]Zhejiang University, Hangzhou, China; [3]University College London, London, United Kingdom; [4]City University London, London, United Kingdom. Contact: wei.miao@ucl.ac.uk

Online platform businesses have created enormous economic value in recent decades. However, disintermediation, which occurs when platform users bypass the platform to complete transactions directly, has become the Achilles' heel of the platform business model, hurting platforms' revenues and even survival in the long run. Despite being a prevalent issue, disintermediation has been understudied in the literature due to its unobserved nature in secondary data. In this study, we overcome this empirical challenge by designing a randomized field experiment in which independent contractors were hired as undercover buyers to reach out to sellers under different experimental conditions. We investigate how willing sellers are to engage in disintermediation initiated by buyers. Specifically, the experiment varies (1) if the communication could be monitored by the platform and (2) the magnitude of commission savings from disintermediation. Our results show that communications being unmonitored significantly increases the level of seller disintermediation by up to 21.7 percentage points. Meanwhile, the average treatment effect of higher commission savings is statistically insignificant. Next, we apply the multi-arm causal forest algorithm to estimate the conditional average treatment effects (CATE) for each individual observation. The CATE estimates reveal salient treatment heterogeneity across sellers: Communications being unmonitored ubiquitously induces higher levels of disintermediation for all sellers, albeit with different magnitudes; however, high commission savings lead to opposing effects across individuals, which reconcile the insignificant average treatment effects. Finally, second-stage regression analyses reveal a U-shaped effect of sellers' tier status on CATEs. In addition, sellers with shorter tenure and higher recent sales are more motivated to disintermediate. Our results provide important managerial implications for online platforms on whom to target for more effective disintermediation management.

Friday, 10:30AM

FB09

Grove - Lobby Level
Platforms: Digital Economy I
Contributed Sessions

4 Estimating Sparse Spatial Demand to Manage Crowdsourced Supply in the Sharing Economy

Ludovic Stourm[1], Valeria Stourm[2], [1]HEC Paris, Jouy-en-Josas, France; [2]HEC Paris, Jouy-en-Josas, France. Contact: stourm@hec.fr

Peer-to-peer sharing economy platforms crowdsource supply from individual providers who offer access to resources in different locations, with different quality levels, and at different prices. Demand for these resources is often spatial in nature and sparse. We develop a method to guide the targeting of acquisition and retention efforts by such platforms as they manage their relationships with providers, and apply it using a dataset from a French car-sharing platform. We lay out an aggregate random coefficient logit model of spatial demand and propose a novel way to deal with data sparsity to accommodate listings with zero transactions. We then evaluate the contribution of each provider to the platform profit by simulating its removal and determining the corresponding loss, taking into account substitution effects and price competition between providers. We analogously evaluate the increase in profit that the platform can expect to make if it acquires a new provider, depending on its location and characteristics. We find that popular providers are not necessarily valuable, and that locations with few current providers are not necessarily those in which the platform should strive to acquire new providers.

Friday, 10:30AM

FB10

Oxford - Level 2
Text and Image: Applications
Contributed Sessions

Session Chair
Masakazu Ishihara, New York University, New York, NY

Friday, 10:30AM

FB10

Oxford - Level 2
Text and Image: Applications
Contributed Sessions

1 The Impact of Intellectual Property Rights Protection Policy on Online Sellers

Shuo Zhang[1], Tat Y. Chan[2], Tianjun Feng[3], Xiang Hui[2], Meng Liu[2], Fuqiang Zhang[2], [1]Shanghai Jiao Tong University, Shanghai, China; [2]Washington University in St. Louis, St. Louis, MO, [3]Fudan University, Shanghai, China.

Intellectual property protection has long been an important issue for both policymakers and business managers. With the rise of e-commerce, the definition of intellectual property has evolved to include virtual assets such as brand equity, digital content (image, music, video), etc.
In our study, we focus on image plagiarism, a special form of IP violation behavior conducted by online sellers. Image plagiarism denotes the activity of an online retailer to utilize pictures, and/or photos of products produced by another retailer without the permission of the copyright owner for commercial purposes. Specifically, the violator may use such images to promote its product, which may not necessarily be counterfeit to the original merchandise but something very similar in design.
We leverage a unique dataset offered by the IP protection team of one of the largest online retail website in the world to observe sellers' performance before and after the IP violation complaints. We estimate a DID style model with a doubly robust estimator to capture the treatment effect of two different IP protection policies implemented by the platform toward both the complainee and complainer sellers. We find that while the IP protection policy will significantly punish the complainee sellers in terms of their sales and user visits, surprisingly the complainee sellers' sales and user visits also significantly decreased after the infringing products are removed from the platform. We investigate the situation further and find potential reasons behind the unintended consequence is because the advertising effect and market expansion effect dominate the business stealing effect when the complainee sellers exhibit identical pictures on the shopping website close to the original products.
Our empirical findings will provide important managerial implications to both the online retailer as well as the digital platform governance.

Friday, 10:30AM

FB10

Oxford - Level 2

Text and Image: Applications
Contributed Sessions

2 Using Topic Modeling to Study Location Data
Ning Zhong, Penn State University, University Park, PA
Mobile location data has emerged as a rich data source for marketers. Collected by commercial vendors, such data consist of geographic coordinates that can be enriched with information about the point of interest (POI) located at the coordinates, enabling the use of text analytic methods to examine consumer mobility patterns. In this research, we develop a hierarchical, time-varying, supervised topic model to examine how the volume and share of visits across business categories shifted in the aftermath of COVID-19 pandemic. Using location data collected from mobile devices in three US states between October 2021 and June 2022, a time period that inflation soared, we investigate whether and how consumers changed their mobility in their patterns of frequenting different businesses. Our research suggests how marketers and policymakers can draw insights from large-scale historical location data by employing text analytics methods.

Friday, 10:30AM

FB10

Oxford - Level 2
Text and Image: Applications
Contributed Sessions

3 Using Vision Transformers to Augment Visual Concept Testing
Qiurui Chen[1], Nino Hardt[2], [1]SKIM, Rotterdam, Netherlands; [2]SKIM, Berlin, Germany. Contact: rachelchen0831@gmail.com
In many consumer goods categories, firms rely on concept testing to find the best designs for products and packages. In this research we show that existing databases with product scores can be used to fine tune vision transformers and deliver accurate predictions. In our application, we use a database of choice-experiment-based scores for 2000+ product design concepts to fine-tune a vision transformer model. We find that the accuracy of the model is surprisingly high, even on hold out data. Average percentage error is 0.053 for one market. We also find great diagnostic value through using attention heatmaps. Implications for business decision making are discussed.

Friday, 10:30AM

FB10

Oxford - Level 2
Text and Image: Applications
Contributed Sessions

4 Changing Roles of Word-Of-Mouth Communications in Repeated Consumption Decisions: The Case of Serial Drama Viewing
Masakazu Ishihara[1], Baek Jung Kim[2], Hiroshi Kumakura[3], [1]New York University, New York, NY, [2]University of British Columbia, Vancouver, BC, Canada; [3]Chuo University, Tokyo, Japan. Contact: mi25@stern.nyu.edu
This paper studies the roles of Word-of-Mouth (WOM) communications where consumers make consumption decisions repeatedly and they re-evaluate their opinions about the product or service as their experiences change with repeated consumption. In such an environment, the topics discussed in WOM communications could change over time, and the purpose of consuming the contents of WOM could also change from information acquisition to opinion exchanges with other consumers. We study the changing roles of WOM communications over time using data on Japanese serial dramas between 2017 and 2018. Our goals are two folds. First, using topic modeling and sentiment analyses, we document how the valence and topics of WOM change over time. Second, we develop a structural Bayesian learning model of consumers' drama viewing decisions and evaluate how informational and consumption values of WOM communications vary over time, by topic and sentiment. We find that WOM on experiential attributes of dramas and neutral and negative WOM contents have higher informational values than other WOM contents. Moreover, WOM on negative emotions and drama's storyline tend to generate higher consumption values. Our results provide insights into how to design products and services effectively so as to benefit from the changing roles of WOM communications.

Friday, 10:30AM

FB11

Cambridge - Level 2
ML: Customer and innovation
Contributed Sessions

Session Chair
Christian Pescher, Universidad de los Andes, Las Condes, Chile.

Friday, 10:30AM

FB11

Cambridge - Level 2
ML: Customer and innovation
Contributed Sessions

1 Customer Journey Analysis with Interpretable Deep Learning

Dongcheng Zhang[1], Kunpeng Zhang[2], David A. Schweidel[3], [1]Goizueta Business school, Emory university, Atlanta, GA, [2]University of Maryland Robert H. Smith School of Business, College Park, MD, [3]Emory University, Atlanta, GA, Contact: dongcheng.zhang@emory.edu
Predicting future customer behavior and understanding its drivers are crucial to customer relationship management. Yet, the tools used to gain insights into aspects of the customer journey often rely on statistical models that impose simplifying assumptions. In this research, we develop an interpretable deep learning framework to forecast future customer activity. Our approach allows us to not only consider transaction history, consistent with prior work on customer lifetime value, but also take into account marketing activities and other contextual factors. Partnering with a large multi-channel retailer, we aim to build a predictive model of future purchasing with interpretability. This can help us identify those characteristics of the customer journey to date that are indicative of high future value, as well as the marketing activities that effectively impact consumer behavior. We further discuss the practical value of the framework and the actionable insights it produces for marketing practice.

Friday, 10:30AM

FB11

Cambridge - Level 2
ML: Customer and innovation
Contributed Sessions

2 Language Models for Automated Market Research: A New Way to Generate Perceptual Maps

Peiyao Li[1], Zsolt Katona[2], Miklos Sarvary[3], Noah Castelo[4], [1]Haas School of Business, UC Berkeley, Berkeley, CA, [2]University of California Berkeley, Berkeley, CA, [3]Columbia Business School, New York, NY, [4]Alberta School of Business, Edmonton, AB, Canada.
This paper explores the potential of generative language models to substitute for human participants in market research. Such AI-based models can be used to generate textual continuation given a prompt. For the use case of Perceptual Maps, the paper shows that by carefully formulating the prompts, this new method generates outputs that are close to those generated from human surveys. Moreover, this applies for perceptual maps based on both brand similarity measures and product attribute ratings. The paper demonstrates that using this new method of fully or partially automated market research will allow future marketers to speed up and make their work more efficient. Further results also suggests that with an ever larger training corpus applied to generative language models, AI-based market research will be applicable to answer more nuanced questions based on demographic variables or contextual variation that would be prohibitively expensive or infeasible with human respondents.

Friday, 10:30AM

FB11

Cambridge - Level 2
ML: Customer and innovation
Contributed Sessions

3 Competitive Landscape Analysis and Innovation Ideation with Generative Language Model

Chengfeng Mao[1], John R. Hauser[2], [1]MIT, Cambridge, MA, [2]MIT, Cambridge, MA, Contact: maoc@mit.edu
This paper presents the application of GPT3, a generative pre-trained transformer model, for competitive landscapes analysis. GPT3 can accurately recognize and categorize texts, as well as extract related entities, such as competitors and their offers. This capability enables us to identify potential threats from competitors. Further, we demonstrate the utility of GPT3 in elaborating user needs and customer perceptions of the products by fiine-tuning GPT3 on user-generated-content (UGC). Such insight further enables us

to predict market trends and identify areas where marketers may need to focus their attention. Finally, we not only apply GPT3 to identify problems, but also leverage its generative capabilities to generate new solutions to address unmet customer needs and rising competitions. In summary, we identify three specific applications that can benefit from applying GPT3 and other NLP algorithms: (1) monitoring competing products, (2) tracking customer perceptions of competitor offerings, and (3) proposing innovations to address the threats.

Friday, 10:30AM

FB11

Cambridge - Level 2
ML: Customer and innovation
Contributed Sessions

4 Can Ai Help in Crowdsourcing? a Theory-Based Model for Idea Screening in Crowdsourcing Contests

Christian Pescher[1], Jason Bell[2], Gerard J. Tellis[3], Johann Fueller[4], [1]Universidad de los Andes, Las Condes, Chile; [2]University of Oxford, Oxford, United Kingdom; [3]University of Southern California, Los Angeles, CA, [4]University of Innsbruck, Innsbruck, Austria.

Crowdsourcing generates thousands of ideas. The selection of best ideas is costly because of the limited number, expertise, objectivity, and attention of judges. The authors test three theoretical models, eight model specifications, and four methods for idea selection. Results are the following. First, current models are unable to replace humans in selecting the best ideas. Second, however, these models do an excellent job in screening bad ideas, reducing judges' tedium and enabling their focus on the best ideas. Third, the authors develop an Idea Screening Efficiency curve that trades off the False Negative Rate of good ideas screened out with the rate of ideas screened. Managers can choose the desired point on this curve for optimal idea screening. Fourth, a new predictor, Word Atypicality, is simple and efficient in such screening. Theoretically, this predictor selects ideas that are detailed, rich, and inclusive.

Friday, 10:30AM

FB12

Trinity - Level 2
Choice Modeling: Consumer Behavior
Contributed Sessions

Session Chair
Gary J. Russell, University of Iowa, Iowa City, IA

Friday, 10:30AM

FB12

Trinity - Level 2
Choice Modeling: Consumer Behavior
Contributed Sessions

1 The Impact of a Subscription Program Within and Across Categories

Daniel McCarthy[1], Shin Oblander[2], Young-Hoon Park[3], Yeohong Yoon[1], [1]Goizueta Business School, Emory University, Atlanta, GA, [2]Columbia University, New York, NY, [3]Cornell University, Ithaca, NY

Subscription programs are growing in popularity, with a growing number of firms launching subscription offerings to supplement/augment their core businesses. However, the impact of such programs is relatively understudied. In this paper, we study the spillover effects of a subscription on spending behavior within and beyond the focal company. We explore how signing up for a subscription program at a restaurant delivery company changes consumer behavior for the focal firm and the category as a whole (e.g., both the focal firm and competing firms) as well as adjacent categories (e.g., restaurant and grocery). We use individual-level transaction data to assess the main effects, as well as how those effects vary over time and across consumers. Consistent with prior literature, we find that subscribing to a subscription service has a strong positive direct effect (i.e., significantly higher spending at the focal firm). However, this increase in spending does not appear to significantly decrease spending at competing firms and other related categories, implying that the new subscription program "expanded the pie" for the category as a whole. Our work suggests that introducing a subscription program may not be bad news for other players in the category.

Friday, 10:30AM

FB12

Trinity - Level 2

Choice Modeling: Consumer Behavior
Contributed Sessions

2 The Varying Role of Emotions in Choice Intentions Across Product and Service Categories

Songting Dong[1], John H. Roberts[1], Karen Hansen[2], [1]University of New South Wales, Sydney, Australia; [2]Forethought, Melbourne, Australia. Contact: johnr@agsm.edu.au

Emotions have been shown to be critical to consumer evaluation and choice processes in the consumer behavior literature. With the advent of finer and more accessible measurement tools, marketing scientists have began to show interest in how they can increase the explanatory power and diagnosticity of their models by the inclusion of emotions. We suggest that the importance of emotions in choice depends not only on the emotional level considered brands elicit, but also on the degree to which emotions vary amongst considered brands, and the importance of those emotions to consumers in achieving their goals, leading to their total impact on the purchase decision. We examine each of these aspects separately; levels of emotions elicited, variance of emotions across brands, importance weights and total impact. We would expect that these aspects to emotions will vary, depending on the nature of the category being evaluated. For example, hedonic categories may elicit stronger emotional responses than do utilitarian ones. To see how the role of emotions varies by category, we first need to have a basis on which to classify those categories. We use the literature to identify items used to differentiate between different types of category on the basis of constructs such as involvement, hedonic values, and individual versus other purchases. Combining our data on category characteristics with a large cross-category database of the emotional response in 21 categories across 132 studies, we are able see how emotions present, and influence purchase intent in different types of category.

Friday, 10:30AM

FB12

Trinity - Level 2
Choice Modeling: Consumer Behavior
Contributed Sessions

3 Modeling the Dual Roles of Price: Constraint vs. Quality Signal

Sungjee Choi, Gary J. Russell, University of Iowa, Iowa City, IA, Contact: sungjee-choi@uiowa.edu

Consumers commonly trade off price and quality in their purchase decisions. However, in many markets, consumers cannot easily judge quality. In these circumstances, consumers may use price as a quality cue to alleviate uncertainty in their decision-making process. For this reason, price serves a dual role -- both as a constraint on choice and as signal of product quality. Because these two effects work in opposite directions, consumers are expected to exhibit relatively less price sensitivity in the presence of a price-quality association (P-Q). Moreover, higher-priced brands should be expected to face a relatively less elastic demand in the presence of a P-Q association. To examine these predictions, we develop a choice model that allows P-Q associations to impact consumer price response.
The model is applied to scanner data choice histories in the margarine product category. Results imply that the strength of the P-Q association varies across the consumer population. Consumers who have a strong P-Q association are not as price sensitive as consumers who have a weak P-Q association. This suggests that variation in P-Q strength moderates the demand elasticity facing high-priced brands. To understand the generality of our results, we contrast our P-Q framework to benchmark models in several markets. Implications for retailer pricing strategy are discussed.

Friday, 10:30AM

FB12

Trinity - Level 2
Choice Modeling: Consumer Behavior
Contributed Sessions

4 Switching Energy Suppliers: The Moderating Effects of Information Transparency Policies and Loyalty Programs

Hester M. Huisman[1], Evert de Haan[2], Machiel Mulder[3], Jaap E. Wieringa[2], [1]University of Groningen, Groningen, Netherlands; [2]University of Groningen, Groningen, Netherlands; [3]University of Groningen, Groningen, Netherlands. Contact: h.m.huisman@rug.nl

Consumer inertia in retail energy markets creates challenges for energy regulators to reach climate-policy objectives while ensuring safe and affordable energy for all consumers. While regulators' goals are to increase consumer participation (e.g., by switching energy retailers) via information transparency, energy retailers are motivated to increase customer loyalty, as customer retention is much more profitable than customer acquisition. Hence, regulators and energy retailers have conflicting objectives when it comes to consumer switching behavior. It is therefore also unclear how the interplay of interventions and actions of regulators and retailers affect consumers' switching behavior. In this study, we examine how retailers' loyalty programs and the market interventions of policy makers jointly influence the energy contract preferences of consumers, and to what extent this influences their switching behavior. We conduct an online discrete choice experiment where consumers decide to switch retailers or not. In a between-subject experimental setting, our research investigates how consumers' preferences and choices are affected by the treatments "information transparency" and "loyalty programs" in a 2x2 design. The experiment provides insights into the moderating effects of policy makers' and energy retailers' actions on consumers' preferences and decisions: e.g., are retailer actions naturalizing or strengthening regulator's policies? We provide important recommendations for interventions of policy makers and customer retention strategies of marketing managers.

Friday, 10:30AM

FB12

Trinity - Level 2

Choice Modeling: Consumer Behavior

Contributed Sessions

5 Mvp vs. Mvl Bundle Choice Models: A Critical Review

Gary J. Russell[1], Yang Pan[2], I Hsuan Chiu[3], [1]University of Iowa, Iowa City, IA, [2]McMaster University, Hamilton, ON, Canada; [3]University of Wisconsin-Milwaukee, Milwaukee, WI, Contact: gary-j-russell@uiowa.edu

The Multivariate Probit (MVP) and the Multivariate Logistic (MVL) models provide alternative ways of representing the bundle choice process. Drawing upon research in economics and psychology, we discuss the theoretical foundations of the two models and their appropriateness for certain types of marketing science applications. We argue that the two models make fundamentally different assumptions about choice behavior. The MVP model envisions a set of correlated decisions that are viewed by the consumer as conceptually independent. No global attributes exist that tie the decisions together. In contrast, the MVL model views the decisions as linked due to the existence of global (bundle-level) attributes. Advances in computational strategies have made both models practical for application. Thus, the researcher's decision to adopt a particular model should depend on assumptions about the nature of the bundle utility process. That is, the choice of MVP versus MVL should depend on the relevant consumer behavior theory.

Friday, 10:30AM

FB13

Escorial - Level 2

User-generated Content and Online Consumer Engagement

Special Session

Session Co-Chair

Vamsi K. Kanuri, University of Notre Dame, Notre Dame, IN

Friday, 10:30AM

FB13

Escorial - Level 2

User-generated Content and Online Consumer Engagement

Special Session

Session Chair

Martina Pocchiari, National University of Singapore, Singapore, Singapore.

Friday, 10:30AM

FB13

Escorial - Level 2

User-generated Content and Online Consumer Engagement

Special Session

1 Brand Echo Chambers

Arvin Moazemi[1], Verena Schoenmueller[2], Oded Netzer[3], [1]Bocconi University, Milan, Italy; [2]ESADE Business School, Barcelona, Spain; [3]Columbia Business School, New York, NY

The social media echo-chamber has been widely discussed as a risk to the exploration of new ideas and political views because people are surrounded by like-minded people. Echo-chambers have been mostly discussed in the context of media and political ideology. In this research, we explore echo-chambers in the context of brands. How do consumers who are surrounded by consumers with similar brand preferences perceive and behave toward brands? To answer this question, we derive two complementary measures of brand echo-chambers either capturing echo chambers based on whether the focal consumer's social network also follows the brand, or whether the consumer's social network has similar brand preferences/brand followership to the focal consumer. To measure brand echo-chamber, we collected a large-scale Twitter dataset that comprises 604,182 followers of over 100 brands. We leverage our Twitter data to assess individuals' sentiment and frequency of speaking about brands and connect it to the echo-chamber measures. We find that people in more echo-chambered networks talk about brands more frequently and more favorably. To evaluate the relationship between brand echo-chambers and brand-based equity, we relate our brand echo-chamber scores with Young and Rubicam's Brand Asset Evaluator data. We find that brands with higher levels of echo-chambers, tend to be perceived by customers as more independent, intelligent, and straightforward, kind, helpful, caring about its customers, socially responsible, down to earth, and gaining in popularity, but are perceived as less stylish and upper class.

Friday, 10:30AM

FB13

Escorial - Level 2

User-generated Content and Online Consumer Engagement

Special Session

2 Market Level Differences in the Dynamic Impact of Online Wom

Shyam Gopinath, Indiana University Kelley School of Business, Bloomington, IN

Online Reviewers who post actively have a role to play in disseminating information and driving product sales. In this research, we use a Dynamic Linear Modeling (DLM) framework to investigate the differential evolutionary impact of experienced and novice reviewers and critics on product sales, over time and across geographical markets. In addition, we study how different types of senders (experienced and novice reviewers and critics) influence different receiver types (based on purchase channel and demographics) differently. The dataset consists of a panel data of all Amazon reviews, metacritic.com critics scores and product sales data covering the first two months of release for 130 new music albums released on Amazon.com over an approximately three-month period. Our market level econometric model also allows us to classify different markets based on the responsiveness of different demographic groups to experienced and novice reviewers and critics.

Friday, 10:30AM

FB13

Escorial - Level 2

User-generated Content and Online Consumer Engagement

Special Session

3 Exploring How Political Identity and Content Drive User Engagement on Social Media

Vamsi K. Kanuri, University of Notre Dame, Notre Dame, IN

Social media has emerged as a preferred communication channel for politicians. However, the question of how a politician's identity and their social media content cumulatively influence audience engagement remains underexplored. This dearth of research is disconcerting because political communications have tremendous societal impacts and a lack of understanding of the effect of a politician's communication content in conjunction with their identity can potentially undermine the impact of their communication efforts in driving social awareness and change. To address this shortcoming, the authors use data on 238,252 messages tweeted by all the Senators in the 116th Congress of the United States to study how the interplay between three crucial measures of a politician's identity (i.e., gender, race, and party affiliation) and two vital aspects of political language (i.e., morality and religiosity) independently and cumulatively impact audience engagement. In their analyses, they employ structured and unstructured text analysis and leverage multiple identification strategies to study the intended associations. In this presentation, the authors will discuss their findings and briefly elaborate on how politicians can use the findings to develop effective audience engagement strategies.

Friday, 10:30AM

FB13

Escorial - Level 2

User-generated Content and Online Consumer Engagement

Special Session

4 The Role of Emotion Shocks in Online Community Dynamics

Martina Pocchiari[1], Yaniv Dover[2,3], [1]National University of Singapore, Singapore, Singapore; [2]The Hebrew University Business School, Jerusalem, Israel; [3]The Federmann Center for the Study of Rationality, Jerusalem, Israel. Contact: yaniv.dover@mail.huji.ac.il

Online communities generate marketing value for both firms and consumers, and their sustainability relies on continuous user engagement. In an environment in which competition for engagement is fierce, digital platforms seemingly favor the use of negative emotion to engage users. Yet, the impact of emotion shocks on the fabric of social interactions in online communities remains unclear. In this study, we assess the impact of negative emotional shocks on user engagement in online communities, leveraging a natural experiment on Reddit.com. Particularly, we measure the effects of emotion shocks associated with outcomes of NCAA basketball games. We track the volume and network structure of user engagement in NCAA communities around game days, and estimate causal effects of emotion shocks using difference-in-difference models. We find that negative emotional shocks decrease user engagement, retention, and the activation of new users. Furthermore, the structure of discussion networks changes, and user-generated content expresses more social disconnection. These effects are strongest for unexpected negative events, suggesting that expectations management can potentially mitigate emotional disruptions. The effects also vary depending on the relative position of users in their social networks. The results provide insight into the complex social consequences of exposing users to emotions on community dynamics.

Friday, 10:30AM

FB14

Alhambra - Level 2

Game Theory: General IV

Contributed Sessions

Session Chair

Eric Schmidbauer, University of Central Florida Department of Economics, Orlando, FL

Friday, 10:30AM

FB14

Alhambra - Level 2

Game Theory: General IV

Contributed Sessions

1 Restocking Fees: Not a Hammer but a Multi-Tool

Dinah Cohen-Vernik[1], Amit Pazgal[2], [1]University of Houston-Downtown, Houston, TX, [2]Rice University, Houston, TX

Charging a restocking fee for returned used or opened merchandise is a common policy among many retailers, particularly for electronics, large appliances, and furniture. The amount of the fee varies by retailer and item and is usually expressed as a percentage of the purchase price. Retailers impose restocking fees to recover the costs associated with the return process (inspection, repackaging, etc.), compensate for lost sales, and to deter opportunistic returns. For example, customers may attempt to exploit a price drop by returning an earlier purchased item for a full refund and re-purchasing it at a lower price. However, a restocking fee would make this financially less attractive for the customer. In the same example of a price drop, the partial refund promise policy offers customers a refund for a portion of the price difference if the product's price decreases after purchase. So from a customer's standpoint, both restocking fees and partial refund promise policies have a similar outcome, as they both result in the customer effectively paying the price somewhere between the initial and the discounted prices for the item. This paper challenges the conventional understanding of restocking fees as simply a means to address the costly issue of returns in retail. Using a two-stage game-theoretic setting, we demonstrate that restocking fees can serve as a versatile tool in a retailer's toolbox, delivering benefits even when returns are not a costly issue. We show how restocking fees can be used in conjunction with, or, under certain conditions, in place of, partial refund policy, to increase retailer profits. Furthermore, our analysis reveals that while restocking fees may be perceived by consumers as similar to partial refund policies, they actually outperform the latter on a wide range of model parameters.

Friday, 10:30AM

FB14

Alhambra - Level 2
Game Theory: General IV
Contributed Sessions

2 Dynamic Social Product Design and Fashion Classic

T. Tony Ke[1], Chenxi Liao[1], Fei Long[2], Michelle Y. Lu[3], [1]The Chinese University of Hong Kong, Shatin, Hong Kong; [2]University of North Carolina at Chapel Hill, Chapel Hill, NC, [3]China Europe International Business School, Shanghai, China. Contact: chenxiliao@cuhk.edu.hk

Besides potential cost savings, why do fashion brands retain some classic designs for years or even decades, given the trends and fads of the market are constantly changing? We provide an explanation and analysis of *fashion classics* based on social influence across generations of consumers. A monopoly firm makes both product and pricing decisions over time, where in each period, it decides whether to keep the old product, add a new product or replace the old product with a new one. Overlapping generations of consumers enter the market over time, and each of them will buy at most one product over their lifetime for conspicuous consumption which supplies no functional value but serves as the sole signal of the buyer's income. We show that when the firm has no commitment power, it always chooses to retain a classic design over time that lends prestige to newcomers by leveraging social influence from the established patrons. We identify five distinct types of equilibria depending on consumers' income heterogeneity and growth rate, which can explain a wide range of product strategies regarding to fashion classics observed in practice. For example, in the *premium classic* equilibrium, the firm sells the classic product at a high price to the high-income upper-class consumers and a new design at a lower price to the middle class, while in the *basic classic* equilibrium, the firm sells the classic product at a low price to the middle class and a new design at a higher price to the upper class. These two strategies seem to correspond to the ones adopted by Chanel and Louis Vuitton respectively. Lastly, we also find cases where the firm can surprisingly get hurt in profit when consumers' income grows faster or when the middle class becomes wealthier.

Friday, 10:30AM

FB14

Alhambra - Level 2
Game Theory: General IV
Contributed Sessions

3 Oversharing? the use of Buyer "Love Letters" in Residential Real Estate Markets

Eric Schmidbauer, University of Central Florida Department of Economics, Orlando, FL, Contact: eschmidb@ucf.edu

In some instances a seller cares not only about the price received for a product but also how the buyer intends to use the product. For example, the seller of a classic car may prefer the buyer hold the car as a collector rather than strip it for spare parts, and the seller of a house may prefer to sell to a family with small children rather than a house flipper. Specifically in the context of real estate, buyers in tight markets have increasingly resorted to sending a "love letter" along with their monetary offer. However, little is known about the effects of such pre-purchase communication. In this paper I develop a game theoretic model of home sales in which the seller may react favorably, unfavorably, or be indifferent to receiving a love letter from bidders. Bidders who think they have a low chance of winning (because their valuation of the house is low relative to their expected valuation of others) utilize love letters because they "have nothing to lose" while for higher valuation bidders not sending a love letter is best. A brief discussion of issues related to implicit bias is also included.

Friday, 10:30AM

FB15

Michaelangelo - Level 2
CRM: Sales Force Management 1
Contributed Sessions

Session Chair

Junhong Chu, Hong Kong University Business School, Hong Kong, Hong Kong.

Friday, 10:30AM

FB15

Michaelangelo - Level 2
CRM: Sales Force Management 1
Contributed Sessions

1 **Salespeople Under Dual Quotas: An Empirical Investigation on the Efficacy of Combined Quota Schemes**

Ashutosh (Ash) Patil[1], Niladri Syam[2], Krishnamurthy Partha[3], [1]Monte Ahuja College of Business, Cleveland, OH, [2]Trulaske School of Business, Columbia, OH, [3]C.T. Bauer College of Business, Houston, TX

Combination quota plans that blend multiple sales goals for rewarding success on distinct performance metrics that salespeople are incentivized to achieve simultaneously have become popular. Yet, ironically, the efficacy of such combination quotas is relatively under-researched in marketing. To that end, this research investigates a combination scheme of two different quota types. The first quota is for dollar sales, while the second is for the number of new customers to be acquired. These two quotas are instituted simultaneously to achieve two distinct objectives: maximizing total dollar sales and generating new customers. Our empirical analysis suggests that as either of these quotas is augmented, salespeople experience greater conflict on how they allocate their limited resources. Specifically, the positive relationship between a focal quota and its associated performance metric weakens as the other quota is increased. Aligned with our theoretical reasoning, we also find a similar negative moderating effect of salespeople's organizational tenure on the relationship between a focal quota and its associated performance metric.

Friday, 10:30AM

FB15

Michaelangelo - Level 2

CRM: Sales Force Management 1

Contributed Sessions

2 **The Effect of Minimum Wage on Employee Performance: Evidence from a Multi Level Marketing Firm**

Sung Joo Kim[1], Dinesh Puranam[2], Wreetabrata Kar[1], Sivaramakrishnan Siddarth[2], [1]Purdue University, West Lafayette, IN, [2]University of Southern California, Los Angeles, CA, Contact: kim3245@purdue.edu

Sales agents in Multi Level Marketing (MLM) firms operate on a 100% commission basis. Specifically, compensation is determined by two factors: how much sales an agent makes by selling products to consumers, and how many sub-agents the agent can recruit and thereby develop a profitable network. Consequently, it may appear that changes in the minimum wage may not directly impact an agent's income, as MLM firms do not pay an hourly wage. However, minimum wage increases may indirectly influence the firm and its agents in at least two different ways. First, such wage increases could increase the buying power of customers and make it easier for agent's to sell more. Second, because wage increases can increase the attractiveness of an agent's outside options, i.e., other jobs become more lucrative, recruiting new ones may become more difficult. Our research utilizes data from a large US-based MLM and a quasi-experimental design to identify how minimum wage increases impact an MLM agent. We find that an increase in minimum wage helps the average agent to boost her direct sales but not to grow her network. However, this effect differs by agent segment; an agent who already has a strong sub-agent network improves on both sales and recruitment. Insights from this work can help policymakers understand the likely results of minimum wage increase on MLM firms and assist managers of these firms to adjust strategies to such exogenous economic shifts.

Friday, 10:30AM

FB15

Michaelangelo - Level 2

CRM: Sales Force Management 1

Contributed Sessions

3 **Heterogeneous Complementarity and Team Design: The Case of Real Estate Agents**

Yan Xu[1], Mantian Hu[2], Junhong Chu[3], Andrew Ching[4], [1]Virginia Tech, Blacksburg, VA, [2]Chinese University of Hong Kong, Shatin, Hong Kong; [3]Hong Kong University Business School, Hong Kong, Hong Kong; [4]Johns Hopkins University, Carey Business School, Baltimore, MD, Contact: chu123@hku.hk

Workers often have unobserved characteristics, e.g., soft skills, that are important for teamwork. In this paper, we formulate and estimate a model of teamwork that imposes no functional form restrictions on the complementarity between different unobserved types of workers. Our modeling approach, which builds on the stochastic block models in statistics (e.g., Bickel et al., 2013) and the econometric framework developed by Bonhomme (2021), can quantify individual contributions when only teams' outputs are observed. We apply our model to a data set from a leading Chinese real estate company; the data contain the complete history of team assignments, team performances, and detailed property characteristics. We

find evidence that complementarities between different agent types are heterogeneous and cannot be captured by commonly used production functions. More specifically, workers of intermediate solo performance complement all other types of workers the most; the best solo-performing workers, however, are not the best team players. Our findings suggest that firms can improve productivity by redesigning teams without incurring additional hiring costs. Leveraging our complementarity estimates, we use counterfactual experiments to show that restructuring teams can improve overall team output by up to 28.4%.

Friday, 10:30AM

FB16

Raphael - Level 2
Online Reviews #3
Special Session

Session Co-Chair
Frank Ohnesorge, 1</sup

Friday, 10:30AM

FB16

Raphael - Level 2
Online Reviews #3
Special Session

Session Chair
Andreas Bayerl, Mannheim, Germany.

Friday, 10:30AM

FB16

Raphael - Level 2
Online Reviews #3
Special Session

1 Handling Selection Effects when Linking Online Review Reading to Subsequent Purchase

Peter Danaher, Monash University, Caulfield East, Australia.

When modeling the influence of online reviews on product sales, an important consideration is endogeneity, manifested as selection bias in this case. Customers choose whether or not to read the text of reviews, and their reasons for reading reviews are not revealed to the researcher. It might reasonably be expected that a customer with the goal of product purchase in mind is motivated to both read reviews and purchase. This creates a positive correlation between review reading and purchase that is driven by an underlying motivation for eventual purchase, and reading reviews serves the purpose of corroborating a customer's choice of product and also lowers purchase uncertainty. The purpose of this study is to develop and contrast models that are designed to handle the innate selection bias prevalent in individual-level online review and purchase data.

Friday, 10:30AM

FB16

Raphael - Level 2
Online Reviews #3
Special Session

2 Updating at the Expense of Demand? the Case of Platform Apps

Dominik Gutt[1], Wael Jabr[2], Jürgen Neumann[3], Dennis Kundisch[3], [1]Erasmus University Rotterdam, Rotterdam, Netherlands; [2]Pennsylvania State University, University Park, PA, [3]Paderborn University, Paderborn, Germany. Contact: wjabr@psu.edu

For products that undergo frequent updating, online reviews about prior versions are less informative. Digital platforms hosting those products therefore implement governance mechanisms that ensure the continued relevancy of posted reviews. One such mechanism in the context of apps requires the review history to be reset automatically with each app update, ensuring that reputation is based solely on reviews relevant to the latest release. Our paper investigates such a governance mechanism, while it was implemented by a main platform in the app market, to study its effects on app demand and the implications of updating. Using an instrumental variable approach that exploits the release of a new platform operating system as exogenous shock, our results show an asymmetrical impact across apps in the top 500 charts. While paid apps seem unscathed by updating and resetting, a sizeable group of free apps witnesses nuanced results. Top-ranked "superstar apps" benefit from updating while all other free apps take a big hit when their reputation is reset, although some apps lose more than others, contingent on their prior reputation. Our results help developers understand the implications of software updating and thus to adjust their innovation strategies, and platforms make informed governance choices.

Friday, 10:30AM

FB16

Raphael - Level 2
Online Reviews #3
Special Session

3 Learning from Consumer Reviews: The Role of Selection and Evaluation Biases

Anocha Aribarg[1], Shi (Sherry) Wang[2], Ralf Van der Lans[3], [1]University of Michigan, Ann Arbor, MI, [2]The Ohio State University, Columbus, OH, [3]Hong Kong University of Science & Technology-HKUST, Kowloon, Hong Kong. Contact: wang.13362@osu.edu

The extant marketing literature has demonstrated the impact of consumer reviews on firm performance outcomes at the aggregate level and focused primarily on the role of star ratings, not review content. Only a few papers have investigated how consumers make choice decisions based on review content. In this research, we examine how consumers select a review to read, how they interpret the review's content, and how the review may affect their choices. Inspired by the psychology theory on pre-decision confirmation bias, we conducted an incentive-aligned review-based choice experiment to test i) whether confirmation bias influences consumers to select more positive reviews of a product offered by their preferred vs. non-preferred brand to read (selection bias) and ii) whether they interpret information in favor of their preferred brand's product (evaluation bias). We then incorporate both mechanisms of confirmation bias into a structural choice model with quality learning and show how confirmation bias can manifest as belief updating bias. With the structural model, we further perform counterfactual experiments to show how a retail platform can re-design its review display system to minimize confirmation bias.

Friday, 10:30AM

FB16

Raphael - Level 2
Online Reviews #3
Special Session

4 Review Updating: How Consumers Can Change Their Mind

Martina Pocchiari[1], Yaniv Dover[2], Verena Schoenmueller[3], [1]National University of Singapore, Singapore, Singapore; [2]The Hebrew University Business School, Jerusalem, Israel; [3]Esade Business School, Barcelona, Spain. Contact: pmartina@nus.edu.sg

In an environment in which most products have a vast majority of positive reviews, negative reviews can negatively affect consumers' attitudes, decisions, and average product ratings. Under the assumption that reviews cannot change, companies often mitigate the damage caused by negative reviews by soliciting additional positive reviews from consumers, acquaintances, or professional reviewers. However, such strategies can be very costly, time-consuming, and even not particularly efficient - for example, in case of a rating distribution with a vast majority of positive ratings (e.g., the majority of products on Amazon) or if the product has only a few reviews (e.g., a newly-launched product).
In this study, we investigate an alternative approach for companies to manage consumer opinions: updating existing reviews. In the context of a large online review platform and across hundreds of product categories, we demonstrate that consumers engage in review updating, and respond to platform-wide solicitations to update. We also rely on past research on the drivers of online reviews, and investigate whether decisions to update are heterogeneous across review motives. More specifically, we investigate whether reviews originally expressing emotion-regulation motives - such as receiving an apology for a service failure - are differentially prone to updates, compared to reviews expressing information-acquisition motives - such as solving a technical problem.

Friday, 10:30AM

FB17

Balmoral Level 2
Causal Effects In Marketing
Special Session

Session Chair
Sridhar Narayanan, Stanford University, Stanford, CA

Friday, 10:30AM

FB17

Balmoral Level 2

Causal Effects In Marketing

Special Session

1 Causal Inference in Unstructured Data: The Case of Impossible Meat Launch

Boya Xu, Tong Guo, Daniel Xu, Duke University, Durham, NC

We propose a novel strategy to causally identify the impact of multi-faceted social media corpus on product entries in local markets. Our identification relies on interacting the exogenous time-series of the global social media discussion obtained from a semi-supervised topic model with the local shares of media consumption irrespective of the new products. We demonstrate our identification strategy in the case of the early-stage launching of impossible meat, a novel food technology that synthesizes meat substitutes by closely simulating the texture, flavor, and appearance of real meat. To study the impact of social media communication on local launch of impossible meat products, we construct a location-specific launching metric that accurately measures the decisions of local standalone restaurants and stores using their social media announcements. We further construct the exogenous measure of county-quarter-level intensity of topic-specific communication as the interactions between the global time series of social media discussion about various aspects of impossible meat products (e.g., financials of the key manufacturer, *Beyond Meat)* during 2015-2019 and local share of genre-specific media consumption in 2014 (e.g., percentage of financial content in social media news among food industry). Arguably, the constructed measures are exogenous to local demand shocks given the local share of media consumption is pre-determined thus irrespective of the new product being studied. We further control for county and quarter fixed effects, local-dynamic confounders, and cross-regional information spillovers. Our results suggest that local news coverage on financing of the new technology increases the regional launching of impossible meat products, whereas the coverage on health and sustainability does not have robust significant effects.

Friday, 10:30AM

FB17

Balmoral Level 2

Causal Effects In Marketing

Special Session

2 The Effects of In-App Payment Introduction on Omnichannel Shopping and Mobile App Usage

Taotao Ye[1], Venky Shankar[1], Daniel McCarthy[2], [1]Texas A&M University, College Station, TX, [2]Goizueta Business School, Emory University, Atlanta, GA

With the burgeoning growth in mobile marketing, many retailers have introduced or consider introducing new features in their mobile apps to engage their customers both online and offline. In-app mobile payment methods such as Apple Pay and PayPal can potentially enhance purchases but can be expensive for the retailer to implement with threats to margins and security. Retailers face critical questions: What is the causal effect of introducing a new in-app payment method on customers' online and offline shopping behavior? Do they lift overall purchases or merely shift the payment method from credit and debit cards to these in-app payment methods for some purchases? How does the addition of in-app payment methods affect customers' subsequent app engagement and usage? We address these questions using shopping and app usage data for a large retailer through a Difference-in-Difference analysis, controlling for potential selection and endogeneity. We estimate the heterogeneous treatment effects through causal forest and analyze app clickstream data to identify the underlying mechanisms. Results show that in-app payment adoption significantly increases shoppers' overall purchases, leading to a sizeable economic impact. Apple Pay (PayPal) adopters buy 14.3% (40.2%) more frequently, spend 15.1% (54.0%) more and buy 15.1% (40.7%) more items, and return 17.4% (46.5%) more. Apple Pay (PayPal) adopters increase their net purchase value by 14.8% (54.5%). Apple Pay adopters increase offline spending but do not change online spending. In contrast, PayPal adopters increase their spending both offline and online. We explore potential mechanisms for the results. Our findings have actionable managerial implications for the inclusion and management of in-app payment methods.

Friday, 10:30AM

FB17

Balmoral Level 2

Causal Effects In Marketing

Special Session

3 Influence Effects in Social Networks: Inward and Outward Spillovers of One Unit's Treatment

Fei Fang, Laura Forastiere, Yale University, New Haven, CT, Contact: fei.fang@yale.edu

In a connected social network, users may have varying levels of influence on others when they themselves receive interventions. For example, giving an advertisement to a more influential person can have on average a greater impact on others' purchase decisions than impacts by non-celebrities. Understanding and evaluating these effects can provide valuable insights for various applications such as targeting strategies in marketing. We define the effect of one unit's treatment on the outcome of their network neighbors in two ways: i) the inward average spillover effect on a unit's outcome of a neighbor's treatment, and ii) the outward average spillover of a unit's treatment on their neighbors' outcomes. In both causal effects, we marginalize over the distribution of the treatment vector in the rest of the network under a hypothetical Bernoulli trial. We investigate the comparison between the two causal effects in directed networks with different properties, including the conditions under which they are equivalent. We present examples which satisfy these conditions. Additionally, we develop Horvitz-Thompson estimators for both types of causal effects and their design-based variance in randomized experiments.

Friday, 10:30AM

FB17

Balmoral Level 2
Causal Effects In Marketing
Special Session

4 Does Emotional Matching Between Video Ads and Content Lead to Better Engagement: Evidence from a Large-Scale Field Experiment

Anuj Kapoor[1], Sridhar Narayanan[2], Amitt Sharma[3], [1]IIMA, Ahmedabad, India; [2]Stanford University, Stanford, CA, [3]VDO.AI, Flemington, NJ

Modern digital advertising platforms allow ads to be targeted in a variety of ways, and generally aim to match the ad being shown with either the user or the content being shown. In this study, we examine the effect of matching in emotional content of ads and the video on which the ad is shown on consumers' engagement with the ad. On the one hand, ads that are emotionally matched with the content video could lead to greater engagement with the ad because of the desire for consumers to extend the emotion they are experiencing. On the other hand, emotional mismatch between the ad and content video can lead to greater perceptual contrast, thereby drawing more attention to the ad. Consumers may also be satiated in the emotion they feel in the content video. Both of these mechanisms would lead to greater engagement with the ad if it were mismatched with the content video. Thus, whether emotional matching is more effective in driving ad engagement, and thereby potentially consumers' evaluation of, affect towards, and purchase of the advertised good is an empirical question. We study this question through a field experiment run in collaboration with VDO.AI, a video and ad serving platform. In this experiment, we manipulate the video/ad combination consumers see, with variation across the experimental conditions in the emotional content of ads and videos. We find that in our setting incongruence, where emotional content of videos and ads are mismatched, leads to greater ad engagement. We find suggestive evidence for attention being the mechanism through which incongruence leads to better outcomes. Our findings contribute to the literature on advertising, and provide an important targeting variable for firms in the AdTech space.

Friday, 10:30AM

FB18

Windsor - Level 2
Retailing:Multi-Channel
Contributed Sessions

Session Chair
Preyas Desai, Duke University, Durham, NC

Friday, 10:30AM

FB18

Windsor - Level 2
Retailing:Multi-Channel
Contributed Sessions

1 The Price of Fairness: Equity and Efficiency in Retail License Allocation

Vladimir Pavlov, UCL School of Management, London, United Kingdom. Contact: v.pavlov@ucl.ac.uk

In recent years, there have been increasing calls for marketers to incorporate considerations of fairness into their decision-making. This means that many marketing managers soon will be facing dilemmas between a profit-maximizing action and a fair action. In this paper, I study a particular instance of this trade-off. After recreational cannabis legalization in 2012, Washington state policymakers had to choose whether to allocate retail licenses by lottery (a fair mechanism) or by auction (an efficient mechanism). They chose a lottery. Using the transaction data from the Washington State Liquor and Cannabis Board, I estimate an equilibrium model of competition in the recreational cannabis market and use it to simulate the counterfactual auction allocation of licenses. I find that an auction would have increased the total sales by 5% and reduced prices by 3%. As a result, the state lost $134M over ten years in tax revenue, which amounts to 0.35% of the state's annual budget. I use a machine learning algorithm to infer racial identity from first and last name combinations of retail license applicants. From the perspective of fairness, I find that under an auction, Black applicants are on average 21% less likely to receive a retail license and majority-White areas of the state reap disproportionately larger consumer benefits from the auction (20% increase vs 3% increase in consumer surplus for majority-Black areas). The auction increases overall geographic inequality in consumer surplus by 3%, as measured by the Gini index. The reduction in opportunities for Black entrepreneurs is explained by geographic concentration of Black applicants in urban areas, where they are more likely to compete with other nearby retailers and therefore charge lower margins. In contrast, white entrepreneurs are more likely to be located in rural areas, where they effectively operate as a local monopoly. The implications for managers and policymakers are discussed.

Friday, 10:30AM

FB18

Windsor - Level 2
Retailing:Multi-Channel
Contributed Sessions

2 Covid-19, Inflation, and Consumers' Grocery Channel Choice

Jia Li[1], Charles Moul[2], [1]Wake Forest University, Winston Salem, NC, [2]Miami University, Oxford, OH

The past several years has substantive impacts on the supermarkets and grocery stores industry. Among other things, in 2020 the outbreak of the COVID-19 pandemic dramatically accelerated grocery stores' offerings through e-commerce channels such as curbside pickup. To which customer segment the grocery stores' e-commerce offerings generate the biggest impact? A worldwide increase in inflation began in mid-2021. To what extent does the great inflation influence consumers' grocery shopping behavior through the different channels? In this study, we employ a comprehensive sales dataset to address those questions. The long sample period covering pre-pandemic, during the pandemic, and the 2021-2022 inflation surge allows us to study how the great inflation moderates customers' adoption of the new grocery e-commerce channels.

Friday, 10:30AM

FB18

Windsor - Level 2
Retailing:Multi-Channel
Contributed Sessions

3 Digital Disembodiment: The Impact of In-Store Experiences on Competitor Visits

Syagnik Banerjee[1], Fareena Sultan[2], [1]University of Michigan-Flint, Grand Blanc, MI, [2]Northeastern University, Boston, MA, Contact: syban@umich.edu

The coexistence of multiple platforms is challenging for marketers who want to attract customers' attention in order to facilitate recall, recognition, and learning. While retail stores are trying to "slow down" customer visits to expand their in-store dwell times and engage them with physical ambience and inventory, shoppers are often spending that additional time inside the store, dwelling on virtual platforms, including participating in activities such as showrooming. In some categories, premium brands with younger audiences lead with virtual platforms as their dominant channel, whereas economy brands with working class consumers find physical presence to be their dominant channel. When the virtual platform dominates a customer in a retail environment, the ambient stimuli designed to persuade the customer lose their influence. In this paper, the authors explore the following question, "How do dual contexts affect future consumer behavior?" We examine how the degree of "disembodiment" or "dislocation" that the customer experiences within a store due to these dual contexts explains the consequences of this disembodiment on future *competitor* visits. Since more embodied experiences demonstrate greater self-regulation and less impulsive behaviors, such as variety-seeking, does a customer who is distracted from the store ambience, (even though they are physically located closer to the center of the store), visit more competitors than the one who is closer to the boundary of the store, but more engaged with its offerings? We utilize a database of Limited-Service Restaurants from which location-based tweets have been sent out over a 6-month period. We examine how the **physical location of tweets** (proximity to the center of the store) and **virtual congruence of its content** (relevance of the content to the store), interact to result in **future competitor visits**. This study has implications for marketers not only in online/offline interactions in stores, but also in emerging phenomenon such as marketing in immersive virtual worlds, such as gaming and metaverses.

Friday, 10:30AM

FB18

Windsor - Level 2
Retailing:Multi-Channel
Contributed Sessions

4 A Novel Practice in the New Era of Retailing: Understanding the Role of Pop-Up Shops

Yutian Liu[1], Cheng He[2], Qing Liu[2], [1]University of Wisconsin-Madison, Madison, WI, [2]University of Wisconsin-Madison, Madison, WI, Contact: liu747@wisc.edu

The shift in consumer behavior towards online shopping has led to a decline in the competitiveness of traditional brick-and-mortar retail establishments. Pop-up shops, as a new form of retailing, have emerged and gradually universalized as an appealing solution for mall owners and commercial district landlords looking to revitalize their business areas. These strategically designed physical retail spaces with limited operating time, provide a novel blend of omnichannel strategies and have shown their successes in delivering personalized brand experiences and fostering customer connections in marketing practices. This research empirically examines the causal impacts of pop-up shops on traffic and sales from the perspectives of mall owners and permanent stores by leveraging a unique data set from 100 national-led shopping centers in mainland China over a two-year period. The results indicate that, on average, pop-up shops attract more customers to malls with an increased conversion rate in permanent stores. However, not all stores benefit equally, as customer behavior tends to be goal-driven. The authors provide further insights into the heterogeneous effects of pop-up shops and offer potential behavioral explanations for the observed patterns.

Friday, 10:30AM

FB18

Windsor - Level 2
Retailing:Multi-Channel
Contributed Sessions

5 United by Uncertainty: Demand Management for Omnichannel Retailers

Preyas Desai[1], Oded Koenigsberg[2], [1]Duke University, Durham, NC, [2]London Business School, London, United Kingdom. Contact: desai@duke.edu

Modern retailers need to keep adequate inventory of a large number of products under conditions of demand and supply uncertainty. Not having a sufficient inventory of any product—either due to supply chain issues or due to forecasting errors—results not only in lost sales, but also a frustrating experience for consumers. We study the problem of a retailer who faces this two-sided uncertainty and incorporate shopping costs for consumers. We find that even when two products are unrelated (i.e., neither substitutes nor complements), the demand or supply uncertainty about one product affects optimal prices and ordering quantities for the other product. We then examine how the omnichannel strategy interacts with demand management problems. We identify the conditions under which an omnichannel retailer can more effectively meet consumer expectations.

Friday, 10:30AM

FB19

Sandringham - Level 2
Promotion: General
Contributed Sessions

Session Chair

Kay Peters, University of Hamburg, Hamburg, Germany.

Friday, 10:30AM

FB19

Sandringham - Level 2
Promotion: General
Contributed Sessions

1 Disentangling the Role of National Brands and Store Brands and Their Price Positioning on Promotional Conduct and Its Impact on Retail Sales

Kristopher Keller[1], Rajagopalan Sethuraman[2], [1]Kenan-Flagler Business School, Chapel Hill, NC, [2]Southern

Methodist University, Dallas, TX, Contact: rsethura@mail.cox.smu.edu

It is believed that national brands should price promote more often and more deeply than store brands, based on the notion that national brands are typically high-priced and store brands are low-priced. However, the retailscape has changed and retailers now frequently offer both lower-priced national brand and higher-priced (premium) store brands. This prevalence of brands across the price spectrum allows us to empirically disentangle the role of a brand's type (national versus store brand) from the brand's price (high versus low-priced brand) on the retailers' price promotional conduct and address interesting questions: Are high-priced national brands price promoted (discounted) more frequently and more deeply than store brands? If so, is this occurrence because they are national brands or because they are higher priced brands? How does the promotional effectiveness vary across brand types and their price? We address these questions through a comprehensive empirical analysis of scanner data for orange juice in the USA during 2012-19, comprising of 131 million observations covering over 1,000 UPCs and 10,000 stores. Using variation within a UPC, we find that higher-priced national brands are discounted more frequently and more deeply than lower-priced national and store brands and lower-priced national brands are discounted more often than lower-priced store brand. But, higher priced (premium) store brands promote just often as and more deeply than higher-priced national brands. We follow up by estimating the sales impact of price promotions of these brands using fixed effects model and Hausman-style instruments, and find that the promotion effectiveness is inconsistent with observed promotional conduct. The implications of these findings for brand price promotions are discussed.

Friday, 10:30AM

FB19

Sandringham - Level 2

Promotion: General

Contributed Sessions

2 The Effect of Stadium Naming Rights Agreements on Sponsor Sales

John Healey[1], David B. Godes[2], [1]Tulane University, New Orleans, LA, [2]University of Maryland, College Park, MD, Contact: jhealey@tulane.edu

Stadium naming rights sponsorship is a promotional tool that is the subject of an ongoing debate as to its effectiveness. Some commentators and stakeholders claim that naming rights agreements are an effective promotional tool with positive financial effects, while others claim that they are ego-based investments by upper executives with limited promotional effectiveness. However, while there is a literature examining both customers' perceptions of these sponsorship agreements and stock market reactions to their acquisition, there has been very limited research addressing how, or whether, these agreements impact firm sales. One reason for this limited prior research is the well-known challenge in identifying promotional effects in general, made even more difficult in this context, which is characterized by infrequent and relatively low volume investments. In this study, we utilize weekly sponsor sales data related to Major League Baseball (MLB) stadium sponsorship over 14 years, employing a unique identification strategy based on the plausible exogeneity in game scheduling.

Friday, 10:30AM

FB19

Sandringham - Level 2

Promotion: General

Contributed Sessions

3 Promotions to Improve Brand Consideration

Subramanian Balachander, University of California, Riverside, Riverside, CA

Consumer consideration sets are small in many product categories. In durable product markets such as automobiles, search costs can be significant because of the time it takes for consumers to understand what an automobile has to offer and to take a test drive on it. To get their products into the consideration set of more consumers, firms have adopted promotions, some of which can be quite innovative. In this paper, we use analytical models to better understand the relative efficacy of alternative promotions used by firms to increase brand consideration. Initially, we consider the problem of a monopoly firm seeking to expand consideration of its brands through promotions. Subsequently, we consider how competition may impact the efficacy of such promotions.

Friday, 10:30AM

FB19

Sandringham - Level 2

Promotion: General

Contributed Sessions

4 Coverage and Depth of Promotions

Kay Peters[1], Olivier J. Rubel[2], Prasad Naik[2], [1]University of Hamburg, Hamburg, Germany; [2]University of California Davis, Davis, CA

Managers allocate a large share of their marketing efforts to temporary price promotions (TPR). Nielsen suggests that up to 19.5% of sales go into TPR efforts of CPG firms, arriving at $1trn for 2015 globally. The extant marketing literature focuses on quantifying the sales impact of promotion depth, i.e., the relative price reduction in % on the non-promoted price. But price promotions also involve a decision on how many of the consumers to include in the price promotion, measured through promotion coverage. However, no empirical or normative study investigates the sales or profit impact effect of promotion coverage and promotion depth. Promotion coverage and depth jointly drive incremental sales (lift) over expected baseline sales. Practitioners face a dilemma: • Increasing *promotion coverage* expands baseline sales covered by a price promotion, potentially improving the potential for higher lifts. At the same time, it expands the subsidized baseline sales, i.e., the number of units which would have been sold even without the TPR in the stores covered.• Increasing *promotion depth* increases the attractiveness of the TPR to consumers, improving the potential for higher lifts. But higher price promotion depth reduces the margin per unit sold further. Hence, the joint TPR decisions on promotion coverage and promotion depth have distinct and countervailing impacts on sales volumes and subsequent profits. Accordingly, it is not trivial to determine the optimal levels of promotion coverage and depth in a dynamic sales environment. We show that the total promotion effort should increase as the effectiveness of promotion coverage or promotion depth increases, as should be expected. However, contrary to allocating efforts proportional to elasticity, we show managers should allocate more resources to promotion *coverage* (depth) as the effectiveness of promotion *depth* (coverage) increases. We use data sets from a CPG category to show the universal application potential. We estimate the effectiveness of promotion coverage and depth and apply the novel normative insights maximise profits.

Friday, 2PM

FC01

Trade Room- Lobby Level

ML: Text Analysis and Prediction

Contributed Sessions

Session Chair

Ming Chen, University of North Carolina at Charlotte Belk College of Business, Charlotte, NC

Friday, 2PM

FC01

Trade Room- Lobby Level

ML: Text Analysis and Prediction

Contributed Sessions

1 Unlimited Testing: Test Your Emails Without Test Campaigns

Nguyen Nguyen, University of Miami, Miami, FL, Contact: nxn232@miami.edu

Testing email marketing effectiveness is an active research area because email remains an important channel for customer acquisition and retention. Email open rates are a key measure of campaign effectiveness. Scholars identify three predictors of open rates: recipients' characteristics, headline characteristics, and sending time. The industry favored A/B testing has three drawbacks: it takes hours, depletes lists available for main campaigns, and limits testable email versions because of sample size and power requirements. These limitations continue to motivate researchers to build and improve open rate prediction models. While reducing testing time, models developed in marketing use only recipients' past open rates as predictors. By contrast, models in computer science use only email headline characteristics as predictors. Consequently, current models' open rate prediction errors are high. The authors address the limitations of both literature streams and use all three predictors and machine learning to build an Email Open Rate Predictor (EMOP) based on their Universal Emotion Detector (UED). They test EMOP on data from four brands and set state-of-the-art prediction results. Experimental validation shows that EMOP can pick the best headline from a set of professionally generated headlines. Also, UED ranks second at the SemEval 2018 Task 1 E-c competition.

Friday, 2PM

FC01

Trade Room- Lobby Level

ML: Text Analysis and Prediction

Contributed Sessions

2 Ceo Personality, Firm-Generated Content, and Consumer Engagement: Evidence from Twitter

Ming Chen[1], Chunxiao Xue[2], Rongjuan Chen[2], Angela Liu[1], [1]University of North Carolina at Charlotte Belk College of Business, Charlotte, NC, [2]Wenzhou-Kean University, Wenzhou, China. Contact: mchen37@uncc.edu

Existing research suggests that firms increasingly rely on social media to communicate with outsiders, including their customers. For example, it has become common that firms disclose information to the public through their Twitter accounts. However, it is not clear if firm tweets are related to CEO personality. In this study, we explore the relationship between CEO personality and firm-generated content (FGC) based on Twitter. In particular, we use the frequency, sentiment, and topic of tweets to measure content characteristics. We also examine how consumer engagement, in terms of retweeting and liking of FGC, can be enhanced when a firm expresses positive vs. negative sentiments, tweets more vs. less frequently, and addresses certain topics among others. To test our hypotheses, we use the tweet data of approximately 200 firms with nearly 400 CEOs and the conference call transcripts of the sampled firms. Our findings reveal the relationships between CEO personality, FGC and consumer engagement. Finally, we provide practical implications on how firms can leverage social media to maintain and improve brand image and reputation.

Friday, 2PM

FC02

Flagler - Lobby Level

Social Media: Social Media Monitoring II

Contributed Sessions

Session Chair

Chen Lin, 1</sup

Friday, 2PM

FC02

Flagler - Lobby Level

Social Media: Social Media Monitoring II

Contributed Sessions

1 I Blog Therefore I Am: Relational Benefits, Social Support and Blogging Continuance Intention

Ying Ho, Lancy V. I. Mac, Yin Xi Lin, University of Macau, Macau, China. Contact: mc14244@umac.edu.mo

Web bloggers exert powerful influence on online audience as they are generally regarded as more credible than commercial sources, making them an ideal source for brand endorsement. Numerous research has investigated what factors motivate bloggers to blog and engage in more positive blogging behaviors (e.g., share product more frequently, spend more time on product blogging, and continue writing product blogs). While many studies focused on blogger's personal motive (such as altruism, blogger's enjoyment, need for information sharing), very few look specifically at the interaction process of the blogger-reader duo. This study investigates the influence of blogger-reader homophily on blogger's intention to blog, which can be explained by the relational benefits and social support bloggers obtain via blogger-reader interactions. Data were collected from a sample of 200 Chinese bloggers who have shared product/service comments in their personal blogs in popular Chinese online social networks. Results suggest that blogger's perceived homophily with blog readers enhances blogger's perceived relational benefits and positive support from readers. In other words, when a blogger feels blog readers are similar to him/her, the more emotional benefits he/she perceives from interpersonal interactions, which in turn induce higher blogging intention. This highlights the importance of bloggers being able to identify with other fellow online audience that can motivate bloggers to continuously update their posts and find ways to enhance better relationship with them. Managerial implications on how to optimize online social network platforms and firm-sponsored blogs to encourage positive blogging behaviors will be discussed.

Friday, 2PM

FC02

Flagler - Lobby Level

Social Media: Social Media Monitoring II

Contributed Sessions

2 Content Monetization on Social Live Streaming Services

Kane Koh[1], Dai Yao[2], Fang-Chi Lu[1], Liliana Bove[1], Jill Lei[1], [1]The University of Melbourne, Melbourne, Australia; [2]The Hong Kong Polytechnic University, Hung Hom, Hong Kong. Contact: kchiak@student.unimelb.edu.au

Social live streaming services (SLSSs) are synchronous forms of social media that streamers (businesses) can utilize to generate revenue from viewers' (consumers) discretionary paid support. This includes ordinary subscriptions purchased by viewers for their own usage, subscriptions purchased as gifts by viewers for peer viewers (consumer-to-consumer, or C2C), and tips viewers give to streamers during live streams. Understanding how these subscriptions affect tips, and vice versa, alongside the differences between ordinary and C2C subscriptions, are of paramount importance to the success of SLSSs. The authors estimate a panel vector autoregression model with daily-level panel data from 295 Twitch channels across six months. The results show that both ordinary and C2C subscriptions increase viewer tips, with these effects persisting for around three days, indicating that the benefits of subscriptions extend past their face value. Interestingly, C2C subscriptions are stronger in boosting tips. Additionally, both subscriptions increase viewer comments, another important engagement activity in SLSSs. Further moderation analyses show these effects vary with streamer characteristics including gender, genre, channel size and influence. Taken together, this study sheds new light on the interplay between different content monetization methods; especially, C2C subscriptions.

Friday, 2PM

FC02

Flagler - Lobby Level

Social Media: Social Media Monitoring II

Contributed Sessions

3 To Go with or Against the Stream? Investigating the Role of Congruity Between Donation Appeals and Online Chatter Content

Madhav Arora[1], Arnaud De Bruyn[1], Marc Mazodier[1], Sumon Chaudhuri[1], Mainak Sarkar[2], [1]ESSEC Business School, Cergy, France; [2]University of Stavanger, Stavanger, Norway. Contact: madhav.arora@essec.edu

Marketing scholars have widely studied the idea that social media chatter impacts consumer behaviors. Many firms have also started incorporating social media trends in their marketing dashboards. However, when a firm launches a marketing campaign, little is known about the effect of the congruence between the firm's marketing communications (i.e., what the firm advertises) and the social media chatter (i.e., what people talk about). This study explores how the congruity of marketing communication with social media chatter impacts customers' responses. We analyze a unique data set from one of the largest global non-profit organizations. The data set contains a seven-year record of solicitations to donors and their responses to the solicitations in terms of open rates, clicks, and donations. We extract congruency metrics from the joint textual analysis of tweets related to the organization over the same period and the content of email solicitations. Our results suggest that congruity has an inverse U-shaped effect on engagement, i.e., maximum engagement is observed when the campaign message is moderately congruent with the chatter on Twitter

Friday, 2PM

FC02

Flagler - Lobby Level

Social Media: Social Media Monitoring II

Contributed Sessions

4 The Impact of Diversity in Tech-Assisted Online Learning

Chen Lin[1], Yuxin Chen[2], Jeongwen Chiang[3], [1]Fudan University, Shanghai, China; [2]New York University - Shanghai, Shanghai, China; [3]China Europe International Business School, Shanghai, China. Contact: linchen_fd@fudan.edu.cn

Distance learning have created greater inequality for socioeconomically disadvantaged groups (Parolin and Lee 2021). This research finds that such effect is more salient and detrimental when diversity in virtual classroom composition is overlooked. It is well documented that diversity matters in the traditional classroom, as racial, ethnic, gender and other multiple relationships between teachers and students will affect student performance, especially for disadvantaged groups (Dee 2005), one potential mechanism of is through observable social cues and categorization (Mortensen and Hinds 2001). However, existing studies in the online setting seem to show mixed evidences and concerns for endogeneity (Knippenberg et al. 2004). In distance learning or virtual group setting, teachers and students may not know each other's real identity or background. We use a large dataset from a leading online EduTech company, which provides video records of nearly half a million randomly-formed live classes delivered to 250,432 students by 4991

teachers in year 2021. We find that class diversity itself (especially geographic dispersion) hinders learning outcome and creativity in virtual learning, even though teachers' and students' backgrounds are unobserved to each other. However, teachers' support and diversity experience can help mitigate the negative outcome, especially for the socioeconomically disadvantaged students. Managerial and policy implications are discussed for educators on designing effective and inclusive online classes.

Friday, 2PM

FC03

Dupont - Lobby Level
Methods: Big Data and Machine Learning - Data Applications
Contributed Sessions

Session Chair
Daniel McCarthy, Goizueta Business School, Emory University, Atlanta, GA

Friday, 2PM

FC03

Dupont - Lobby Level
Methods: Big Data and Machine Learning - Data Applications
Contributed Sessions

1 Using Meta-Learning in Automatic Demand Forecasts with a Large Number of Products
Marcel Goic, Luis Gutierrez, University of Chile, Santiago, Chile. Contact: mgoic@dii.uchile.cl
Demand analysis is one of the cornerstones of any supply chain management system, and most of the key operational decisions in the supply chain rely on accurate demand predictions. Although there is a large body of academic literature proposing a variety of forecasting methods, there are still important challenges when using them in practice. A common problem is that firms need to decide about thousands of products and the patterns of demand could be very different between them. In this setting, oftentimes there is no single forecasting method that works well for all products. While some autoregressive models might work well in some cases, the demand for other products might require an ad-hoc identification of trend and seasonality components. In this chapter, we present a methodology based on meta-learning that automatically analyzes several features of the demand to identify the most suitable method to forecast the demand for each product. We apply the methodology to a large retailer in Latin America and show how the methodology can be successfully applied to thousands of products. Our analysis indicates that this approach significantly improves the previous practices of the firm leading to important efficiency gains in the supply chain.

Friday, 2PM

FC03

Dupont - Lobby Level
Methods: Big Data and Machine Learning - Data Applications
Contributed Sessions

2 Economic Value of Visual Product Characteristics
Ankit Sisodia, Yale University, New Haven, CT, Contact: ankit.sisodia@yale.edu
Demand models typically use structured data for estimating the value of product characteristics. However, for several product categories such as automobiles, consumers emphasize that visual characteristics of the product are significant demand drivers. Since visual characteristics are typically in high-dimensional unstructured data (e.g., product images), this poses a challenge to incorporate them in demand models. We introduce a method that enables estimation of demand using visual characteristics, by building on the BLP demand model with recent advances in disentangled representation learning Our method also overcomes the challenge of not having supervised signals, which are required for good disentanglement, by using the demand model as supervisory signal. We discover independent and human interpretable visual characteristics directly from product image data, while simultaneously estimating equilibrium demand in a competitive automobile market in the UK. We conduct a counterfactual analysis using a recent dramatic change in the visual design language of BMW cars, and show our predicted results align with actual changes in BMW market share. To our best knowledge, this work is the first to link visual product characteristics with demand-in other words, to quantify the economic value of design.

Friday, 2PM

FC03

Dupont - Lobby Level

Methods: Big Data and Machine Learning - Data Applications

Contributed Sessions

3 Estimating the Long-Term Impact of Major Events on Consumption Patterns: Evidence from Covid-19

Shin Oblander[1], Daniel M. McCarthy[2], [1]Columbia University, New York, NY, [2]Goizueta Business School, Emory University, Atlanta, GA, Contact: daniel.mccarthy@emory.edu

We propose a general and flexible methodology for inferring the time-varying effects of a discrete event on consumer behavior. Our method enables analysis of events that span the target population being analyzed such as the COVID-19 pandemic, leaving no contemporaneous "control group", by comparing the purchasing behavior of cohorts acquired at different times. Our method applies non-parametric age-period-cohort (APC) models, commonly used in sociology but with limited adoption in marketing, in conjunction with an event study approach. We use this method to infer how the pandemic has affected 12 online and offline consumption categories. Our results suggest that the pandemic initially drove significant spending lifts at e-commerce businesses at the expense of brick-and-mortar alternatives. After two years, however, these changes have largely reverted. We observe significant heterogeneity across categories, with more persistent changes in subscription-based categories and more transient changes in categories based on discretionary purchases, especially those of durable goods.

Friday, 2PM

FC04

Tuttle - Lobby Level

Advertising: General I

Contributed Sessions

Session Chair

Yun Wang, Baruch College, City University of New York, New York, NY

Friday, 2PM

FC04

Tuttle - Lobby Level

Advertising: General I

Contributed Sessions

1 Empirical Study on Bounced Clicks Versus Multi-Page Clicks in Display Advertising

Jaewon Choi[1], Duk Bin Jun[1], Sungho Park[2], [1]KAIST College of Business, Seoul, Korea, Republic of; [2]Seoul National University, Seoul, Korea, Republic of.

The click behavior of users has been frequently used to measure the effectiveness of online display advertising campaigns. This study categorizes clicks into bounced clicks, where no additional user action is involved after the click, and multi-page clicks, which generate additional actions after the click, resulting in a multi-page session, and then examines the distinctive effects of two different types of clicks. We investigated whether bounced clicks are effective in generating conversions (i.e., purchases in our context) and measured the varying effectiveness of the two types of clicks. Moreover, we examined which factors influenced the occurrence of multi-page clicks versus bounced clicks. Using individual-level clickstream data from an actual display advertising campaign, we found that bounced clicks had a significantly positive impact on conversion, but multi-page clicks were approximately twice as effective as bounced clicks. We also found that user-specific, contextual, and environmental factors critically influenced the occurrence of multi-page clicks versus bounced clicks. Furthermore, using a simple empirical application, we illustrate that advertisers can substantially benefit from incorporating the varying effectiveness of bounced clicks and multi-page clicks to target users. Finally, we discuss the theoretical and practical implications of our findings.

Friday, 2PM

FC04

Tuttle - Lobby Level

Advertising: General I

Contributed Sessions

2 A Systematic Review and Research Agenda of In-Feed Native Advertising

Jun Yan[1], Chenying Hai[1], Zhen Li[2], Yaping Chang[1],

[1]Huazhong University of Science and Technology, Wuhan, China; [2]Kansai University, Osaka, Japan.
This study first applies a bibliometric analysis of 147 articles on in-feed native advertising from 2014 to 2022, mapping a systematically visual knowledge structure, highlighting the hotpots and trends transferred in this field. Then, the authors conducted a text analysis reviewing the existing topics and findings of in-feed native advertising including disclosure strategy, privacy and regulations, ad-media congruence, ad placement strategy, evaluation indicators, etc. Finally, suggestions for future research are given with a keen on new technologies such as AI and new form of native advertising like short videos, games, and livestream e-commerce. The authors generalize three fundamental characteristics of in-feed native ads as nativeness, interactivity and personalization, build up three models for future research examining the double-edged sword effects brought by them. The authors also point out the potentials of cross-media synergies of in-feed native advertising to optimize the ad effectiveness, call for attentions on utilizing new technology like AI to drive the growth of in-feed native ads.

Friday, 2PM

FC04

Tuttle - Lobby Level
Advertising: General I
Contributed Sessions

3 The Impact of Sponsored Ads on Organic Listings: Role of Product Similarity and Visual Appeal

salar nozari[1], Ying Xie[2], Shaojie Tang[3], Shuzhang Cai[1], [1]The university of Texas at Dallas, Dallas, TX, [2]University of Texas-Dallas, Richardson, TX, [3]University of Texas-Dallas, Mckinney, TX, Contact: salar.nozari@utdallas.edu
This study focuses on understanding the impact of sponsored ads on the performance of organic listingsin e-commerce platforms. The objective is to identify the factors that influence the click-through andconversion rates of organic listings in the presence of sponsored ads. To do this, we draw from theexisting choice literature and propose that two key product characteristics play a critical role in theprocess - the similarity between the advertised products and those in the organic search listings and thevisual appeal of the product presentations. To test our hypothesis, we use a large click-stream dataset tobuild and estimate a choice model. This allows us to quantify the effects of product similarity and visualappeal on the click-through and conversion rates. Then we conduct a randomized field experiment tovalidate our findings and ensure that the results are robust. The results of this study contribute to abetter understanding of the mechanism driving the interdependence between sponsored ads andorganic listings. We also discuss the practical implications of our findings for both e-commerce platformsand third-party sellers, offering insights that can be used to improve the performance of organic listingsin the presence of sponsored ads.

Friday, 2PM

FC04

Tuttle - Lobby Level
Advertising: General I
Contributed Sessions

4 Presenting Products'Aesthetic Design in Advertisements

Yun Wang[1], Yan Liu[2], [1]Baruch College, City University of New York, New York, NY, [2]Texas A&M University, College Station, TX, Contact: yun.wang@baruch.cuny.edu
Products' aesthetic design is an important factor that drives customers' purchase decisions. Yet, how to advertise products' aesthetic design has rarely been studied. Should firms present products' aesthetic design along with informational advertising content introducing other product attributes or emotional advertising content that elicits positive feelings in potential customers? How should firms incorporate design characteristics - segment prototypicality and brand consistency - into their decisions on advertising content and the use of visual advertising cues (e.g., product design and logo)? In this study, we empirically investigate how advertisements interacting with design characteristics influence consumer preference, using a unique dataset consisting of 51 car models and 14,813 TV commercials in the United States from 2014 to 2018. We use deep-learning algorithms to identify informational, emotional, and visual cues used in TV commercials and a morphing technique to quantify products' aesthetic design. We integrate a state space model with a random coefficient demand model to capture the dynamics in advertising effectiveness and brand preference. We find that firms should use more informational advertising content when their products carry brand-consistent designs. For products with segment-prototypical designs, firms should decrease the time duration in which the product design and logo are shown when they use emotional advertising content.

Friday, 2PM

FC05

Gusman - Lobby Level
Marketing and Consumer Welfare III
Special Session

Session Chair
Michael Patrick Palazzolo, University of California - Davis, Davis, CA

Friday, 2PM

FC05

Gusman - Lobby Level
Marketing and Consumer Welfare III
Special Session

1 **Information Search and Discrimination**
A. Yesim Orhun, University of Michigan, Ann Arbor, MI
We examine whether information search closes or widens the hiring gap in a statistical discrimination context.

Friday, 2PM

FC05

Gusman - Lobby Level
Marketing and Consumer Welfare III
Special Session

2 **What Makes Fake-News Sharers Tick? Textual Cues Extracted from Language Can Help Predict and Mitigate Fake-News Sharing**
Simon Blanchard, Georgetown University, Washington
The spread of misinformation is a global concern for protecting democracy, public health, and consumers. Complementary to scholars who have attempted to reduce misinformation by identifying fake-news publishers, inaccurate information, and the markers of fake-news content, we take a multi-method approach to study how consumers' own social media content (e.g., past posts) can provide clues as to whether they will share fake-news - and how to reduce the odds that they do so. In Study 1, we provide a comprehensive exploratory examination of textual markers in the language of past tweets that can help distinguish fake-news sharers from others in the misinformation ecosystem. In Study 2, we pre-train and use a machine learning classifier to show that textual cues help predict fake-news sharers beyond what is possible using only inferrable socio-demographics. In Study 3, we use the findings from Studies 1 and 2 and introduce a survey methodology that enables us to combine survey participant responses with their Twitter information and posts. We test two promising fake-news sharing mitigation interventions (Study 3A: using power-related words in a browser-extension ad copy; Study 3B: reducing the anxiety of those flagged as likely fake-news sharers). Our research encourages marketing scholars and practitioners to analyze large unstructured datasets and uncover interventions to reduce the spread of misinformation.

Friday, 2PM

FC05

Gusman - Lobby Level
Marketing and Consumer Welfare III
Special Session

3 **Consumer Versus Investor Responses to Firm'S Diversity Targets and Csr Initiatives**
Beth Fossen[1], Dionne Nickerson[1], Karen Wallach[2], [1]Indiana University, Bloomington, IN, [2]The University of Alabama in Huntsville, Huntsville, AL, Contact: bfossen@indiana.edu
Despite increased stakeholder expectations of firms' diversity efforts, progress in this domain remains challenging for many firms, and limited research has explored the effectiveness of different diversity efforts across multiple stakeholders. In this research, we investigate the impact of two crucial firm diversity efforts - corporate social responsibility (CSR) initiatives and diversity targets - on the responses of two key stakeholder groups - investors and consumers. Using an event study methodology, we examine over 700 CSR initiatives by 41 firms from 2015 to 2020. We assess consumer reactions through online word-of-mouth (WOM) about the CSR initiatives on Twitter and measure investor reactions using firm cumulative abnormal returns (CAR). Our results show that CSR initiatives by firms that have set diversity targets spur significantly less positive WOM about the firms. However, this negative impact on positive consumer WOM about the firms is reversed when the CSR initiative is about diversity. Our findings also show that while investor responses to firms' CSR initiatives do not vary

based on whether the firm has set diversity targets during 2015-2019, CAR decreases following CSR diversity initiatives released by firms with diversity targets in 2020.

Friday, 2PM

FC06

Marti - Lobby Level
IV-free Causal Inference
Special Session

Session Co-Chair
Fan Yang, 1</sup

Friday, 2PM

FC06

Marti - Lobby Level
IV-free Causal Inference
Special Session

Session Co-Chair
Rouven Haschka, 1</sup

Friday, 2PM

FC06

Marti - Lobby Level
IV-free Causal Inference
Special Session

Session Chair
Yi Qian, 1</sup

Friday, 2PM

FC06

Marti - Lobby Level
IV-free Causal Inference
Special Session

1 Instrument-Free Causal Inference and Marketing Applications

Fan Yang[1], Yi Qian[2], hui xie[3], [1]NEOMA Business School, Reims, France; [2]University of British Columbia, Vancouver, BC, Canada; [3]Simon Fraser University, Vancouver, BC, Canada. Contact: fan.yang@neoma-bs.fr

The classical econometric method to handle regressor endogeneity requires instrumental variables that must satisfy the stringent condition of exclusion restriction. We use the statistical tool copula to directly model the dependence among the regressors and the error term, and abstract information from the existing regressors as generated regressors added to the outcome regression. Our proposed method extends the existing copula method to a more general setting, and is straightforward to use and broadly applicable. We theoretically prove the consistency and efficiency of our method, and demonstrate the performance via simulation studies and an empirical application.

Friday, 2PM

FC06

Marti - Lobby Level
IV-free Causal Inference
Special Session

2 Optimal Copula Estimation of Endogenous Moderation and Nonlinear Effects

Yi Qian[1], Hui Xie[2], Anthony Koschmann[3], [1]UBC, Vancouver, BC, Canada; [2]SFU, Vancouver, BC, Canada; [3]Eastern Michigan University, South Lyon, MI, Contact: yi.qian@sauder.ubc.ca

Causal inference in empirical studies is often challenging because of the presence of endogenous regressors. The classical approach to the problem requires using instrumental variables that must satisfy the stringent condition of exclusion restriction. A forefront of recent research is a new paradigm of instrument-free methods for handling endogenous regressors. Park and Gupta (Marketing Science, 2012) proposed an instrument-free estimation using copula that has been increasingly used in practical applications to address endogeneity bias. A relevant issue not studied is how to handle the higher-order terms (e.g., interaction and quadratic terms) of endogenous regressors using the copula approach. Recent applications of the approach have used disparate ways of handling these higher-order endogenous terms with unclear consequences. We show that once copula correction terms for the main effects of endogenous regressors are included as generated regressors in the model, there is no need to include additional correction terms for the higher-order terms. This simplicity in handling higher-order endogenous regression terms is a merit of the instrument free copula bias-correction approach. More importantly, adding these unnecessary correction terms has harmful effects and leads to sub-optimal solutions of endogeneity bias, including finite-sample estimation bias and substantially inflated variability in estimates.

Friday, 2PM

FC06

Marti - Lobby Level
IV-free Causal Inference
Special Session

4 **Bayesian Inference for Joint Estimation Models Using Copulas to Handle Endogenous Regressors**
Rouven Haschka, University of Cologne, Cologne, Germany.
This study proposes a Bayesian approach for exact finite-sample inference of an instrument-free estimation method that builds upon joint estimation using copulas to deal with endogenous covariates. Although copula approaches with applications to handle regressor-endogeneity have been frequently used, extant studies base inference on a frequentist basis, build on a-priori computed estimates of marginal distributions of explanatory variables, and use bootstrapping to obtain standard errors. Furthermore, empirical identification checks are hardly possible so far. Unlike frequentist models, the proposed Bayesian approach facilitates exact statistical inference (e.g., credible intervals) through computationally efficient Markov chain Monte Carlo simulation techniques and does not require asymptotics. The approach is one-step, in which neither marginal distributions nor between-regressor correlations are considered fixed, nor do they have to be estimated a-priori; regression coefficients, error variance, copula correlation matrix, and probability masses formalising marginal distributions of explanatory variables are considered random and sampled simultaneously. Simulation experiments assess the finite sample performance of the proposed estimator and demonstrate exactness of Bayesian inference. As a particular merit, we show that model (non)identification can be checked by assessing convergence of Markov chains and testing based on posterior draws, which offers valuable diagnostic tools in empirical applications. Practical applicability is demonstrated via an empirical example.

Friday, 2PM

FC07

Merrick 1 - Lobby Level
Influencer Marketing Track: Special Session 7
Special Session

Session Co-Chair
Maximilian Beichert, Mannheim, Germany.

Friday, 2PM

FC07

Merrick 1 - Lobby Level
Influencer Marketing Track: Special Session 7
Special Session

Session Chair
Andreas Lanz, HEC Paris, Paris, France.

Friday, 2PM

FC07

Merrick 1 - Lobby Level
Influencer Marketing Track: Special Session 7
Special Session

1 **Interdependent Creators of Engagement: The Role of Cofollowership Patterns and Content Similarity in Selecting Influencers**
Tomomichi Amano, Mengjie Cheng, Elie Ofek, Harvard Business School, Boston, MA, Contact: eofek@hbs.edu
Brands increasingly seek to leverage influencer marketing as part of their communication campaigns. However, brands' influencer selection problem is difficult because influencers are large in number and highly heterogeneous. Moreover, industry practices provide rules of thumb that may not fully account for possible interdependencies among influencers. We propose two theoretically-motivated dimensions of influencer interdependence: audience overlap and content similarity. We then show how accounting for these two measures can impact follower engagement with influencers' posts. We further contextualize our findings by partnering with a marketing agency and use our model to predict the

engagement level with a campaign. Our analysis reveals that the agency would have mischaracterized engagement by as much as 27% had it used a model that did not account for interdependencies, and that the rank-ordering of candidate influencer sets based on expected performance could substantially differ. To our knowledge, this is the first empirical attempt to study interdependency dynamics among influencers. We discuss the managerial implications of our findings for brands planning influencer campaigns, and offer guidance on how to evaluate an influencer set.

Friday, 2PM

FC07

Merrick 1 - Lobby Level

Influencer Marketing Track: Special Session 7

Special Session

2 Does It Pay to Increase Public Messages in Nano-Influencer Campaigns? Investigating the Optimal Public Message Share for Sales and Return-On-Investment

Ulrike Phieler[1], Florian Dost[2,3], [1]Vienna University of Economics and Business, Vienna, Austria; [2]Brandenburg University of Technology, Cottbus, Germany; [3]Alliance Manchester Business School, Manchester, United Kingdom. Contact: ulrike.phieler@wu.ac.at

Online influencer marketing has matured, and many managers now seek better performance with nano-influencers in seeding campaigns. Compared to macro-influencers, nano-influencers create more *private* (direct online or offline) brand messages that supposedly deliver more "persuasive punch". But such private messages lack the usual online tracking per message, forcing managers to ask nano-influencers for self-reports, or to estimate sales at a campaign level if they want to assess their own decisions. Therefore, little is known about how to set up effective nano-influencer campaigns: does it pay to increase the public message share in nano-influencer activity, in order to benefit from private and public influencer activity? Or does it defeat its purpose, diminishing nano-influencers' persuasiveness and total campaign results? This study analyses a unique campaign-level data set of various seeded marketing campaigns comprising the activity of 700,000 nano-influencers. We model the impact of nano-influencers' activity on incremental sales and return-on-investment (ROI) at the campaign level. To answer our questions, we include effects of public message share and optimal public message share and their interaction with activity; instrumenting both for identification, and controlling for campaign, marketing, and brand context. We find conditional optimal public message shares for both sales and ROI. The average campaign benefits most when increasing influencer activity (through design or incentives) at public message shares between 4% and 5%. This shows the importance of striking the right balance between nano-influencers' online and offline activity, and suggests a similar balance for combining nano- and macro-influencers in future campaign formats.

Friday, 2PM

FC07

Merrick 1 - Lobby Level

Influencer Marketing Track: Special Session 7

Special Session

3 The Interplay of Influencer Status and Intimacy in Generating Sales: Evidence from Secondary Data and Three Field Experiments

Maximilian Beichert[1], Andreas Bayerl[1], Jacob Goldenberg[2], Andreas Lanz[3], [1]University of Mannheim, Mannheim, Germany; [2]Reichman University, Herzliya, Israel; [3]HEC Paris, Paris, France.

Due to the increased use of ad blockers, growing banner blindness, and an online environment that makes personalized advertising more and more difficult (e.g., iOS 14), the ongoing battle for consumers' attention on the Internet remains fierce. Marketers increasingly believe that influencer marketing is an efficient option for seeding. However, the recent managerially relevant question of whether to target low- or high-status influencers in terms of number of followers is still unresolved. In this article, the authors' goal is to answer this question by considering for the first time the whole influencer-marketing funnel, i.e., conversions from followers on user-generated content networks (e.g., on Instagram), to reached followers, to engagement with the sponsored posting, to actual revenue. In line with the rationale that with increasing status of an influencer, the trust relationships with followers become less intimate, the authors hypothesize and show that low-status seeding outperforms high-status seeding by a factor of nine. A mediation analysis reveals that indeed intimacy can explain 52% of the negative relationship between the influencer status and the revenue per follower. These two findings are derived from secondary sales data of 366,120 purchases and results of three field experiments with hundreds of influencers, which delivered convergent validity of the relevant findings.

Friday, 2PM

FC07

Merrick 1 - Lobby Level
Influencer Marketing Track: Special Session 7
Special Session

4 Mega Or Micro? Influencer Selection Using Follower Elasticity

Zijun Tian, Ryan Dew, Raghuram Iyengar, University of Pennsylvania, Philadelphia, PA, Contact: zjtian96@sas.upenn.edu

Despite the explosive growth of influencer marketing, wherein companies sponsor social media personalities to promote their brands, there is little research to guide companies' selection of influencer partners. One common criterion is popularity: while some firms sponsor "mega" influencers with millions of followers, other firms partner with "micro" influencers, who may only have several thousands of followers, but may also cost less to sponsor. To quantify this trade-off between reach and cost, we develop a framework for estimating the follower elasticity of impressions, or FEI, which measures a video's percentage gain in impressions corresponding to a percentage increase in the follower size of its creator. Computing FEI involves estimating the causal effect of an influencer's popularity on the view counts of their videos, which we achieve through a combination of a unique dataset collected from TikTok, a representation learning model for quantifying video content, and a machine learning-based causal inference method. We find that FEI is always positive, but often nonlinearly related to follower size, suggesting different optimal sponsorship strategies than those observed in practice. We examine the factors that predict variation in these FEI curves, and show how firms can use these results to better determine influencer partnerships.

Friday, 2PM

FC08

Merrick 2 - Lobby Level
Ed-Fintech Solutions for Small Businesses in Developing Countries
Special Session

Session Co-Chair
Rupali Kaul, Stanford University, Stanford, CA

Friday, 2PM

FC08

Merrick 2 - Lobby Level
Ed-Fintech Solutions for Small Businesses in Developing Countries
Special Session

Session Chair
Juan Espinosa Balbuena, London, United Kingdom.

Friday, 2PM

FC08

Merrick 2 - Lobby Level
Ed-Fintech Solutions for Small Businesses in Developing Countries
Special Session

1 Does Customer Feedback Lead to Spillover Effects Through Firm Improvements?

Rupali Kaul[1], Stephen J. Anderson[2], Pradeep Chintagunta[3], Naufel Vilcassim[4], [1]Stanford University, Stanford, CA, [2]McCombs School of Business, University of Texas, Austin, TX, [3]University of Chicago, Chicago, IL, [4]Dept of Management, London School of Economics, London, United Kingdom.

Academic researchers, as well as industry practitioners, recognize that the voice of the customer is a powerful tool that businesses can leverage to enhance their performance. Thus companies routinely solicit and obtain feedback from a subset of their customers. Whether the feedback then has any effect on the non-solicited customers depends both on whether the company makes organization-level changes, as opposed to responding just to the solicited customers, and whether these changes, if any resonate with those customers. This research seeks to assess the impact of customer feedback on firm learning about dimensions to improve and as a result, understand the spillovers it can cause to non-solicited customers. We conduct a randomized controlled field experiment in Rwanda to study the impact of customer feedback on a sample of small-scale entrepreneurs. We hypothesize that customer feedback could operate through two broad mechanisms - (1) the act of seeking feedback itself could have a direct effect on the customers who were reached out to, or (2) the feedback could cause firms to learn from it and respond by improving the products and

experiences they offer, which in-turn could cause spillovers across customers. Our study attempts to tease these effects apart.The results from the experiment show that customer recall of the business increases by about 38% and purchase increases by 77% for customers who were not engaged in the feedback process. We present evidence to suggest that these spillover effects of feedback are driven by changes made by the firms in response to the customer feedback that they were provided. Finally, we also show that customer feedback led to an overall6positive and significant impact on the performance of the treatment firms with a 62% improvement in sales and 54% improvement in profits relative to the control firms while showing suggestive evidence of diminishing marginal returns to feedback. Through this study we also elucidate a simple feedback seeking process which can be adopted by small businesses to improve their performance. These findings can guide firms in leveraging the information available with their customer base to improve the products/experiences they offer and drive greater profits.

Friday, 2PM

FC08

Merrick 2 - Lobby Level

Ed-Fintech Solutions for Small Businesses in Developing Countries

Special Session

2 Is (Smart) Technology Really Making Us Dumber? Marketing Analytics Improves the Mental, Managerial and Financial Performance of Entrepreneurs

Stephen J. Anderson[1], Pradeep Chintagunta[2], Rupali Kaul[3], Naufel Vilcassim[4], [1]McCombs School of Business, University of Texas, Austin, TX, [2]University of Chicago, Chicago, IL, [3]Stanford University, Stanford, CA, [4]Dept of Management, London School of Economics, London, United Kingdom.

The literature in economics on the interplay between technology and human capital suggests that the adoption and usage of technology can potentially have a positive effect on the human capital of users - for example, by rearranging connections in their brains. On the other hand, due to issues such as analysis paralysis, confirmation bias, information overload and brain drain, other research has suggested a negative effect of technology. This paper sheds light on this tension by studying the impact of a particular Ed-Fintech solution (a marketing analytics technology) on the performance of emerging market firms and their entrepreneur-managers. We test the efficacy of this technology using a randomized controlled field experiment in which 550 Rwandan firms were assigned to one of three groups: Treatment (received a marketing analytics solution for nine months); Placebo (only received a smartphone and mobile internet access without any analytics); or Control (did not receive any intervention). We find novel evidence of changes at an individual entrepreneur level. First, technology interaction is initially low for treatment entrepreneurs, but by the third month an organic feedback loop sets in that raises daily usage rates to 90-95% as these managers become more reliant on data and analytics in their businesses. Second, as per objective ability and psychological tests, the Ed-Fintech solution has a positive causal impact on the mental performance of entrepreneurs (i.e., their aptitude improves in areas related to reasoning, memory, logic and calculations). In addition, greater interaction with the marketing analytics solution also leads to changes at an overall business level. One, the managerial performance of firms improves through spillovers from the online technology to offline business practices in accounting and product management. Two, we find a positive effect of Ed-Fintech8(with marketing analytics) on the financial performance of firms as the treatment group increases monthly sales by 36.4% and monthly profits by 29.2% (on average). Taken together, these results offer new insights for stakeholders interested in enhancing productivity within businesses, increasing firm growth, or achieving greater financial inclusion.

Friday, 2PM

FC08

Merrick 2 - Lobby Level

Ed-Fintech Solutions for Small Businesses in Developing Countries

Special Session

3 Encouraging E-Payment Adoption by Retailers: Evidence from a Field Experiment

Shreya Kankanhalli[1], Stephen J. Anderson[2], Leonardo Iacovone[3], Sridhar Narayanan[4], [1]Cornell University, Itaca, NY, [2]McCombs School of Business, University of Texas, Austin, TX, [3]World Bank, Washington, DC, [4]Stanford University, Stanford, CA

Across developing economies, cash is the conduit for retail transactions. Policymakers, multinational product manufacturers and marketers of electronic payment systems are interested in understanding how to stimulate the growth of electronic payments in emerging markets. In this paper, we investigate what hinders the adoption of e-payment technology by traditional retailers, in particular, whether barriers to adoption are technological, informational or financial in nature. We do this through a rigorous field experiment, where we randomize 1200 small retailers in Guadalajara, Mexico into four experimental groups: i) N = 300 firms receive an e-payment technology kit; ii) N = 300 firms receive the e-payment technology kit and informational materials to market e-payments to customers; iii) N = 300 firms receive the e-payment technology kit, informational materials, and a 4-month transaction fee waiver; and iv) N = 300 firms constitute a control group who receive no intervention. By comparing the adoption rates of the different treatment groups, we are able to cleanly analyze which barriers are critical to technology adoption. We additionally aim to study the impact of these interventions on e-payment adoption by neighboring retailers, and business performance.

Friday, 2PM

FC08

Merrick 2 - Lobby Level

Ed-Fintech Solutions for Small Businesses in Developing Countries

Special Session

4 Using Video Data to Infer Firms' Marketing Strategies

Stephen J. Anderson[1], Juan Espinosa Balbuena[2], Frank Germann[3], Sridhar Narayanan[4], [1]McCombs School of Business, University of Texas, Austin, TX, [2]London Busine, London, United Kingdom; [3]University of Notre Dame, Notre Dame, IN, [4]Stanford University, Stanford, CA

Assessing the value proposition of a firm presents a significant challenge, particularly in developing countries where access to qualified experts may be limited. Despite this, there is a growing interest among academics, practitioners, and policymakers to understand the strategies employed by small-scale entrepreneurs to position their firms in the market. In this study, we aim to capture the quality of a firm's value proposition by recording entrepreneurs answering questions related to their understanding of customers, competition, and companies (the 3Cs of marketing). The collected data will be evaluated by enumerators to investigate the underlying mechanisms that drive sales performance. For instance, we will examine whether improvements in customer interactions, resulting from the program, lead to a more accurate perception and articulation of the firm's value proposition, ultimately resulting in increased access to finance. We intend to use the diverse data collected, including videos, audio, and transcripts, to develop a conceptual model and train algorithms to establish a scalable method that could be of significant value to policymakers. This research aims to contribute to the broader marketing literature by offering insights into the relationship between value proposition and access to finance, particularly in the context of emerging markets.

Friday, 2PM

FC09

Grove - Lobby Level

Text and Image: Text Analytics

Contributed Sessions

Session Chair

Chen Jing, Boston University, Malden, MA

Friday, 2PM

FC09

Grove - Lobby Level

Text and Image: Text Analytics

Contributed Sessions

1 Designing Impactful Acknowledgments to Improve Donor Retention: A Deep Learning Approach

Jiyeon Hong[1], Joonhyuk Yang[2], Sunghan Ryu[3], [1]George Mason University, Fairfax, VA, [2]University of Notre Dame, Notre Dame, IN, [3]Shanghai Jiao Tong University, Shanghai, China. Contact: jhong38@gmu.edu

Donor attrition has been one of the critical problems in the non-profit sector. Most non-profits provide acknowledgments in the form of thank-you letters in order to address the problem and nurture long-term relationships with donors. Researchers have studied the impact of such acknowledgments on donor behavior and retention. However, little attention has been paid to how to express gratitude properly to foster donor relationships more effectively. In this study, we propose a framework to analyze linguistic features of such written acknowledgments. We analyze a large-scale dataset of written acknowledgments leveraging state-of-the-art technology in natural language processing and identify what makes them more impactful for donor retention at both document- and sentence-levels. We aim to validate our findings in an experimental setting and further provide managerial insights into how to write more impactful thank-you letters.

Friday, 2PM

FC09

Grove - Lobby Level
Text and Image: Text Analytics
Contributed Sessions

2 Advertising Contents vs. User-Generated Contents: How to Capture the Effect of Advertising Contents on the Consumers' Mind

Jiwon Baek[1], Myeongjin Song[1], Tae Ho Song[2], [1]Pusan National University, Pusan, Korea, Republic of; [2]Pusan National University, Busan, Korea, Republic of. Contact: g1baek@pusan.ac.kr

This study aims to propose a unified framework for measuring advertising message effectiveness in key consumer metrics: mind and behavior. The proposed framework conjointly analyzes the coherence rate of firm's multi-media advertising message, and how this coherency influences advertising message transference in consumer's mind. We further investigate the importance of an integrated advertising message strategy by validating the relationship between the transference rate of advertising messages in consumer's mind and consumer purchase behavior. To illustrate our framework, we provide an empirical application of 3 brands in the telecommunications market. For our research, we collected firm's advertising messages, consumer-generated contents from Jan 1st, 2012, to Dec 31st, 2021. We adopted a natural language processing method to refine these data for further analysis. After pre-processing the data, to extract the coherence rate of advertising messages by each brand we employed structural methods such as Semantic Network Analysis, and LDA Topic Modeling. By adopting these methods, we were able to analyze substantial amount of text data while preserving its semantic nature. Lastly, we quantified the effect of advertising message strategy by validating the relationship between transference rate and consumer purchase behavior. By unifying these procedures, we were able to investigate the advertising message effectiveness in terms of advertising message transference in consumer's mind and the marginal effectiveness of advertising. We propose a structured and easy-to-follow framework that is practical, enabling firms to investigate the effectiveness of their advertising message strategy in real-time with combining the advantages of qualitative and quantitative methods.

Friday, 2PM

FC09

Grove - Lobby Level
Text and Image: Text Analytics
Contributed Sessions

3 Firm Sociopolitical Performance Radar

Chen Jing, Dokyun Lee, Shuba Srinivasan, Susan Fournier, Boston University, Boston, MA, Contact: cjing1@bu.edu

The increasing frequency and ever evolving nature of sociopolitical issues, such as the 2017 #MeToo movement, the Covid-19 pandemic, and the recent overturn of Roe v. Wade, has made it imperative for firms to take a stance on these issues. While taking a sociopolitical stance can signal a firm's responsible behavior, these issues often result in polarized responses from stakeholders, and the long-term effects of such polarization on firms are not well understood. To address this, we present an approach for measuring a firm's sociopolitical performance through social media data. Our method employs state-of-the-art language models to analyze the zeitgeist surrounding the most controversial sociopolitical issues, drawing on news and social media sources. Furthermore, we propose a dynamic algorithmic framework that incorporates Reinforcement Learning with Human Feedback to continuously monitor trending sociopolitical issues and rank firms based on their sociopolitical performance as seen on social media. Finally, we validate our approach through downstream firm performance tasks.

Friday, 2PM

FC10

Oxford - Level 2
E-Commerce: General I
Contributed Sessions

Session Chair

Bernd Skiera, Goethe University Frankfurt, Frankfurt, Germany.

Friday, 2PM

FC10

Oxford - Level 2
E-Commerce: General I
Contributed Sessions

1 Cross-Platform Subscription Programs

Qi Yu, Singapore Management University, Singapore, Singapore. Contact: qiyu@smu.edu.sg

Cross-platform subscription programs offer customers access to a wide range of benefits across multiple platforms, including online shopping, food delivery, ride-hailing, and more, through a single paid membership program. These programs have become increasingly popular as a tool to enhance customer loyalty and create cross-selling opportunities. Using novel data from a large cross-platform subscription program and a regression-discontinuity design, we examine the impact of the program on customer purchases and service usage. Our findings indicate that the program increases overall purchase and service usage frequency across all platforms, with larger increases for female customers and high-value customers with high spending, frequent purchases, and recent transactions. There is also a significant cross-platform spillover effect, where the addition of program benefits from one platform leads to changes in behavior on other platforms. The implications of these findings for program design are discussed.

Friday, 2PM

FC10

Oxford - Level 2
E-Commerce: General I
Contributed Sessions

2 The Role of Geographic Proximity: How Customer Influencer Value Influence Customer Lifetime Value

Ruichen Ge, Evert de Haan, Peter C. Verhoef, University of Groningen (RUG), Groningen, Netherlands. Contact: r.ge@rug.nl

The purpose of this this study is to empirically test how geographic proximity between customers impact customer lifetime value (CLV) and how firms can use this for targeting decisions. Due to WOM, signaling, and perceived homophily, customers could be influenced by people in their neighborhood (customer influencer value, CIV), which can have an impact on their purchase behavior and thus influence their CLV. We cooperate with an Asian fast-food restaurant chain which has more than 30 physical stores and joined the major food delivery platform apps. Each customer's id, address, gender, as well as each order date, time, size, store address, and platforms are included in our dataset. Using spatial econometric models, we analyzed the online purchasing behavior of 101,614 users between December 1, 2016 and April 30, 2017. Specifically, we explore the effect of geographic distance between customers on customers' purchase recency, frequency, monetary value, and intervals (RFMI), which we in turn link to the customers' CLV. Our preliminary results imply that the spatial effect persists in the online environment and that the spatial effect is more significant at small distances than at large distances, suggesting that customers living in close proximity have similar purchasing behaviors; people 10 meters apart (i.e., neighbors) are more similar than those living 1,000 meters or further apart. In our analyses, we distinguish between the impact of homophily (e.g., customers who live close to each other have similar purchase patterns due to sociodemographics similarity) and social influence (i.e., the behavior of one customer influences other customers). Based on this, we discuss managerial implications in providing and targeting customers in location-based marketing services.

Friday, 2PM

FC10

Oxford - Level 2
E-Commerce: General I
Contributed Sessions

3 Economic Impact of Apple'S App Tracking Transparency Framework (Att)

Lennart Kraft[1], Bernd Skiera[1], Tim Koschella[2], [1]Goethe University Frankfurt, Frankfurt, Germany; [2]Kayzen, Berlin, Germany. Contact: skiera@wiwi.uni-frankfurt.de

Amid the expansion of international privacy regulations, major firms are rolling out their own user privacy initiatives, with significant ramifications for the advertising ecosystem. This study evaluates how app publishers' advertising revenue was affected by one such initiative: Apple's App Tracking Transparency (ATT) framework, introduced with iOS 14.5 in April 2021. ATT requires each app to obtain explicit consent to track users across other publishers' apps; before ATT, such tracking was permitted unless users opted out. We analyze proprietary daily-level data corresponding to billions of ad impressions ("traffic") over 11 months and across 8 countries. We find that, in the USA, ATT reduced the share of trackable (vs. non-trackable) Apple traffic by 70%, from 73.05% to 22.15%. Most of this decline occurred within three months after ATT's introduction, as most users updated their operating systems. This decline corresponds to a 19.41% decrease in publishers' daily advertising revenue from Apple users, representing a 9.82% decrease in daily advertising revenue overall (considering both Apple and Android users). For the remaining countries, ATT's effects on advertising revenue varied substantially (decreases of 1.23%-11.79%); an analysis of the drivers underlying ATT's effects attributes this finding to users' explicit consent rates, that differ substantially across countries, publisher categories, and apps, reflecting users' privacy preference heterogeneity and publishers' ability to mitigate advertising revenue losses.

Friday, 2PM

FC11

Cambridge - Level 2
Social Media: Text Analytics
Contributed Sessions

Session Chair
Vivek Sundar Magesh, NUS, Singapore, Singapore.

Friday, 2PM

FC11

Cambridge - Level 2
Social Media: Text Analytics
Contributed Sessions

1 Does an Emotional Context Enhance the Power of Metaphor in Health and Wellbeing Messaging?

Carina Rasse[1], Wanyin Li[2], Jeannette Littlemore[2], Ellen Wilding[2], [1]University of Klagenfurt, Austria, Klagenfurt, Austria; [2]University of Birmingham, Birmingham, United Kingdom. Contact: carina.rasse@aau.at

Metaphors provide information about the rich detail of human emotional experience in a way that literal language does not (Colston & Gibbs 2021). For this reason, metaphors have been shown to have an emotional effect on readers (Samur et. al. 2015).

We employed an embodied response technique to investigate whether the effectiveness of health-related messaging is enhanced by (a) the presence of metaphor, (b) the presence of emotion. Participants (N=120) were native speakers of English, aged 18+. The items used in the study were based on metaphors found in authentic online promotions for healthcare products and services. The emotions referred to in the items have been found to be associated with the health conditions involved. We investigate the different effects that messages had on viewers when presented in four different contexts:
(1) non-emotional context (literal): e.g., Experiencing shortsightedness? Consider having laser surgery to improve your eyes.
(2) emotional context (literal): Short sightedness making you feel stressed? Consider having laser surgery to improve your eyes.
(3) non-emotional context (metaphorical): Short sightedness making you feel stressed? Consider having laser surgery to improve your eyes.
(4) emotional context (metaphorical): Short sightedness making you feel stressed? Consider having laser surgery to release your eyes.
We hypothesized that condition 4 would be most effective, condition 1 would be the least effective, and conditions 2 and 3 equally effective.Findings from this study reveal which types of health-related messages are particularly effective. These insights are likely to be relevant to different communication stakeholders, such as creators of health campaigns or practitioners who want to effectively promote certain medical surgeries (laser eye surgery) or treatments (regular use of eye drops).
*references upon request

Friday, 2PM

FC11

Cambridge - Level 2
Social Media: Text Analytics
Contributed Sessions

2 How Large Should the Text Content in an Image Be? Evidence from Thousands of Social Media Posts

Ivy Dang[1], Canice Kwan[2], Yang Shi[3], Jayson S. Jia[1], [1]The University of Hong Kong, Hong Kong, China; [2]University of Nottingham, Nottingham, United Kingdom; [3]Shenzhen University, Shenzhen, China.

No matter for traditional or digital marketing, some information cannot be conveyed simply in a picture. Text remains an elemental constituent of most ads. When it comes to digital ads, it demands even more sophisticated considerations over the presentation of text content. On one hand, social media marketers have the option to present text in the caption rather than adding text in the image of their post. It is not intuitive how to configure text elements, along with other pictorial and brand elements, in a brand post effectively. On the other hand, in the time where distractions are everywhere, people pay limited attention to text content even if the content is informative. The tension between catching attention and informing becomes more apparent and poses challenges to marketers. In search for solutions, this research analyses over 40,000 brand posts from 100 pages of 68 brands under 9 categories on Facebook and Instagram. Leveraging deep learning-based computer vision and NLP techniques, we capture visual salience, sentiment, and informativeness of the text content. Our findings provide evidence for the differential effects of text size in function of content type (information vs. emotional). That is, increases in image text size generally enhance user engagement for the brand posts with more words or informational content, but the text size effect attenuates or even reverses when the posts contain more emotional content.

Friday, 2PM

FC11

Cambridge - Level 2

Social Media: Text Analytics

Contributed Sessions

3 Capturing Dynamic Changes on Social Review Platforms: The Evolving Effects of Reviewers on the Effectiveness of Their Reviews

Sangkil Moon[1], Seung-Wook Kim[2], Dawn Iacobucci[3], [1]University of North Carolina Charlotte, Charlotte, NC, [2]University of Iowa, Iowa City, IA, [3]Vanderbilt University, Nashville, TN, Contact: smoon13@uncc.edu

This research examines reviewers' influence on social review platforms as reviewers grow more experienced with their time on the platforms. We theorize two sets of factors that determine reviewers' stable and dynamic impacts on user votes (as endorsements from general consumers) that reflect reviewers' influence: (1) elements of the reviewer's writing and (2) product properties perceived by users. To estimate these impacts, we develop two models: the time-varying effect model (TVEM) and the causal forest model (CFM). First, we use the TVEM as a common model that allows its parameters to vary over time, the property that can capture evolving dynamic effects. In addition, to strengthen the assessment of causality effectively, we develop and test the CFM. Using more than 10 years of restaurant reviews from Yelp, we estimate both models and show various effect patterns: (1) static, persistent effects (when influential reviewers possess the properties of high review writing productivity, critical review evaluations, and broad and detailed topic coverage in their reviews), (2) dynamic effects revealing patterns of increasing impact (review productivity and reviewer topic breadth & depth), and (3) dynamic effects revealing nonmonotonic effects, specifically temporally U-shaped (for product satisfaction) and temporally inverse U-shaped (for reviewer positivity). The marketing literature on consumer online reviews is strong, yet we believe our contributions are important in establishing the extant static effects and in adding the dynamic effects. Our research offers new insights to platform managers and product managers into governing influential reviewers by the dynamics of these multidimensional factors determining product success.

Friday, 2PM

FC11

Cambridge - Level 2

Social Media: Text Analytics

Contributed Sessions

4 Viral Tweets and Box Office Success: Evidence from Deep Learning in Social Media

Vivek Sundar Magesh[1], Trichy Krishnan[2], [1]NUS-Singapore, Singapore, Singapore; [2]Currently (RBS Kochi) & Formerly (NUS), Kochi, Singapore, India.

Come Friday, our timelines are replete with tweets pledging the grandeur, cast, genre, and storylines of movies at the box office. In 280 characters, movies are reviewed, and verdicts delivered about whether they are worth our dollars and our time. What role does this *buzz* play in the adoption of new movies? Does it inform the reader about material aspects of the movie, or does it rather simply persuade them to watch the same? Also, from a new product diffusion standpoint, does it accelerate the adoption process, increase the market size, increase the adoption probability, or do all of these? For every movie that ran for 30 days or more at the box office, and for which daily revenues are available, we extract all the top tweets in the five-day window of the release of the movie: two days before, day of release and two days after. We analyse these tweets for their informativeness about aspects of the movie and their persuasiveness in goading us to watch the movie using the BERT model. To analyse box office revenues and movie adoption, we develop a novel diffusion model that, unlike most other models in the extant literature, does not assume a constant market size. The parameters of our model offer deep insights into the patterns of diffusion, with special emphasis on the role of social media, competition from other movies, variation in consumption between weekdays and weekends etc. We address endogeneity issues using this model, using a rich set of controls for each movie, as well as using some instruments. Our results suggest that box office revenues are positively influenced by social media buzz. The mechanism for the said effect is through inflation in the initial market potential, which results in higher initial sales. Our results also point to the fact that while both volume and valence of social media buzz matters for the overall box office revenues, it is only volume that matters for the initial market potential (that decides the initial sales). Finally, informativeness of tweets have only a marginal effect on the box office revenues, and people tend to be informative about movies they dislike, rather than like.

Friday, 2PM

FC12

Trinity - Level 2

Text and Image: Social Media

Contributed Sessions

Session Chair

Patrick Bachmann, University of Zurich, Zurich, WA, Switzerland.

Friday, 2PM

FC12

Trinity - Level 2

Text and Image: Social Media

Contributed Sessions

1 Faster or Slower: The Impact of Salespeople'S Semantic Progression on Consumers' Engagement and Purchases

Shuwen Jiang[1], Xuejing Ma[2], Yichi Zhang[1], [1]University of International Business and Economics, Beijing, China; [2]East China Normal University, Shanghai, China. Contact: sjiang@uibe.edu.cn

How should salespeople communicate within a certain period? In this paper, we study the effect of the semantic progression of salespeople's communication on consumers' responses in live commerce (i.e., selling products through live streaming). We propose that the semantic progression of salespeople's communication can influence consumers' engagement and consumption in two ways: on the one hand, slower semantic progression helps consumers to process product information and reduce purchase uncertainty, thus increasing consumers' engagement and consumption; on the other hand, faster semantic progression can boost engagement and consumption by providing consumers with greater stimulation and excitement. Based on the unique dataset from a live streaming platform, we use the machine learning method to analyze textual scripts of salespeople's speaking to examine the effect of the semantics on consumer interaction and consumption. Overall, we find a dominant positive effect of a lower semantic progression on consumers' responses, which suggests that, in general, it is beneficial to reduce the speed of semantic progression when communicating with consumers. More interestingly, to examine how the effect of semantic progression might vary with the content of salespeople's communication, we use natural language processing to identify (non)-product-related (versus product-related) content in communications, which helps us simultaneously test the two mechanisms proposed above. Further, we explore the heterogeneity effects across products and brands. Our work sheds light on what speed of semantic progression along with which content is effective at engaging consumers and increasing sales, and has implications for firms to improve salespeople's communication skills.

Friday, 2PM

FC12

Trinity - Level 2

Text and Image: Social Media

Contributed Sessions

2 An Exploration of the Effects of Machine-Extracted Body Pose in Image Contents

Yeonsoo Lee[1], Eunsoo Kim[2], Hye-Jin Kim[1], [1]Korea Advanced Institute of Science and Technology, Daejeon, Korea, Republic of; [2]Nanyang Business School, Nanyang Technological University, Singapore, Singapore. Contact: smileystar@kaist.ac.kr

Images possess substantial power as they can convey substantial information and emotions. Previous literature on human images on social media has mainly focused on the mere presence of humans or facial characteristics. Due to the complexity and unstructured nature, few studies have examined the overall body pose. In this work, we introduce and quantify three body pose-related metrics: 1) expansiveness (the space that the body posture takes up), 2) dynamics (the degree of movement), and 3) form (standing, sitting, etc.). Specifically, we propose a novel metric that quantifies expansiveness from body parts information extracted using an advanced computer vision technique. We quantify dynamics and form by leveraging transfer learning and clustering without human intervention. Finally, utilizing a large fashion image database, we demonstrate how the proposed metrics systematically relate to each other and impact social media engagement through "likes." We find significant and robust main effects of all three proposed metrics on social media engagement. Managerially, the result demonstrates how visual content generators can increase social media engagement by manipulating a model's pose.

Friday, 2PM

FC12

Trinity - Level 2

Text and Image: Social Media

Contributed Sessions

3 Influencers and Sales: An Interpretable Multimodal Machine Learning

Yu Kou, Temple University, Philadelphia, PA

While influencer marketing is a red-hot strategy to engage customers and sell products, there is a dearth of research on modeling influencers' multimodal selling behaviors. In this research, we develop an interpretable machine-learning framework to model influencers' multimodal selling behaviors with visual, vocal, and verbal cues, using a large dataset of over 11,000 influencer videos from the biggest short video platforms in the world. A unique feature of our data is that we have fine-grained minute-level product sales records. Results suggest that influencers' body motions, facial emotions, voice metrics, and selling scripts, jointly contribute 36% of power in predicting product sales. This implies that examining influencers' unimodal behaviors with either text, audio, or image alone would substantially underestimate the sales power of influencer marketing. Furthermore, we find that influencers' motion variables (hand gesture and body magnitude) play a more important role than the most-studied visual cues of facial emotions. By contrast, influencers' audio behaviors contribute to less than half the predictive value compared to their selling text or visual cues. Importantly, there exists the heterogeneous value of influencers' multimodal selling behaviors under the conditions of hedonic versus utilitarian products, which indicates that influencers may be coached with different text, audio, facial expression, and motion behaviors to better sell hedonic versus utilitarian categories. These findings offer useful insights into influencer marketing for researchers and managers alike.

Friday, 2PM

FC12

Trinity - Level 2

Text and Image: Social Media

Contributed Sessions

4 A Match Made in Cyber-Heaven: Combining User-Generated Images and Text for Brand Positioning Analysis

Patrick Bachmann[1], Markus Meierer[2], [1]ETH Zurich, Zurich, Switzerland; [2]University of Geneva, Geneva, Switzerland.

User-generated content is a unique data source, but also comes with significant challenges for marketing applications such as brand positioning analysis. On the one side, marketers can assess brand-specific associations and derive market structure in great detail. On the other side, its sheer volume and multi-modality pose a challenge. This study demonstrates the added value of integrating text and image data for brand positioning analysis. Leveraging deep learning techniques, a new framework enables jointly modeling both data types. Looking at the market of running shoes and motorcycles, empirical evidence supports that user-shared texts and images on brands do convey different aspects. Various quantitative and qualitative evaluation techniques consistently support the added value of considering different data types. Relying on such an approach can increase both the completeness and precision of two key tasks in brand positioning analysis.

Friday, 2PM

FC13

Escorial - Level 2

Choice Modeling: General I

Contributed Sessions

Session Chair
Sanghak Lee, Arizona State University, Tempe, AZ

Friday, 2PM

FC13

Escorial - Level 2
Choice Modeling: General I
Contributed Sessions

1 Fundraising Design in a Competitive Market

Hyowon Kim[1], Cassandra M. Chapman[2], Ernan Haruvy[3], Peter Popkowski Leszczyc[2], Greg M. Allenby[4], [1]Case Western Reserve University, Cleveland, OH, [2]University of Queensland, Brisbane, Australia; [3]McGill University, Cote St. Luc, QC, Canada; [4]Ohio State University, Columbus, OH, Contact: hxk673@case.edu

Fundraising involves the simultaneous consideration of three actors - the donor, the charitable organization raising the funds, and the beneficiary. Successful fundraising appeals match donor motivations to preferred organizational and beneficiary attributes while acknowledging the influence of alternative, competitive appeals. We examine the triadic nature of charitable giving and investigate its implications for fundraising using data from a national survey in Australia. We characterize and test the market structure for charitable giving using multiple conjoint exercises to understand donor preferences for charities and beneficiaries, and use text and scaled responses to describe their motivations. We find evidence of the need to consider interactions among the actors, and show that a analysis that focuses exclusively on donor motivations does not predict actual giving amounts as well as analysis that incorporates charities and beneficiaries. We propose integrated, conditional and competitive analyses useful for fundraising design.

Friday, 2PM

FC13

Escorial - Level 2
Choice Modeling: General I
Contributed Sessions

2 When Zeros Count: Confounding in Preference Heterogeneity and Attribute Non-Attendance

Narine Yegoryan[1], Daniel Guhl[1], Friederike Paetz[2], [1]Humboldt University Berlin, Berlin, Germany; [2]Clausthal University of Technology, Clausthal-Zellerfeld, Germany.

Identifying consumer heterogeneity has been a central topic in marketing. While the main focus has been on developing models and estimation procedures that allow uncovering consumer heterogeneity in preferences, a new stream of literature has focused on models that account for consumers' heterogeneous attribute information usage. These models acknowledge that consumers may ignore subsets of attributes when making decisions, which is also commonly termed "attribute non-attendance" (ANA). In this paper, we explore the performance of choice models that explicitly account for ANA across ten different applications, which vary in terms of the choice context, the associated financial risk, and the complexity of the purchase decision. We systematically compare five different models that either neglect ANA or preference heterogeneity or account only for one or both across these applications. First, we showcase how prevalent ANA is. It occurs even in simple settings or even when the stakes are high. Second, we contribute by examining the direction and the magnitude of biases in parameters. We find that depending on the true preference distribution, often related to whether the attribute allows horizontal or vertical differentiation of products, neglecting ANA may lead to under or overestimation of preference heterogeneity, respectively. Lastly, we present how the empirical results translate into managerial implications and provide guidance to practitioners on when these models are beneficial.

Friday, 2PM

FC13

Escorial - Level 2
Choice Modeling: General I
Contributed Sessions

3 Product Differentiation and Winner's Curse in Choice Models

Man Xie[1], Steven M. Shugan[2], Yanping Tu[3], [1]Arizona State University, Phoenix, AZ, [2]University of Florida, Gainesville, FL, [3]Peking University, Beijing, China. Contact: steven.shugan@warrington.ufl.edu

Winner's curse tells us that the winning bid tends to overvalue the auctioned asset for purely statistical reasons. We develop implications of this critical often overlooked property for both product choice and product differentiation where products differ. We show overvaluing depends on information about non-chosen products. Our findings apply to both consumer choice and automated choices by artificial intelligence programs because overvaluing occurs without human biases. We show overvaluing occurs when the chooser believes products are differentiated and evaluates each product using only information about that product. Overvaluing disappears when choosers use information about all products to evaluate each product (i.e., the belief products are undifferentiated). Hence, the Value-of-Differentiation (VoD) is how much a product's valuation increases when a chooser believes alternatives are differentiated. Firms can influence VoD by emphasizing differences rather than necessarily strengths or weaknesses. We derive VoD's properties, how VoD benefits firms and how to increase VoD.

Friday, 2PM

FC13

Escorial - Level 2

Choice Modeling: General I

Contributed Sessions

4 Locally-Rational Demand Models

Sanghak Lee[1], Taegyu Hur[2], Greg M. Allenby[3], [1]Arizona State University, Tempe, AZ, [2]Iowa State University, Ames, IA, [3]Ohio State University, Columbus, OH, Contact: sanghak.lee@asu.edu

The assumption that more-is-better doesn't hold when consumers want to limit the amount they consume. High calorie meals frustrate dieting plans, food with high salt content may lead to bad health outcomes and large quantity purchases may not fit within available storage spaces. The assumption in economics that marginal utility is always positive may not apply in situations when purchase quantities take on a wide range and when consumers have ideal points and unobserved constraints on their choices. In this paper we develop a model and estimator for locally-rational demand that identifies unobserved constraints on choice by allowing marginal utility to be negative. The model is applied to conjoint data of buy-one-get-one (BOGO) promotions and a scanner panel dataset of milk purchases where the effect of locally-rational demand is prevalent.

Friday, 2PM

FC14

Alhambra - Level 2

UGC: Reviews I

Contributed Sessions

Session Chair

Qiao Gong, The Chinese University of Hong Kong, Hong Kong, Hong Kong.

Friday, 2PM

FC14

Alhambra - Level 2

UGC: Reviews I

Contributed Sessions

1 Spillover Effects of Online Reviews: Evidence from the Hotel Industry

Hulya Karaman[1], Cheolho Song[2], Tat Y. Chan[2], Song Yao[2], [1]Singapore Management University, Singapore, Singapore; [2]Washington University in St. Louis, St. Louis, MO, Contact: cheolho@wustl.edu

Do online consumer reviews have spillover effects on the sales of competitors? We study this question using a natural experimental setup where a major hotel group introduced its own review system to all the hotels within its portfolio. Using a modified Synthetic Control Method, we analyze the monthly financial performance data of reviewed and competing hotels before and after the introduction of the review system. We find that the review system has significant economic impacts on both reviewed and competing hotels, and the effects are highly heterogeneous. Surprisingly, the correlation between the economic impacts on reviewed and competing hotels is significantly positive: If the occupancy rate of a reviewed hotel increases by 1%, its competitors' occupancy rate increases by 0.39%. The positive correlation can be explained by the information spillover. Under this mechanism, consumers update their beliefs about competing hotels based on the reviews for reviewed hotels. We explore alternative explanations, but none can fully explain the positive correlation. Our results suggest that, besides monitoring their own reviews, managers should also monitor competing products' reviews because of information spillover from the competitors' reviews.

Friday, 2PM

FC14

Alhambra - Level 2
UGC: Reviews I
Contributed Sessions

2 Consumer Reviews and Product Resilience

Sungsik Park[1], Woochoel Shin[2], [1]University of South Carolina, Columbia, SC, [2]University of Florida, Gainesville, FL, Contact: sungsik.park@moore.sc.edu

Firms strive to achieve high and stable revenue. However, they often cannot avoid the risk associated with dynamically changing market conditions. An important question is what makes products less susceptible and thus, more resilient to the negative development of the market. In this paper, we propose that consumer reviews may contribute to building product resilience, based on their significant influence on the product sales. In our analysis, we use the entry of Amazon's store brand into the ground-coffee market as our empirical context. We first find that the competitive entry of the store brand on average decreases the sales of existing products even in the online shopping context. However, our analysis further shows that products with high review ratings do not exhibit a sales loss from this negative event, implying that favorable consumer reviews may enhance product resilience. On investigating into the potential mechanism behind this result, we find that after the store brand entry, consumers became more sensitive to the price for low-rated products which experienced a sales decrease but less sensitive for high-rated products which were immune to the negative shock. This implies that favorable consumer reviews make the product resilient to the negative market developments by reducing price sensitivity of consumers. We discuss managerial implications of our findings.

Friday, 2PM

FC14

Alhambra - Level 2
UGC: Reviews I
Contributed Sessions

3 Effect of the Expert's Review on Experience Goods Consumption

Qiao Gong[1], T. Tony Ke[2], Francisco Cisternas Vera[2], [1]The Chinese University of Hong Kong, Shatin, Hong Kong; [2]The Chinese University of Hong Kong, Shatin, Hong Kong.

Experience goods like movies or video games, are products with characteristics, such as quality, which are difficult to be observed in advance, but can be ascertained upon consumption. Consumers can reduce uncertainty by acquiring additional information from a third-party review institution, an 'expert'. Normally, the sales peak of such products happens just after the launch, so the product review matters in the early period only. To make the experts' reviews up to date, the convention is that the firm will release its new products to the experts before the official launch. Accordingly, the experts will release the reviews just before the formal product release, which directly influences the consumers' willingness to pay. Given such a pre-review mode, the firm has a larger influence on the review process by controlling whether to let the experts review its product. Correspondingly, the experts have to balance the interests of consumers and that of the firm, to gain a large reputation and to maintain the qualification to review.
This study contributes to the literature of information transmission. We endogenize the experts' decisions where a bias towards the firm appears as a consequence of its motivations. The model result fits the observation that the experts have a tendency towards positive reviews for the firm. In specific, we show how the firm chooses the experts and how the experts distort their reviews to respond to the firm's manipulation.

Friday, 2PM

FC15

Michaelangelo - Level 2
CRM: Sales Force Management II
Contributed Sessions

Session Chair
Srinath Gopalakrishna, University of Missouri, Columbia, MO

Friday, 2PM

FC15

Michaelangelo - Level 2
CRM: Sales Force Management II
Contributed Sessions

1 Does Information Matter: Contests in a Complex Structure

Hua Chen[1], Kevin Chung[2], [1]The University of Georgia, Athens, GA, [2]University of Wisconsin-Madison, Madison, WI, Contact: huachen@uga.edu

Consider a contest conducted in a **3-tier** organization where the owner provides a winning prize for branches to compete and the manager of each branch offers a reward to motivate his agents. The standard economic theory predicts that the information on total winning prize or the reward offered to the opponent agents would have no impact on the effort decisions by the focal agent. Using an incentive-aligned lab experiment, contrary to the predictions, the authors find that: 1) the agents adjust their effort based on their knowledge about the total winning prize or the reward offered to the opponent agents; 2) the managers modify their reward upward (downward) when either (both) of the information is revealed to the agents. These behavioral regularities are explained by a model that incorporates the fairness concerns (vertical and horizontal) and the relative saliency of the two into the agent's utility function.

Friday, 2PM

FC15

Michaelangelo - Level 2

CRM: Sales Force Management II

Contributed Sessions

2 Do Non-Compete Clauses Help or Hurt Firms in the Presence of Salesforce Owned Customer Loyalty?

Somnath Banerjee[1], Lin Liu[2], Axel Stock[3], [1]North Dakota State University, Fargo, ND, [2]Beihang University, Beijing, China; [3]University of Central Florida, Orlando, FL, Contact: axel.stock@ucf.edu

Firms often recruit sales representatives to build relationships with customers and sell them products over time. In such a case of relationship marketing, customers build loyalty not only towards the firms but also towards their sales representatives. However, since the loyalty generated from customer-salesperson relationship is often owned by the sales person it can be lost if the sales person moves to another firm. In this context, firms competing in the market compete for both customers as well as sales reps with the objective of poaching customers that are loyal to the sales reps. We employ a two period game theoretic model of duopolistic competition to study optimal firm strategy in this scenario. Our analysis reveals that while under some conditions the possibility of poaching of sales reps decreases firm profits, interestingly, under other conditions it can actually increase firm profits. This result is driven by the fact that while possibility of poaching of sales reps increases employee retention and wage costs, it also leads to a strategic benefit in form of softening of competition for acquisition of new customers. Our finding implies that contrary to general beliefs, the presence of anti-employee poaching regulations like Non-Compete clauses may hurt firms under some conditions.

Friday, 2PM

FC15

Michaelangelo - Level 2

CRM: Sales Force Management II

Contributed Sessions

3 The Monetary and Social Motivation of Sales Contest Leaderboards

Yuanchen Su[1], Madhu Viswanathan[2], George John[1], [1]University of Minnesota, Minneapolis, MN, [2]Indian School of Business, Hyderabad, India. Contact: suxxx374@umn.edu

Sales contests have long been considered a viable tool in salesforce. Often, these sales contests are multi-period with leaderboards making interim results available. Leaderboards influence *monetary motivation* - interim standings allow contestants to better calibrate their chances of winning the prize(s). They also influence *social motivation* - the first page of the leaderboard brings social recognition whilst being on the last page is disheartening. In this paper, we aim to (1) examine whether social motivation exists in the sales contest leaderboards, (2) disentangle and quantify salespeople's monetary motivation and social motivation in the sales contests, and (3) design more effective sales contests with leaderboards by coordinating monetary motivation and social motivation. Using data from real-world large-scale sales contests with leaderboards, we find participants' next-day sales are influenced by their previous positions on the leaderboards. Specifically, (1) participants respond to their page positions on the leaderboards in a "U" shape, i.e., participants on the first page and last page are more likely to make sales on next-day compared to participants who are on the middle pages, (2) participants are more motivated when they are close to the leaderboard page boundaries compared to their neighbors far away from the boundaries, and (3) participants with the same performance but listed on different pages of the leaderboards behave differently. In order to explore more effective designs of sales contest with leaderboards, we build a dynamic structural model

incorporating the behavioral assumptions of social motivation from model-free evidence to estimate monetary motivation sensitivity, social motivation sensitivity, and cost of effort. This comprehensive model helps firms better understand salespeople's different types of motivation in response to the sales contests, and thus gives firms guidance on how to improve the design of sales contests with leaderboards as well as other incentive programs involving both monetary motivation and social motivation.

Friday, 2PM

FC15

Michaelangelo - Level 2
CRM: Sales Force Management II
Contributed Sessions

4 **Acquiring New Customers: The Interplay Between Networking and Marketing Communications**

Andrew Crecelius[1], Srinath Gopalakrishna[2], Amirhosein Zahedi[1], [1]Iowa State University, Ames, IA, [2]University of Missouri, Columbia, MO, Contact: srinath@missouri.edu

Customer acquisition is an important yet challenging activity in the sales process. Especially in entrepreneurial sales contexts such as insurance and real estate, which represent a large proportion of sales employment, acquiring new customers is business critical. In this paper, we investigate salesperson networking and find that it serves as a valuable marketing communications tool and can be integrated with other communications mix elements. Our research investigates the interaction effects of offline and online networking behaviors, with mass-media communication (one-way communications such as television advertisement) and salesperson-mediated communication (communications involving two-way contact such as local sponsorships), on the acquisition of new customers in an auto insurance context. The data are from a large midwestern insurance company that operates in multiple states via sales agents who sell multiple insurance products. The results show that the number of customers acquired due to online networking activities of salespeople (e.g., through social media platforms) is enhanced when combined with salesperson-mediated marketing communications but diminished when combined with mass-media marketing communications. In addition, offline networking activities (e.g., face-to-face or over the phone) interact positively with mass-media communications but negatively with salesperson-mediated communications, in their impact on new customer acquisition. Our findings suggest that marketing managers should take note of salesperson networking behaviors as an important mode of communication and carefully factor the impact of networking when making marketing communication resource allocation decisions.

Friday, 2PM

FC16

Raphael - Level 2
Platform Design and User Behavior
Special Session

Session Chair
Bowen Luo, University of Houston, Houston, TX

Friday, 2PM

FC16

Raphael - Level 2
Platform Design and User Behavior
Special Session

1 **Service Provider Performance in the Gig Economy: Role of Commission Structures**

Bhoomija Ranjan[1], Benedict G C Dellaert[2], Yongdong Liu[3], [1]Monash Univesity, Caulfield North, Australia; [2]Erasmus University, Veldhoven, Netherlands; [3]UCL School of Management, University College London, London, United Kingdom.

In the sharing economy, the platform's key role lies in creating value by facilitating matches between service providers (supply) and prospective consumers (demand). Platform profits depend on the simultaneous growth of both demand and supply sides of the market. To maintain this, multiple platforms have recently introduced subscription services for customers and service providers (e.g. Uber One, DashPass, etc.). Subscription services incentivize demand/supply actors to provide regular (e.g. monthly) payment to the platform in exchange for better service (e.g. lower delivery fee for customers) or superior job matches for vendors. In this project, we explore the role of commission structures in determining downstream service provider performance. We exploit a quasi-experimental variation in service provider commission structures using a unique dataset from an Indian sharing economy platform that introduced a subscription model for one of its offered product categories.

The subscription model changed the commission structure from a fixed rate (per-job) to a flat monthly fee in 2018. This changes the incentives faced by the vendor and consequently affects their performance. Our results indicate that subscription causally reduces the demand uncertainty faced by service providers. In equilibrium, average demand to each vendor also increases. We posit two explanations for this phenomenon. First, service providers work longer (more jobs per day) and more intensively (more days per week) to recover the cost of subscription. Second, vendor competition increases leading to churn. Our results provide meaningful insights for sharing economy platforms in designing optimal incentive structures to maintain demand and supply forces in equilibrium.

Friday, 2PM

FC16

Raphael - Level 2
Platform Design and User Behavior
Special Session

2 Standing Out from the Crowd: Consumer Subscription and Gifting on Live Streaming Platform

Zirou Chen[1], Nitin Mehta[1], Clarice Zhao[2], [1]University of Toronto, Toronto, ON, Canada; [2]McGill University, Montreal, QC, Canada.

Livestreaming platforms typically have two monetization methods: user subscription and gifting to the content creators. In this paper, we explore the relationship between these two monetization tools. Are they substitutes or complements? Specifically, does subscribing increase or decrease consumers' motivation to gift in terms of either frequency or monetary value? To answer these questions, we collect unique panel data of individual consumers' activities on TikTok Live and leverage the sequential roll-out of subscription features on TikTok Live for causal inference. Our empirical results show that subscription to live streaming channels significantly increases the frequency and amount of gifting. Furthermore, we examine the spillover effect of subscriptions on the gifting behavior of non-subscribers. We discuss the implications of our findings for both creators and the platform.

Friday, 2PM

FC16

Raphael - Level 2
Platform Design and User Behavior
Special Session

3 Simultaneous vs Sequential: Reward Release Strategies in Learning Platforms

Dinara Akchurina[1], Paulo Albuquerque[2], [1]University of Toronto, Toronto, ON, Canada; [2]INSEAD, Fontainebleau, France.

We study the impact of the speed of rewarding content release on consumer usage and trial conversion. We examine two strategies for introducing rewarding features during the trial period: all at once during the first interaction with the product or gradually over time. Introducing multiple features early on may boost consumer exploration and increase utility in the initial sessions, while delaying the introduction of some features may increase engagement in the latter sessions through incentives to discover novel content or satiation with entertaining activities. Using data from A/B experiments on an online education platform, we find that gradual release of rewards leads to higher usage, lower attrition, and higher subscription rates compared to releasing all at once. The descriptive patterns from the experiment suggest that satiation with rewarding content is an important driver of the effect. We discuss the implications of the findings for platform managers.

Friday, 2PM

FC16

Raphael - Level 2
Platform Design and User Behavior
Special Session

4 Selling Inefficiencies in Thin Digital Art Markets

Bowen Luo[1], Yufeng Huang[2], Chenyu Yang[3], [1]University of Houston, Houston, TX, [2]University of Rochester, Rochester, NY, [3]University of Maryland, College Park, MD

Markets for unique goods are often "thin" in that the number of potential buyers for each item is small (e.g., collectibles, arts, and ad impressions). In these thin markets, selling mechanisms dictate whether an item can be allocated to the highest-value buyer. We study the source of matching efficiencies on a major digital art platform, which allocates hundreds of thousands of digital arts through limited-time auctions. One source of inefficiency is buyers' limited awareness. Another source of inefficiency is that, because few buyers get to see each product during the limited-time auction, sellers have to set inefficiently high reserve prices to guard against selling to low-value buyers. We use detailed, individual-level data to demonstrate that the market is thin (60% of products received no bid and 28% received only one bid) and that social media (e.g., Twitter) can effectively increase the number of buyers. We explore alternative selling mechanisms that could gather more buyers and increase market thickness and matching efficiencies.

Friday, 2PM

FC17

Balmoral Level 2
Consumer Behavior: Consumer Judgement
Contributed Sessions

Session Chair
Mauricio Palmeira, [1</sup]

Friday, 2PM

FC17

Balmoral Level 2
Consumer Behavior: Consumer Judgement
Contributed Sessions

1 The Magnitude of Consumers' Bias Correction in Product Judgment

Yi-Wen Chien[1], Chung-Chiang Hsiao[2], [1]National Taiwan University, Taipei, Taiwan; [2]National Taiwan Normal University, Taipei, Taiwan. Contact: ychien@ntu.edu.tw

Consumers are often influenced by many irrelevant factors, leading to biased product evaluations. In recent years, a growing number of psychology and marketing scholars have found that people can detect biases in certain situations and correct their initial biased judgments to achieve perceived accuracy. However, no studies have explored the underlying factors and mechanisms that lead to different correction magnitudes when bias correction is activated for the same bias. The current research shows for the first time that attitude confidence can negatively influence the degree to which people perceive themselves to be biased and thus the actual magnitude of bias correction. The current research further proposes that attitude confidence can serve as a mediator of the relationship between product knowledge and the extent of bias correction. Two studies tested and confirmed the above propositions. Our research offers some important implications for business practices. First, consumers' attitudes toward products is not the only important focus for marketing or persuasive strategies; strengthening consumers' confidence level toward product attitudes may be equally substantial since higher confidence would make consumers more resistant to attacking information distributed by competitors and more firmly hold their attitudes with less attitudinal recalibration even if noticing the deliberate marketing manipulations in the persuasion communications. Second, marketing managers can better predict and control customers' corrective magnitudes to enhance the effectiveness of marketing persuasive attempts if they know the conditions and the factors affecting consumers' corrective behavior for product judgments. Finally, marketing managers can annul competitors' marketing effects by triggering and enlarging consumers' correction magnitudes for competitors' promotional programs.

Friday, 2PM

FC17

Balmoral Level 2
Consumer Behavior: Consumer Judgement
Contributed Sessions

2 The Different Roles of Two Involvements in Triggering Consumers' Bias Correction

Chung-Chiang Hsiao[1], Yi-Wen Chien[2], [1]National Taiwan Normal University, Taipei, Taiwan; [2]National Taiwan University, Taipei, Taiwan. Contact: cchsiao@ntnu.edu.tw

The current research examines the underlying process that trigger consumers' bias correction in product judgments. We propose and demonstrate that the involvement in identifying biases and the involvement in executing corrections are conceptually distinct. That is, each type of involvement has a specific role in the bias correction process, and both types of involvement should coexist in order for consumers to activate the correction process. Furthermore, we propose and demonstrate that the motivation subfactor may be directional substitutable, but the ability subfactor is not replaceable between the two involvements. Specifically, increasing the motivation to execute corrections may increase the motivation to identify biases, but not the other way around. However, the ability to identify biases is independent of the ability to execute corrections. Two studies tested and confirmed the above propositions. The current research helps marketers better understand the conditions under which consumers will spontaneously engage in corrections to remove biases in product judgments, which is essential for marketers to develop effective communication strategies. Biases (e.g., endorsers, beautiful pictures, or good music) in persuasive contexts are usually created by businesses to intentionally and positively influence consumers' product perceptions. However, corrections to remove these biases tend to shift product perceptions in a less favorable direction. Thus, knowing when and how consumers will engage in corrections can help marketers prevent the positive marketing tactics from being corrected to produce reversed effects or can even help marketers intentionally create a situation where consumers will correct for the positive marketing maneuvers made by competitors.

Friday, 2PM

FC17

Balmoral Level 2
Consumer Behavior: Consumer Judgement
Contributed Sessions

3 Morbidity Information Disclosure Format: Impact on Compliance with Recommended Preventive Behaviors

Angela Yi[1], Dipankar Chakravarti[2], [1]Virginia Tech, Blacksburg, VA, [2]Virginia Tech, Ellicott City, MD, Contact: angelay19@vt.edu

During the recent pandemic, media coverage of COVID information showed significant variation. Some outlets presented morbidity and fatality information both as frequencies and percentages, whereas others reported only the frequencies. Although these format differences may seem innocuous, it is plausible that these differences affected people's perceptions of the severity of health risks posed by the virus and affected compliance with recommended preventive behaviors (RPBs). This research examines how differences in fatality and morbidity information presentation (frequency vs. frequency + percentage) influences risk perceptions and mediates compliance with RPBs. Study 1 focused on COVID and used a 2 (format: frequency; frequency + percentage) x 3 (level: tested positive + deaths; tested positive + deaths + recoveries; tested positive + deaths + recovery + infection severity) design. Participants indicated their compliance intentions with RPBs and severity perceptions. The presentation of frequencies and percentages (vs. frequency alone), lowered severity perceptions and in turn, mediated lower compliance with RPBs. Covid-19 was highly prevalent so even a high fatality number produced a low fatality percentage. We expected reversals in severity judgments for diseases with high fatality rates but low prevalence (i.e., larger fatality percentages). We used shingles (high prevalence with low fatality) and encephalitis (low prevalence with high fatality) to test our hypothesis. Study 2 was a 2 (format: frequency; frequency + percentage) x 2 (disease: shingles; encephalitis) design. As expected, the additional percentage information lowered severity perceptions for shingles, but increased severity perceptions for encephalitis. Finally, in Study 3, we used a 2 (prevalence: high; low) x 2 (fatality: high; low) x 2 (format: frequency; frequency + percentage) design, without identifying specific diseases. The additional percentage information decreased severity perceptions for diseases with low fatality and increased perceptions for diseases with high fatality.

Friday, 2PM

FC17

Balmoral Level 2
Consumer Behavior: Consumer Judgement
Contributed Sessions

4 Backup Plans: The Impact of Timing of Disclosure on Perceptions of Competence

Mauricio Palmeira[1], Evan Polman[2], [1]University of South Florida, St Petersburg, FL, [2]University of Wisconsin, Madison, WI, Contact: mpalmeira@usf.edu

Consumers often consult professionals that provide solutions for their problems. Oftentimes, an initial attempt to solve a problem fails, and these professionals need to resort to a backup plan. A backup plan can be presented when it is needed, (i.e., after an initial failure), or in advance, (i.e., before the initial failure). We examine how the timing of disclosure of a backup plan affects consumers' judgment of competence. We show that although consumers expect professionals to have a backup plan, they react more negatively when it is only presented after an initial failure. Delaying the disclosure of a backup plan makes professionals appear less prepared. This negative inference disappears if consumers are prompted to think about what a professional would do in case of failure, as indeed, a backup plan is expected. Further, we show that, in the absence of an initial failure, early disclosure only has a negative impact if multiple backup plans are disclosed, conveying the impression that the professional is unsure. Thus, we conclude that early disclosure of a single backup plan effectively inoculates professionals against receiving a competence penalty, without causing negative side effect if the plan turns out to be unnecessary.

Friday, 2PM

FC18

Windsor - Level 2
Retailing:Online and Offline Shopping
Contributed Sessions

Session Chair
Praveen K. Kopalle, Dartmouth College, Hanover, NH

Friday, 2PM

FC18

Windsor - Level 2
Retailing:Online and Offline Shopping
Contributed Sessions

1 **Beyond Immediate Sales-Uplifts: The Cross-Channel Effects of Online-Only Coupons on Online and Offline Purchase Behaviour**
Christina Antonie Reh, Christian Schlereth, WHU-Otto Beisheim School of Management, Vallendar, Germany.
Traditional brick-and-mortar stores invested heavily in launching and promoting their online shop to complement their offline business. They often send out coupons, which customers can only redeem online - not in physical stores. Despite the high relevance of online coupons, marketers still tap into the dark on how these coupons ultimately affect customer purchases. In an extensive field experiment with more than >335,000 loyalty cardholders, we explore whether online-only coupons increase online sales in the short-term, long-term, or even both. We also contemplate their impact on offline purchases. By using IPW matching and linear regression analysis, we find that sending out online-only coupons may short-term positively increase online-shopping purchase incidence and also significantly affect long-term offline purchase behaviour. Beyond the online effect, online-only coupons possess the power to affect the long-term offline shopping purchase incidence and customers' online and offline total basket sizes.

Friday, 2PM

FC18

Windsor - Level 2
Retailing:Online and Offline Shopping
Contributed Sessions

2 **Do Consumers Follow Others in Flash Sales? an Investigation of Social Influence and Moderating Factors in Online Grocery Shopping**
BingYang Fang, Chang Hee Park, Debjit Gupta, Binghamton University, Binghamton, NY, Contact: bfang4@binghamton.edu
We investigate the impact of social influence on consumers' purchase behavior in time-limited promotions and factors that moderate the relationship. Using data on 24-hour flash sales in an online grocery store, we find that consumers are more likely to buy products that are popular among others during promotions, indicated by a high percentage of stock sold (e.g., 80% sold and 20% left). More interestingly, such an impact of social influence is found to be stronger for products with a lower discount rate, a smaller number of consumer reviews, and/or a higher original price. These results are robust after controlling for products' popularity during the non-promotion periods and other characteristics, as well as unobserved time-specific effects. We also employ Gaussian copula methods to deal with the potential endogeneity of product prices and discount rates. We discuss the implications of our findings for retailers' management of time-limited promotions.

Friday, 2PM

FC18

Windsor - Level 2
Retailing:Online and Offline Shopping
Contributed Sessions

3 **The Impact of Inter-Department Proximity on Joint Sales in Retail Stores**
Praveen K. Kopalle[1], Laxminarayana Yashaswy Akella[2], Dhruv Grewal[3], Jens Nordfält[4], Stephanie Noble[5], [1]Dartmouth College, Hanover, NH, [2]Indian Institute of Management, Ahmedabad, Ahmedabad, India; [3]Babson College, Wellesley, MA, [4]University of Bath, Bath, United Kingdom; [5]University of Tennessee, Knoxville, TN, Contact: kopalle@dartmouth.edu

This research explores the elements contributing to offline in-store consumer journeys. We hypothesize using the stimulus-load theory from the store environment literature. By combining data from multiple sources, such as store sales and blueprints, we create a novel dataset and validate the importance of inter-department proximity (IDP). Results show that as the IDP of two departments increases, joint sales (combined sales of those two departments) first increase and then decrease, depicting an 'inverted-U' relationship. We consider total three (two external and one internal) factors for the department in establishing boundary conditions for IDP. Results show that the type of departments and non-identicality of the department layout positively impact the relationship between IDP and joint sales among external factors. Finally, with the internal factor, category differential, we find that the as the difference in the number of categories between two departments increases, the relationship between IDP and joint sales strengthens. As a post hoc study, we also find that non-complementary departments, such as substitutes and unrelated, should be placed closer than complementary departments. This research has practical implications for store managers who have space constraints but intend to enhance sales across departments in their stores.

Friday, 2PM

FC19

Sandringham - Level 2
Pricing: Inflation and Price Trends
Contributed Sessions

Session Chair
Sreya Kolay, University at Albany, SUNY, Niskayuna, NY

Friday, 2PM

FC19

Sandringham - Level 2
Pricing: Inflation and Price Trends
Contributed Sessions

1 Ripples in the Price Spectrum: Strategic Intent
Xiao Ling[1], Sourav Ray[2], Daniel Levy[3], [1]Central Connecticut State University, New Britain, CT, [2]University of Guelph, Guelph, ON, Canada; [3]BarIlan University, RamatGan, Israel. Contact: x.ling@ccsu.edu

In this paper, we study the possible strategic intent behind a particular pricing behavior of retailers - asymmetric pricing in the small or APIS - where small price increases dominate small price decreases (and the corresponding reverse phenomenon APIS-R), with such asymmetry disappearing at the larger end of the price change spectrum. There are speculations that these practices are tools to turn the retailers' dynamic pricing capabilities into profit - in particular, by strategically leveraging consumers' rational inattention and strategic obfuscation of price increases. We study these using two complementary datasets - a large scanner dataset with almost 79 billion weekly prices from 2006 to 2015, covering 527 products, and about 35,000 stores across 161 retailers in the US, and a matching consumer panel dataset of over 50,000 panelists during the same period. At the retailer level of aggregation, almost 55% of our sample exhibit APIS, 30% APIS-R. At product level of aggregation, 53% exhibit APIS, and 37% APIS-R. Consistent with our predictions of strategic intent, we find APIS, and APIS-R are more prevalent for categories with a smaller share of consumer basket, and that APIS-R is negatively associated with category purchase frequencies and price levels. We also find that HILO retailers are more likely to engage in both APIS and APIS-R relative to EDLP retailers and that larger retailers are more likely to engage in these pricing practices. Our findings are among the first empirical results explaining the cross-sectional variation of asymmetric pricing practices.

Friday, 2PM

FC19

Sandringham - Level 2
Pricing: Inflation and Price Trends
Contributed Sessions

2 Grandfathering Prices During Inflation
Jihwan Moon[1], Steven Mark Shugan[2], [1]UNSW, Sydney, Australia; [2]University of Florida, Gainesville, FL, Contact: jihwan.moon@unsw.edu.au

After decades of price stability, inflation returns to the United States and other countries. Firms facing inflated costs and consumers facing decreasing purchasing power are reconsidering new strategies. One prominent strategy, under increasing scrutiny, is called "grandfathering". Grandfathering exempts legacy users from adjustments for inflation imposed on new users. A prominent example is price grandfathering where legacy customers pay legacy prices instead of inflated prices. The popular business press often criticizes "price grandfathering" as a foolish, unprofitable, and abstruse business practice. However, despite inflated costs and ostensibly lower margins, grandfathering persists among some firms in many industries including software, training, beauty, entertainment, exercise, social networking, consulting, and website hosting. Even when some firms abandon simple price grandfathering, they may grandfather services so that only legacy customers can continue to use legacy services, effectively having infinite inflated prices for others. We verify whether grandfathering is a viable strategy or simply folly during inflation.

Friday, 2PM

FC19

Sandringham - Level 2

Pricing: Inflation and Price Trends

Contributed Sessions

3 How Soaring Inflation Impacts Consumers' Spending Patterns

Ada Choi[1], Harald van Heerde[1], Marnik G. Dekimpe[2,3], Jake T. An[4], [1]University of New South Wales, Sydney, Australia; [2]Tilburg University, Tilburg, Netherlands; [3]KU Leuven, Belgium, Belgium; [4]University of Technology Sydney, Sydney, Australia. Contact: ada.choi@unsw.edu.au

Consumers around the world witness prices soaring at the fastest rate since the mid 1980s and it is unclear how they adjust their spending patterns in response. Unlike countries with fixed-rate home loans, interest rate hikes are particularly challenging for consumers in countries with variable-rate mortgage loans (such as, for example, Australia), directly impacting their income and subsequent budget allocation decisions across a broad set of spending categories. Extant literature has not only studied how economic conditions impact consumer spending decisions in isolation, specifically, the effects of macro-inflation (i.e., consumer price index), micro-inflation (i.e., inflation levels experienced at the household level), macro-income (i.e., gross domestic product) and micro-income (i.e., household income), but have also done so focusing on a single expense category (typically groceries). Because of that, the *joint* understanding of these variables on consumer spending patterns *as a whole* remains fragmented and incomplete. Leveraging a comprehensive Australian dataset consisting of approximately 350,000 individuals' full daily banking transaction data (including the details of consumers' mortgage payments and daily purchases across a variety of categories) over a period of five years between 2016 and 2021, this study explores how macro- and micro-economic conditions impact and interact with consumers' spending decisions simultaneously.

Friday, 2PM

FC19

Sandringham - Level 2

Pricing: Inflation and Price Trends

Contributed Sessions

4 A Model of Shrinkflation

Sreya Kolay[1], Rajeev Tyagi[2], [1]University at Albany, SUNY, Albany, NY, [2]University of California, Irvine, Irvine, CA, Contact: sreya.kolay@gmail.com

The practice of firms responding to their cost increases with a reduction in package size, while not changing the package price, has attracted considerable attention recently. Commonly called "downsizing," or "shrinkflation," this practice has often been explained as a strategy employed by firms to take advantage of consumers' inability to notice quantity change within their purchased package. In this view, shrinkflation is a sneaky backdoor way to increase the per-unit price, thus hurting consumers. We build formal models in which a monopolist or two competing firms sell to consumers who are aware of any change in package size. We find conditions on consumer tastes, degree of competition, and magnitude of cost increase under which seller(s) prefer to use shrinkflation in spite of consumer awareness of shrinkflation. We analyze if/when shrinkflation can be beneficial to consumers and society.

Friday, 4PM

FD01

Trade Room- Lobby Level

ML: Image Analysis

Contributed Sessions

Session Chair

Shuya Lu, Cleveland State University, Cleveland, OH

Friday, 4PM

FD01

Trade Room- Lobby Level

ML: Image Analysis

Contributed Sessions

1 Biophilia and Home Valuation

Yuqian Chang[1], Ning Ye[2], Nathan Fong[1], Maureen Morrin[1], [1]Rutgers University, Camden, NJ, [2]Stockton University, Galloway, NJ, Contact: yuqian.chang@rutgers.edu

We demonstrate that homes portrayed online with more images of plant life sell at higher prices - a novel effect we refer to as the 'biophilia premium.' Plants have served as abundant sources of food and shelter throughout history. As a result, images with plant life, or biophilic images, activate cognitions associated with abundance rather than scarcity, mitigating the anxiety triggered by the home buying process, especially among consumers facing chronic resource scarcity. In support of this hypothesis, we analyzed a large, unstructured online real estate data set consisting of 40,294 online home profiles and 569,828 associated digital images. We first built a biophilic image classifier with an attentional mechanism geared for object detection based upon a two-stage deep learning algorithm (Faster R-CNN). Subsequent econometric analysis (including regression, double machine learning, and instrumental variable approaches) indicates that homes depicted with more biophilic images attain higher transaction prices. Consistent with the proposed underlying mechanism, the effect is stronger in areas of lower socioeconomic status and greater resource scarcity. Additional controlled experiments directly manipulated the presence of biophilic images in property profiles, to validate the underlying psychological process driving the results and establish boundary conditions.

Friday, 4PM

FD01

Trade Room- Lobby Level

ML: Image Analysis

Contributed Sessions

2 Identifying Differential Effects of Emotions in Images on Donation Behavior for Black Versus White Beneficiaries in Online Crowdsourcing Platforms

Elham Yazdani[1], Anindita Chakravarty[1], Jeff Inman[2], [1]University of Georgia, Athens, GA, [2]University of Pittsburgh, Pittsburgh, PA, Contact: elham.yazdani@uga.edu

Crowdfunding platforms profess goals of equitable outcomes for all beneficiaries. Yet, many platforms are criticized for their inability to equitably help beneficiaries of different demographic profiles. As a result, platform managers are interested in understanding how inequities arise in their platforms and possible solutions to mitigate inequities. In this research, we show that facial emotion expressions in images uploaded by beneficiaries can impact donation amounts for white and black beneficiaries differently. Adapting theories of racial stereotyping of emotions, we propose that white beneficiaries benefit more from displaying emotions expressions in images than black beneficiaries. Using a sample of 3,438 projects from GoFundMe from June 2021 to September 2022 and a follow-up experiment, we find that happy facial expressions improve donation amounts significantly more for white than black beneficiaries. Further, sad facial expressions adversely affect donation amounts significantly more for black beneficiaries than white beneficiaries. To explore further heterogeneity, we use cognitive dissonance theory and find that the differentials between black and white beneficiaries from happy and sad emotion expressions are attenuated in projects that include explicit appeals of urgency. With our results, we provide specific recommendations to platform managers to reduce racial inequity from facial expressions in images.

Friday, 4PM

FD01

Trade Room- Lobby Level

ML: Image Analysis

Contributed Sessions

3 The Joint Effect of Image and Text on the Crowdfunding Success

Shuya Lu[1], Jianan Wu[2], Shih-Lun Tseng[3], [1]Cleveland State University, Cleveland, OH, [2]Louisiana State University, Baton Rouge, LA, [3]Central Michigan University, Mount Pleasant, MI

Aside from the three sets of drivers of reward-based crowdfunding success (i.e., the characteristics of the project, project creators, and backers), current studies have been examining how the communication effectiveness of a single media (e.g., text or image) affects crowdfunding success. However, extant research remains silent on how image and text jointly affect crowdfunding success in multimodal media communications. To bridge this research gap, we address the research question: *how do image and text communications jointly affect crowdfunding success?* We collected data on all live projects on Kickstarter from April 3, 2018, to July 31, 2018. We used ChatGPT, computer vision API, and LDA to process images and text into vectors. We further used L2 distance to measure the similarity between the image and textual descriptions of each project. We implemented a repeated survival model to test the hypotheses. We found that the similarity between the images and text was likely to prolong the duration of crowdfunding success, but the richness of image content was likely to shorten the duration of crowdfunding success. Our study sheds light for project creators on effective communication strategies to increase crowdfunding success.

Friday, 4PM

FD02

Flagler - Lobby Level

Social Media: The Role of Influencers I

Contributed Sessions

Session Chair

Daniel Goetz, Rotman School of Management, Toronto, ON, Canada.

Friday, 4PM

FD02

Flagler - Lobby Level

Social Media: The Role of Influencers I

Contributed Sessions

1 Narcissistic Content and Social Media Engagement: Evidence from Instagram

Jana Gross, Renaud Lunardo, KEDGE Business School, Talence, France.

Narcissistic people increasingly use social media to communicate about their activities. Given their need for social recognition, they engage in physically risky activities because such activities are socially valued and, as such, attractive to be shared on social media. We refer to narcissistic content as content about activities that are physically risky but socially rewarding to share on social media. Little is known not only on how they communicate but also how this communication affects user engagement. A prestest shows that gym and fitness are among the activities for which most narcissistic content is likely to be shared. We coded a unique dataset of 1096 Instagram posts using the hashtag workout, using a combination of application programming interface and human coders, to study the association of narcissistic content with social media engagement. Using a log-linear version of the model, we find that the degree of narcissism of a profile is positively associated with engagement. The degree of narcissism significantly affects engagement with narcissistic content. This effect is amplified when content is posted by a consumer profile rather than a brand profile. Using more hashtags or emojis in narcissistic content does not significantly benefit engagement. Yet, using more hashtags significantly increases while using more emojis significantly decreases engagement when being posted by a profile with higher degree of narcissism. Interestingly, the length of a message negatively influences engagement with narcissistic content. This effect is not significantly reduced when the post was posted by a profile with a higher degree of narcissism. This seems surprising, because our data also shows that profiles with higher degree of narcissism have been found to use more characters and words in their messages compared to those with lower degree of narcissism. Our results inform marketers about how to leverage narcissistic content on social media. Moreover, our findings provide implications of how to craft narcissistic content on social media.

Friday, 4PM

FD02

Flagler - Lobby Level

Social Media: The Role of Influencers I

Contributed Sessions

2 Find the Right One: The Impact of Follower Growth on Consumer Engagement

Jia J. Cao[1], Sundar G. Bharadwaj[1], Fine F. Leung[2], [1]University of Georgia, Athens, GA, [2]The Hong Kong Polytechnic University, Hong Kong, Hong Kong.

Online Influencer Marketing is growing in importance as a strategy in social media platforms. The emergence of brands selecting online influencers to engage with followers to promote brands' products is because people trust people more than brands. With influencer follower size changing over time, consumers identify the trend and utilize the trend to make a decision. As a crucial component for indicating influencers' current performance and predicting future tendencies, it is necessary to understand the concept of follower growth. While research is growing, the issue of how follower growth rate affects consumer engagement is relatively unexamined. Moreover, it is still unclear as to what

mechanism(s) explain influencers' follower growth rate's effect on consumer engagement. This multi-method study combines an analysis of observational data from more than 1600 online influencers with lab experiments. The findings suggest an inverted U-shaped relationship between follower growth rate and consumer engagement. Brand diversification and influencer follower size exert moderating effects on the follower growth-engagement relationship with low level of brand diversity and high level of influencer follower size flattening the inverted U-shaped relationship. Moreover, lab experiments further confirm the predicted inverted U-shaped relationship. We theorize that the audience views influencers with continuously growing followers as current trends and this raises their curiosity to know more about influencers. On the contrary, when the growth rate is too fast, the audience perceives the phenomenon as an anomaly and as manipulative, increasing their skepticism. Moreover, followers are likely to feel distanced from such influencers to engage with.

Friday, 4PM

FD02

Flagler - Lobby Level
Social Media: The Role of Influencers I
Contributed Sessions

3 Influencing the Influencer with Influencer Encroachment

Luying Wang[1], Yuyang Zhao[2], Yunchuan Liu[3], [1]Tianjin University, Tianjin, China; [2]Nanjing University of Science and Technology, Nanjing, China; [3]University of Illinois Urbana-Champaign, Champaign, IL, Contact: luying7@illinois.edu

We study the effects of influencer encroachment on marketer engagement through word of mouth. An influencer encroaches on a seller's market by selling a substitutable product to followers. Influencer also posts the seller's product review to followers and allows sponsorship from the seller for the seller's product promotion. We use Bayesian Persuasion to formulate the effect of the influencer's review on consumers' belief updating when the influencer is the seller's competitor, and therefore a game theory model to formulate the interaction between influencer and seller on influencing management. Our results suggest that influencer encroachment plays an important role in the seller's influencing marketing on sponsorship volume and product sales. Improved persuasion efficiency is achieved through the closer position of the influencer's product to the seller's product and therefore more intensive competition between the influencer and seller. Interestingly, the seller may prefer to sponsor the influencer whose product is of a higher level of substitutability even follower's prior belief is higher. In addition, the influencer may produce the product on which the follower forms a lower level of prior belief even influencer knows the follower's taste in the firm's product because the influencer could earn a higher sponsorship from the seller to offset the potential loss on sales.

Friday, 4PM

FD02

Flagler - Lobby Level
Social Media: The Role of Influencers I
Contributed Sessions

4 Does Social Media Engagement Lead to Product Engagement? Evidence from Peloton

Daniel Goetz, Rotman School of Management, Toronto, ON, Canada. Contact: daniel.goetz@utoronto.ca

Social media engagement is a key performance metric for many firms. However, there is little evidence that more likes and comments leads to increased engagement with a firm's products, and there are few insights to guide firms on what types of content are best at converting social media engagement into product engagement. In this paper, I study the effect of social media marketing in the connected fitness industry. I collect the universe of posts from all fitness instructors employed by Peloton, a firm that creates fitness content for use on their connected fitness devices, and pair it with high-frequency data on the number of users engaging in workouts with specific instructors. I isolate plausibly exogenous variation in instructors' post timings, and find that a 1% increase in ``likes'' on an instructor's post leads to an 0.012% increase in bookings for that instructor's workouts, and that the effect decays quickly over time. In heterogeneity analysis, I explore what features of a post lead to greater likes, and what features lead to greater product engagement.

Friday, 4PM

FD03

Dupont - Lobby Level
Methods: Causal inference
Contributed Sessions

Session Chair
Ingrid Koch, [1]</sup

Friday, 4PM

FD03

Dupont - Lobby Level
Methods: Causal inference
Contributed Sessions

1 Addressing Endogeneity Using a Two-Stage Copula Generated Regressor Approach

Fan Yang[1], Yi Qian[2], Hui Xie[3], [1]NEOMA Business School, Reims, France; [2]University of British Columbia, Vancouver, BC, Canada; [3]Simon Fraser University, Vancouver, BC, Canada. Contact: fan.yang@neoma-bs.fr

A prominent challenge when drawing causal inference using observational data is the ubiquitous presence of endogenous regressors. The classical econometric method to handle regressor endogeneity requires instrumental variables that must satisfy the stringent condition of exclusion restriction, making it infeasible to use in many settings. We propose a new instrument-free method using copulas to address the endogeneity problem. Existing copula correction methods require nonnormal endogenous regressors: normally or nearly normally distributed endogenous regressors cause model non-identification or significant finite-sample bias. Furthermore, existing copula control function methods presume the independence of exogenous regressors and the copula control function. Our proposed two-stage copula endogeneity correction (2sCOPE) method simultaneously relaxes the two key identification requirements, and we prove that 2sCOPE yields consistent causal-effect estimates with correlated endogenous and exogenous regressors as well as normally distributed endogenous regressors. Besides relaxing identification requirements, 2sCOPE has superior finite-sample performance and addresses the significant finite sample bias problem due to insufficient regressor non-normality. 2sCOPE employs generated regressors derived from existing regressors to control for endogeneity, and is straightforward to use and broadly applicable. Overall, 2sCOPE can greatly increase the ease and broaden the applicability of using instrument-free methods to handle regressor endogeneity. We further demonstrate the performance of 2sCOPE via simulation studies and an empirical application.

Friday, 4PM

FD03

Dupont - Lobby Level
Methods: Causal inference
Contributed Sessions

2 Untangling the Mixture of Entrepreneurial Approaches Using Beta Regression

Sajeev Varki, Ling Hu, Jee Won (Brianna) Paulich, University of South Florida, Tampa, FL, Contact: linghu@usf.edu

Read et al., in a 2009 Journal of Marketing article, used theory from the field of entrepreneurship to demonstrate that marketing managers typically follow a causation thinking style where the goal is sacrosanct and the means to achieve the goal are focused on. This contrasts with successful entrepreneurs who follow an effectuation thinking style wherein goals are adapted to the means at hand. Based on Google citation counts, three scales are used to assess an individual's thinking style, but each of these scales promotes a false dichotomy when classifying an individual's decision-making style as either causation- or effectuation-oriented. However, a more realistic assessment would be to regard an individual's decision-making approach as a blend of both thinking styles. In this paper, we employ a beta regression model to demonstrate how the extant scales can be leveraged to model the extent to which an individual's decision approach is a mixture of causation and effectuation styles of thinking. Beta regression is ideal for analyzing the effect of individual and industry characteristics on an individual's relative reliance on the two decision styles (mixture component) since it allows such in the original scale without recourse to a non-linear translation such as logit. Additionally, we model the variance of the beta distribution and provide insights into which of the extant scales provides more precise estimates of the mixture components. Our study contributes to the entrepreneurial and marketing literature by combining both effectuation and causation approaches using beta regression.

Friday, 4PM

FD03

Dupont - Lobby Level
Methods: Causal inference
Contributed Sessions

3 Adaptive Sampling to Identify the Best Intervention in Factorial Designs

Marco Gregori, Warwick Business School, Coventry, United Kingdom. Contact: Marco.Gregori@wbs.ac.uk

Behavioral scientists and consumer researchers often want to identify the intervention with the largest effect size from a set of potential alternatives. Examples are identifying the most effective information to stimulate environmentally-friendly diets in nudge studies, or testing multiple webpage versions to increase click-through rates (A/B/n testing). These studies typically randomize many different interventions. Leveraging advances in operations research and machine learning, this research develops an adaptive algorithm to identify the best intervention with smaller sample sizes as compared to randomization, thus making data collection much cheaper. The algorithm assumes the data are collected in small sequential batches, which can be readily implemented with online experiments. The algorithm adaptively calibrates the allocation of subsequent interventions. Data collection is stopped once sufficient evidence is gathered that one intervention is significantly superior (or not) than alternatives. This requires only specifying a minimal effect size of interest. The algorithm is also suitable for accommodating interaction effects, which are common in consumer research. Simulation studies show the algorithm is competitive against alternative adaptive algorithms. A package to design adaptive experiments on Qualtrics is developed, automatically adjusting allocation of interventions over batches. An empirical application provides evidence on the effectiveness of the technique and illustrates implementing the algorithm in practice.

Friday, 4PM

FD03

Dupont - Lobby Level

Methods: Causal inference

Contributed Sessions

4 Consumer Trust and Misinformation Signals in Credence Goods Markets

Ingrid Koch[1], Noah Lim[2], [1]University of North Carolina at Chapel Hill, Chapel Hill, NC, [2]National University of Singapore, Singapore, Singapore. Contact: ingrid_koch@kenan-flagler.unc.edu

In contexts such as financial advising, healthcare and durables repair, consumers often rely on the services of sellers who are better informed. Sellers may capitalize on their superior knowledge by overcharging or overtreating consumers, and the incentive to do so increases as the information gap widens (Dulleck and Kerschbamer 2006). Consequently, sellers may be attuned to certain consumer signals that widen the perceived information gap and make overcharging even more attractive. In this paper, we empirically examine how two common consumer signals, trust and misinformation, affect opportunistic seller behavior and consumer outcomes. The effect of trust is disputed in the literature: While behavioral economics theory suggests that trust signals may induce guilt or positive reciprocity in sellers and consequently limit overtreatment and overcharging, conventional economic wisdom suggests that trust signals could have the opposite effect if they are perceived by sellers as a lack of consumer monitoring. We analyze consumer trust signals both when consumers are misinformed on the service they require and when they are not, to see whether there is a moderating effect of consumer misinformation. A pre-registered field experiment in the context of cell phone repairs finds that, interestingly, signaling trust has divergent effects, depending on whether consumers are misinformed on the phone repair they require: When consumers are not misinformed, then trust signals can reduce overcharging and result in lower price quotes for consumers. However, when consumers are misinformed, trust signals amplify overtreatment and overcharging, resulting in even higher price quotes compared to when consumers do not signal trust. A second field experiment using actualized taxi rides confirms that trust signals can exacerbate drivers' propensity to take detours when passengers are misinformed.

Friday, 4PM

FD04

Tuttle - Lobby Level

Advertising: General II

Contributed Sessions

Session Chair

Paul R. Messinger, University of Alberta, Edmonton, AB, Canada.

Friday, 4PM

FD04

Tuttle - Lobby Level

Advertising: General II

Contributed Sessions

1 Multi-Platform Search Advertising, Prominent Ad Positions, and Consumer Cross-Searching

Mohammad Zia[1], Ram C. Rao[2], [1]Chapman University, Orange, CA, [2]University of Texas- Dallas, Richardson, TX, Contact: zia@chapman.edu

Many online search or product platforms (such as Google and Amazon) offer advertising (ad) positions that are different in their "prominence" . The prominence of an ad position impacts the likelihood that the ad attracts a customer's attention or click. In this paper, we investigate advertisers and platforms strategies when two conditions exist in the market: (i) there are multiple competing platforms for advertisers to reach customers, and (ii) there are customers who visit and search across these platforms ("cross-searchers"). We investigate how customer visit patterns across multiple platforms impact advertisers' incentives to bid for ad positions and their profits. First, we find that, in the presence of customer cross-searching, sufficiently similar advertisers will "differentiate" by obtaining a more prominent ad position on one platform and a less prominent ad position on the other. However, if advertisers are sufficiently heterogeneous in their valuations for customers, the highest-value advertiser will be the one that obtains the most prominent sponsored position across all platforms. Second, if platform ad positions are not highly prominent, more cross-searching by consumers can lead to higher profits for both advertisers and platforms (a win-win situation). Thus, contrary to common wisdom in the literature, more customer searches and visits across several platforms can benefit advertisers and platforms. Third, we show that customer cross-searching can benefit advertisers by inducing competition between platforms and lowering the equilibrium reserve prices. Our work has important managerial implications for platforms and advertisers in marketplaces where customers can visit and search across multiple platforms.

Friday, 4PM

FD04

Tuttle - Lobby Level

Advertising: General II

Contributed Sessions

2 "I Want to be Her": How Advertising Stem-Designated Business Programs Can Impact Women's Major Choices and Improve Gender Equality?

Hanieh Sardashti[1,1], Satadruta Mookherjee[2,2], [1]University of North Florida, Jacksonville, FL, [2]Grenoble Ecole de Management, Grenoble, France. Contact: h.sardashti@unf.edu

Our study pertains to United Nations sustainable development goals 4-5: Quality of education and gender equality. The digital economy requires talents combining business acumen and technical expertise (e.g., analytics, machine learning, and coding) (Sambamurthy, 2020). AACSB has recognized investment in STEM programs as a critical imperative and a means of strengthening universities and business communities. However, the United States Census Bureau reported women represented only 27% of STEM Workers in the U.S. in 2021. We investigate the impact of social media advertising messaging on women's major choices that might enhance persuasiveness and encourage women in a business school setting, focusing on a STEM-intensive major with high-paying potential, Master of Business Analytics. Adopting the elaboration likelihood model (ELM), we contribute to the literature by studying the combined impacts of nonverbal communications (leader vs. passive) and message appeal (informational vs. emotional) featured in social media video ads on major choices of women. We know that watching a female lead may motivate other women (DeFrank Cole et al., 2014) through the role-model effect (Campbell & Wolbrecht, 2006). Also, cognitive dissonance (Festinger, 1981) resulted can drive adjustment of their choices. Hence, we also investigate the impact of potential mediators, such as motivation and cognitive dissonance, that can drive their choices. Our research design involves a series of randomized-controlled between-subjects lab and field experiments. Our research can potentially contribute to the ongoing debate regarding the underrepresentation of women in STEM-intensive majors, e.g., business analytics, marketing science/ analytics, supply chain analytics, and careers in high-paying industries such as technology. The results can be valuable for business schools and all colleges that offer STEM-intensive majors to address gender gap issues.

Friday, 4PM

FD04

Tuttle - Lobby Level

Advertising: General II

Contributed Sessions

3 Retail Media Platforms: Learning Treatment Effects Across Brands

Sebastian Gabel[1], Duncan I. Simester[2], Artem

Timoshenko[3], [1]Erasmus, Rotterdam, Netherlands; [2]MIT, Cambridge, MA, [3]Northwestern University, Evanston, IL, Contact: artem.timoshenko@northwestern.edu
We designed and implemented 357 coupon experiments for different brands on a media platform owned by a grocery retailer in Germany. We use these experiments to demonstrate that treatment effects for a (training) set of brands can be used to predict treatment effects for a different (implementation) set of brands. These predictions are accurate even when the brands are from very different categories. For example, we show that we can use food and drink brands (such as ketchup, oatmeal, and soda) to make predictions for non-food brands (deodorant, haircare, and toilet tissue). These predictions can improve the programmatic design of advertising campaigns. Using past experiments to decide whether a new brand should offer deep or shallow discounts in coupon campaigns, our proof-of-concept application yields $0.60 in incremental profit per 1,000 impressions, a 10% lift over the baseline. We expect these profit gains to scale, as large retailers often sell thousands of brands and distribute tens of billions of coupons annually.

Friday, 4PM

FD04

Tuttle - Lobby Level
Advertising: General II
Contributed Sessions

4 Ad Divergence Versus Relevance? How Advertising Creativity Affects Purchase Intention for New Products

Hui (Jason) Jiang[1], Paul R. Messinger[2], Yifei Liu[1], Zhibin Lu[1], Gang Li[3], [1]Zhejiang University of Finance and Economics, Hangzhou, China; [2]University of Alberta, Edmonton, AB, Canada; [3]Qilu University of Technology, Jinan, China. Contact: paul.messinger@ualberta.ca
Creative ads are vital for introducing new products to the market. The present research explores the impact of creative ads (divergent vs. relevant ads) on purchase intention for really new products (RNPs) and incrementally new products (INPs). A series of studies conclude that (a) divergent ads are more effective for promoting INPs; (b) relevant ads are more effective for promoting RNPs; (c) self-referencing mediates the joint effect of creative ads and product newness on purchase intention; and (d) there is an inverted-U-shaped relationship between self-referencing and persuasion. Theoretically, we argue that a moderate amount of self-referencing is particularly desirable - a "Goldilocks" region, where both strong affective and cognitive processing combine to produce high persuasion. Managerially, we provide guidance to creative ad managers to help reach the "Goldilocks" region when advertising new products.

Friday, 4PM

FD05

Gusman - Lobby Level
Marketing Implications of Social Inequality
Special Session

Session Co-Chair
Breagin Riley, 1</sup

Friday, 4PM

FD05

Gusman - Lobby Level
Marketing Implications of Social Inequality
Special Session

Session Chair
Kalinda Ukanwa, University of Southern California, Los Angeles, CA

Friday, 4PM

FD05

Gusman - Lobby Level
Marketing Implications of Social Inequality
Special Session

1 The Company You Keep: Measuring the Impact of Corporate Sociopolitical Activism on Ritual Participation

Breagin K. Riley[1], Rajdeep Grewal[2], [1]UNC Chapel Hill, Chapel Hill, NC, [2]University of North Carolina, Chapel Hill, NC, Contact: breagin_riley@kenan-flagler.unc.edu
In 2017, Papa John's informed stakeholders that sales were stagnant because strategic partner National Football League (NFL) mishandled a social justice protest to increase awareness of unequal policing of Black people. The literature

on how firm's corporates sociopolitical activism (CSA) affects employees (Wowak et al. 2022), performance (Chernev and Blair 2015, Hydock et al. 2020), and shareholders (Bhagwat et al. 2020, Hambrick and Wowak 2021), does not indicate spillover effects on marketing partners. We address this by focusing on concerns regarding social inequity to consider spillover effects of CSA. We examine the Sunday Watch Party Ritual (SWPR), when neighbors, friends, and colleagues gather to snack and watch televised NFL on Sundays. Changes in purchasing related to SWPR reflect changes in participants' ability to reap SWPR's psychological and social benefits (Garcia-Rada et al. 2019, Hobson et al. 2018). We identify households who can participate in SWPR every Sunday after the CSA and quantify changes in SWPR participation given community racial and political characteristics using Nielsen's scanner panel, geospatial fan-bases, NFL schedule, ZIP Code-level racial demographics, and election outcomes. We analyze change in quantity of household purchases of SWPR items relative to control groceries, breakfast items, before and after the CSA using synthetic difference-in-differences (Arkhangelsky et al. 2021), and regress these estimates on household and community characteristics (Lewis and Linzer 2005) in within and between households analysis. We find no change in SWPR items in all white neighborhoods, but as neighborhoods increase in racial heterogeneity, SWPR sales decreased, regardless of community political leanings. We interpret this to mean that Papa John's critique disrupted social bonding through SWPR in communities with a greater possibility of replicating inequality, regardless of community politics. Our research is among the first to theorize, document, and quantify heterogeneous spillover effects of DEI related CSA.

Friday, 4PM

FD05

Gusman - Lobby Level

Marketing Implications of Social Inequality

Special Session

2 Mitigating Gender Bias in Customer Relationship Management Through Salesperson Private Information

Minkyung Kim, UNC Chapel Hill Kenan-Flagler Business School, Chapel Hill, NC

Previous literature shows that male borrowers have advantages over female borrowers in consumer finance settings. We demonstrate whether this gender gap is due to (i) salespeople's statistical discrimination (agents' inference about customers' creditworthiness based on gender due to incomplete information about individual customers), (ii) salespeople's taste-based discrimination (agents' inherent disutility of managing relationships with the disadvantaged group of customers), and/or (iii) unobserved differences in quality of male and female customers. This study leverages a unique policy implemented by a microfinance institution, where loan officers are randomly transferred to new branches, and randomly assigned to customers to acquire and get repayments from. The policy allows us to observe exogenous variations in salesperson private information about individual customers and the branch-level gender composition of customers. The findings suggest that the difference in loan outcomes by customer gender can be largely explained by salespeople's incomplete information. Once salespeople interact with customers and obtain private information about borrowers' quality, they are less likely to differentiate borrowers by gender for loan acquisition and collection.

Friday, 4PM

FD05

Gusman - Lobby Level

Marketing Implications of Social Inequality

Special Session

3 The Political Ideology Gap in Perceptions of Racial Representation on Television

Katherine Christensen[1], Broderick Turner[2], Rajesh Bagchi[3], [1]Kelly School of Business, Indiana University, Bloomington, IN, [2]Virginia Tech, Blacksburg, VA, [3]Virginia Institute of Technology, Blacksburg, VA, Contact: kachris@iu.edu

Media (television, streaming platforms) reflects society, showing us who we are and what we value. Americans spend more time consuming television than they spend on all other leisure activities. Social justice movements (e.g., Black Lives Matter) have pushed entertainment studios to greenlight more inclusive products, leading to double-digit increases in racial diversity across the $344-billion television and $42-billion film industries (e.g., Bridgerton, Black Panther). This shift in content has spurred consumer backlash (see response to a Black actress appearing as the Little Mermaid). The current research investigates the role of political ideology in understanding consumer perceptions of racial diversity in television. In four studies (N = 2,798) we find a political ideology gap in consumer perceptions of racial diversity in television and streaming platforms. Conservatives overestimate Black share by 9 points (28%) and underestimate White share by 12 points

(50%) relative to an industry dataset. Liberals are more accurate (19%, 62%, all p’s < .001). Providing industry data on past White over-representation but not past Black under-representation improves present accuracy but does not reduce the ideological gap and may increase the partisan divide in beliefs about future change. We demonstrate a political ideology gap in perceptions of racial diversity initiatives. We find these effects over time and propose a data-driven intervention to elicit more accurate estimates. We hope our investigation provides more insight on the gap in diversity estimates and documents interventions that may help lower backlash.

Friday, 4PM

FD06

Marti - Lobby Level
Healthcare: Consumer Response
Contributed Sessions

Session Chair
Lachlan Deer, Tilburg University, Tilburg, Netherlands.

Friday, 4PM

FD06

Marti - Lobby Level
Healthcare: Consumer Response
Contributed Sessions

1 Modeling Health Reference Points to Explain Adverse Findings in Consumers’ Reactions to Front-Of-Package Nutrition Labels
David Olk, Koert Van Ittersum, Tammo H A Bijmolt, University of Groningen, Groningen, Netherlands.
Obesity remains a rising health threat worldwide (WHO, 2021). In response, so-called front-of-package (FOP) nutrition labels were introduced to guide consumers toward healthier food choices (Temple, 2020). Recent meta-analyses find that FOP nutrition labels generally have a positive effect on the healthiness of consumers’ choices by increasing *healthy* food choices (Cadario & Chandon, 2020; Ikonen et al., 2020). However, FOP nutrition labels largely fail to reduce *unhealthy* choices (Crosetto et al., 2019) and sometimes even increase the purchase intention of *unhealthy* products (Ikonen et al., 2020). Building on reference-dependence theory (Tversky & Kahneman, 1991), we offer a theoretical framework to understand the underlying mechanism and demonstrate in three experiments that consumers’ reference points - the expected healthiness of a product - significantly influence how a FOP affects label influences the food choice likelihood. In Study 1, we show that health gains and losses compared to the reference point influence consumers’ choices, with a larger effect for health losses (i.e., loss aversion). In Study 2, we differentiate between two types of reference points (memory-based versus stimulus-based) and find that they significantly differ from each other. In Study 3, we find that both types of reference points significantly influence consumers’ choices, and that the stimulus-based reference points have a greater effect.
This paper offers a number of contributions. First, it provides a missing understanding for the inconsistent effects of FOP nutrition labels on the choice likelihood of healthy versus unhealthy products. Second, it integrates reference-dependent theory into the health intervention domain to show how consumers’ reference points influence their choices when a FOP nutrition label is introduced. Third, it demonstrates that consumers rely more on stimulus-based reference points than memory-based reference points, which differs from findings in other disciplines. For society, it helps to design effective health interventions to reduce obesity.

Friday, 4PM

FD06

Marti - Lobby Level
Healthcare: Consumer Response
Contributed Sessions

2 Tv Series-Induced Hospital Choice: The Impact of Filming in Hospitals on Patient Demand
Hyesung Yoo, University of Toronto, Toronto, ON, Canada.
Contact: hyesung.yoo@rotman.utoronto.ca
Many TV drama series have scenes that take place in a fictional hospital but are filmed in a real hospital. I study whether filming a TV series in a real hospital influences patients’ hospital choice despite the hospital’s fictional identity in the series. Using data on TV drama series that were filmed in (real) hospitals and data on hospital admissions, I estimate a model that incorporates viewers’ exposure for each hospital. I find that filming scenes in a hospital has a positive and statistically significant effect on own-hospital demand for outpatient care but has no effect on inpatient care. I do not find a significant effect of competitors’ TV appearances on patient demand. I examine

heterogeneity in patient response and resulting health outcomes. Given controversies surrounding healthcare advertising, this finding has important implications for both healthcare providers and policymakers.

Friday, 4PM

FD06

Marti - Lobby Level
Healthcare: Consumer Response
Contributed Sessions

3 Impact of Price Transparency on Healthcare Prices

Hangcheng Zhao, University of Pennsylvania, Philadelphia, PA, Contact: zhaohc@wharton.upenn.edu

Healthcare costs in the U.S. are among the highest in the world. To solve this issue, the US government mandated price transparency rules and tools so that patients can compare health care prices across providers. However, the evidence on whether those rules and tools encourage price shopping and reduce overall healthcare spending remains limited and mixed. We use proprietary health insurance claims data of individuals in the United States to explain why the realized price savings do not conform the theoretical prediction that information induces shopping behavior that will lower prices. We focus on the set of government specified "shoppable" services, whose price information must be reported by hospitals. Despite a large degree of price dispersion, we find that patients' out-of-pocket price savings are on average less than 10% of the total visit price if patients only care about out-of-pocket prices, and much lower if they can only switch to places who are actually required to post prices. Insurance companies can save on average more than twice the out-of-pocket savings if patients switch to lower cost providers, which suggests that modifying cost-sharing incentives can be an effective way to nudge consumers to shop more effectively for healthcare. We apply a demand model and calculate the amount of money needed for consumers to switch.

Friday, 4PM

FD06

Marti - Lobby Level
Healthcare: Consumer Response
Contributed Sessions

4 Are You Okay? the Effect of a National Peer-Based Support Campaign on Mental Wellbeing and Suicide

Nicole Black[1], Lachlan Deer[2], David Johnston[1], Johannes Kunz[1], [1]Monash University, Melbourne, Australia; [2]Tilburg University, Tilburg, Netherlands. Contact: l.k.deer@tilburguniversity.edu

Mental ill health and suicide have damaging and costly consequences. Peers of individuals at risk of suicide play an important role in suicide prevention. However, evidence on the effect of programs that promote peer-to-peer mental health support in the general population is limited. We use quasi-experimental methods to examine whether a national peer-based support campaign, "R U OK? Day", affects mental health and suicide in the Australian population, in the month following the campaign. We use variation ina daily administrative death records (including by suicide and accidental poisoning) and surveys of mental health before and after the campaign over 9 years (2011-2019). We compare the changes in the years whenthe campaign was highly active to the years when it was not. We find no evidence of an effect on suicides or Google searches about suicides or crisis helplines. However, the campaign has a small positive effect on mental health (4% of SD), which is largely driven by males aged 25-49. The effects were stronger for people living in economically disadvantaged areas. We show that improved perceived social support is a likely mechanism. Campaigns that harness peer support may be an effective and relatively low-cost way toimprove mental wellbeing before individuals reach crisis point.

Friday, 4PM

FD07

Merrick 1 - Lobby Level
Influencer Marketing Track: Special Session 8
Special Session

Session Co-Chair
Maximilian Beichert, Mannheim, Germany.

Friday, 4PM

FD07

Merrick 1 - Lobby Level
Influencer Marketing Track: Special Session 8

Special Session

Session Chair
Andreas Lanz, HEC Paris, Paris, France.

Friday, 4PM

FD07

Merrick 1 - Lobby Level
Influencer Marketing Track: Special Session 8
Special Session

1 The Impact of Facial Femininity and Gender Identity on Perceptions and Behavior: Using Neural Networks for Controllable Stimuli Generation

Lan Luo, Olivier Toubia, Columbia Business School, New York, NY, Contact: ll3448@gsb.columbia.edu

Natural stimuli can be decomposed into many latent features, which are often highly correlated. This correlation makes it difficult to identify the impact of any single feature on outcomes of interest. To resolve this, we leverage disentangled representations from generative adversarial networks to manipulate visual stimuli on just a single attribute at a time. This paper applies this approach to address unique questions in gender discrimination with faces. We use GANs to generate realistic photos of men and women and then manipulate their facial femininity independent of other features like expression, background, pose, hair style, and accessories. Then, we devise a novel experimental design that allows us to separately identify the impact of facial femininity and gender identity on perceptions (e.g., trustworthiness) and behavior (e.g., display ad engagement).

Friday, 4PM

FD07

Merrick 1 - Lobby Level
Influencer Marketing Track: Special Session 8
Special Session

2 Sharing Atoms, Not Bits: Exploring Social Influence in the Food Sharing Economy

Moses Miller[1], Tamar Makov[2], Jacob Goldenberg[1], [1]Reichman University, Herzliya, Israel; [2]Ben-Gurion University, Beer-Sheva, Israel. Contact: moses.miller@runi.a.il

We explore the social influence mechanisms in the social sharing economy using unique data from a food-sharing platform (OLIO). OLIO is a peer-to-peer food-sharing platform, active in over 60 countries, that connects neighbors and local businesses to share surplus food and reduce waste. The platform has over six million users and has shared 25 million food portions. We analyze the activity in the network, both online messages and offline item pickups, over a five-year period. The study examines the network characteristics affecting sharing performance and the conditions under which interactions within the network may be translated to the physical efforts required to sustain the network. The research illustrates how the change in dyad *tie temperature* over time may affect the overall sustainable influence of sharing hubs in the network. Specifically, results show that a higher influence in the network results from a higher temperature (volume of messaging activity on network ties) rather than a higher degree centrality. More specifically, we investigate how changes in temperature can result in an increase in the entropy of the system, leading to more frequent and motivating food-sharing behaviors. Similarly, we present the relationship between activity and the distance associated with physical efforts in food sharing, such as the transportation of food items between network members. Our results may contribute to a deeper understanding of the factors influencing food-sharing behaviors in online platforms and inform the development of more sustainable sharing economy initiatives.

Friday, 4PM

FD07

Merrick 1 - Lobby Level
Influencer Marketing Track: Special Session 8
Special Session

3 Effectiveness of Influencer Marketing for Political Campaigns

Philip Kim, Beth Fossen, Indiana University, Bloomington, IN

Social media influencers became a major force in digital marketing with their capacity to drive consumer behavior. Such influence has attracted the attention of political campaigns, which have begun utilizing partnerships with influencers with the hopes of impacting voter preference. As political campaigns increasingly face restrictions with traditional digital ads on many crucial platforms, influencer marketing (IM) has emerged as an attractive digital advertising option for political candidates. Yet, little is known whether this marketing activity is effective in impacting voters. We investigate how sponsored influencer activities by political campaigns on Twitter impact voter preference, measured through daily polls on political candidates. Using data from the 2020 U.S. Democratic Party presidential primary, we find that positively valenced IM about the political candidates is associated with increases in voter preference for the candidate. We probe the mechanism behind these results and find that IM about political candidates is more effective when emotionality is strategically leveraged. Specifically, the impact of positively valenced IM is amplified if it is low in emotion. By contrast, negatively valenced IM is associated with decrease in voter preference for the attacked candidate, and its effect is amplified when highly emotional and futile when low emotion. Our research provides timely insights for political marketers on creating effective IM campaigns and for consumers to better understand the impact of political IM.

Friday, 4PM

FD07

Merrick 1 - Lobby Level

Influencer Marketing Track: Special Session 8

Special Session

4 Seeding Bandits

Caio Vieira[1], Andreas Lanz[2], Gui Liberali[1], [1]Rotterdam School of Management, Rotterdam, Netherlands; [2]HEC Paris, Paris, France. Contact: liberali@rsm.nl

We investigate whether content creators-right after platform registration-learn the effectiveness of seeding policies using a data set from a worldwide leading music platform. We develop a multiarmed bandit model to identify differences in learning patterns between successful and unsuccessful creators. Our analysis suggests that successful creators are very different in their initial selection of seeding targets, and also their activity level is, and remains, higher.

Friday, 4PM

FD08

Merrick 2 - Lobby Level

Frontiers of Applied Game Theory in Marketing

Special Session

Session Chair

Krista J J. Li, Indiana University, Bloomington, IN

Friday, 4PM

FD08

Merrick 2 - Lobby Level

Frontiers of Applied Game Theory in Marketing

Special Session

1 Disclosing Procurement Costs

Xi Li, University of Hong Kong, Hong Kong, Hong Kong. Contact: xili@hku.hk

Firms often need to decide whether or not to disclose their private costs. While the literature has explored firms' incentives to disclose exogenous and uncertain costs, little is known about when firms should disclose their endogenous costs. This paper studies the cost-disclosure strategies of competing firms whose inputs are sourced from and endogenously priced by upstream suppliers. We find, first, that cost disclosure affects not only market competition but also the motivations of suppliers in setting their input prices; as such, firms can make their disclosure decisions strategically to optimize their procurement costs. Second, we find that firms' disclosure decisions vary depending on both the nature of the competition and the market structure at hand. Third, we find that compared to voluntary disclosure, mandatory disclosure and nondisclosure both lead to higher market prices, injuring consumer surplus and social welfare. Together, our results underscore the distinct role that endogenous costs play in firms' disclosure decisions.

Friday, 4PM

FD08

Merrick 2 - Lobby Level

Frontiers of Applied Game Theory in Marketing

Special Session

2 Corporate Social Justice and Brand Development

Ganesh Iyer[1], Tongil "TI" Kim[2], Shubhranshu Singh[3], [1]University of California-Berkeley, Berkeley, CA, [2]University of Texas at Dallas, Richardson, TX, [3]Johns Hopkins University, Baltimore, MD, Contact: shubhranshu.singh@jhu.edu

Recent social justice movements have led firms to revisit their commitments to social justice and consumers to self-examine the extent to which they value it when buying products in the market. In this paper, we examine brands' incentive to invest in the diversity of workforce in a market where consumers are heterogenous in their preference for social justice and use the brand image of products they purchase to confirm their social-justice identities (specifically, the extent to which they care about the proportion of minorities in the workforce). We find that a brand's workforce composition critically depends on the role its image can play in reminding consumers about their social-justice identities. When consumers are more likely to rely on their purchase decisions to confirm their social-justice identities (1) a brand's likelihood of hiring minorities increases, and (2) brands are less likely to become niche brands that sell exclusively to a specific type of consumer. The implication is that as consumers' social justice identities become constantly accessible to them, brands may become more niche, targeting products exclusively to specific consumer types and hiring fewer minorities overall.

Friday, 4PM

FD08

Merrick 2 - Lobby Level

Frontiers of Applied Game Theory in Marketing

Special Session

3 Creation, Consumption, and Control of Sensitive Content

Yue Wu, University of Pittsburgh, Pittsburgh, PA

Censorship is widely observed in both developed and developing countries across the globe. Many policymakers and platforms filter out certain sensitive content to reduce its consumption and the corresponding social damage. However, censorship cannot perfectly eliminate all sensitive content, and content creators have various information transmission channels to circumvent censorship systems. In this paper, we construct a game-theoretic model to study creation, consumption, and control of sensitive content. Our paper seeks to answer whether policy interventions such as strengthening censorship can help a social planner reduce social harm caused by the consumption of sensitive content. First, we find that stricter censorship rules can lead to higher social harm. This is because strengthening censorship can motivate creators to choose a more harmful, secret channel rather than a less harmful, open channel to transmit messages. The larger consumption volume of sensitive content in the secret channel can generate greater social damage. We identify the conditions under which the unintended consequence of censorship occurs. Second, our paper shows that when creators need to incur a higher cost upon being censored out, social harm can increase. Third, our paper reveals that raising creators' content creation cost can result in higher damage for the society.

Friday, 4PM

FD08

Merrick 2 - Lobby Level

Frontiers of Applied Game Theory in Marketing

Special Session

4 Live Stream Selling and Pay-What-You-Want Tips

Krista J J. Li[1], Jianqiang Zhang[2], Xian Gu[3], [1]Indiana University, Bloomington, IN, [2]Jiangnan University, Wuxi, China; [3]Indiana University, Bloomington, Bloominton, IN

Live stream influencers entertain viewers with various content to receive tips and sell products for firm commissions. We examine how viewers with social and inequality considerations make tipping and purchase decisions, whether an influencer should sell products, and how a firm selects influencers and sets prices and commissions to sell products in the surging live streaming context. Our analysis reveals the interaction between tipping and purchase decisions on the demand side and between product selling and tip income on the supply side, which leads to the following insights. First, some rational viewers make seemingly irrational and impulsive purchases: excited about the live stream content, they buy products that are not worth the price. Moreover, buyers pay more (less) tips to reward (penalize) the influencer for promoting appealing (unappealing) products. Second, selling products during live streaming reduces the influencer's tip income. Consequently, only influencers with enough followers should sell products. Third, the firm should offer price discounts when selling products during live streaming, and the discounted price should change with the influencer's number of followers nonmonotonically. When selling through influencers with more followers, the firm's profit increases and then decreases, which suggests that the firm does not necessarily benefit from working with a more prominent influencer. Observations from 1.3 million TikTok live stream sessions support the theoretical findings.

Friday, 4PM

FD09

Grove - Lobby Level

Non-profit Marketing: Pro-social behavior

Contributed Sessions

1 The Influence of Charity's Transparency and Donor's Commitment on Willingness to Donate

Triza Mudita, Tengku Ezni Balqiah, Faculty of Economics and Business, Universitas Indonesia, Depok, Indonesia.

This paper presents theory and experiments where people's willingness to donate is affected by how transparent the charity is, depending on the type and level of individual commitment, which is measured by how far the donation amount is from an internal or external reference. Separated surveys revealed that the more transparent a charity is about past campaigns, the more the people are willing to donate. However, transparency has different effects depending on the individual's type of commitment (e.g., internal or externally sourced). The effect also varies depending on how high the level of a certain type of commitment is. This effect was theorized by how well an individual's source of reference for the donation amount and the charity's transparency in providing information aligns or complement each other. The findings are useful to find a way to increase donors' willingness to donate, understand donors' thought processes in using donation references, and emphasize the importance of transparency in a charity campaign.

Friday, 4PM

FD09

Grove - Lobby Level

Non-profit Marketing: Pro-social behavior

Contributed Sessions

2 The Differences in Donation Decision in Fundraising Competition Between Low- and High- Credibility Organizations

Merav Weiss-Sidi[1], Gil Peleg[2], Gal Gutman[1], Oded Lowengart[3], [1]Ben-Gurion University of the Negev, Beer-Sheva, Israel; [2]Sy Syms School of Business - Yeshiva University, NYC, NY, [3]Ben Gurion University, Beer Sheva, Israel.

When donors face donation dilemmas, they integrate information delivered by prosocial organizations into their donation decision process. Prior research showed that the organization's credibility is one of the main factors when donors evaluate organizations for donations. However, the role of an organization's credibility in a competitive context is yet to be determined. In this paper, across two studies, we explore differences in donation decisions between low- and high-credibility organizations. In the first study, using a choice-based conjoint experiment, we show that donors assign higher importance to the donation impact when considering donations for low- (vs. high-credibility) organizations to compensate for the lack of credibility. In the second study, we use diagnostic information to assess differences in evaluation and choice formation processes. Our results suggest that low-credibility organizations can compensate for their lack of reputation with increased impact; However, it will only affect choice processes after building their credibility. We also discuss managerial implications for low- and high-credibility organizations, where organizations should adopt a differentiated communication strategy that communicates impact to build the organization's credibility, and only after the credibility was achieved, communicate other characteristics.

Friday, 4PM

FD10

Oxford - Level 2

E-Commerce: General II

Contributed Sessions

Session Chair

Jingcun Cao, The University of Hong Kong

Friday, 4PM

FD10

Oxford - Level 2

E-Commerce: General II

Contributed Sessions

1 The Value of Co-Branded Credit Cards in Online Retailing: Empirical Evidence from Hktvmall

Huijun Chen[1], Kristiaan Helsen[1], Haoyu Liu[2], [1]HKUST, Kowloon, Hong Kong; [2]City University of Macau, Taipa, Macao.

How do co-branded credit cards affect consumer behavior in online retailing? We investigate this problem by leveraging a quasi-experiment involving the issue of a co-branded credit card by Citibank and HKTVmall. We perform difference-in-differences analysis with matching. We show that the co-branded credit card increases consumers' ordering frequency and size.

Friday, 4PM

FD10

Oxford - Level 2

E-Commerce: General II

Contributed Sessions

2 A Sales Prediction Model for Digital Business Start-Ups: How to Allocate Marketing Budgets to Increase Sales?

Sungha Jang[1], Jae-Eun Kim[2], Jongik Kim[3], [1]San Francisco State University, San Francisco, CA, [2]The University of Auckland, Auckland, New Zealand; [3]Delivered Korea, Busan, Korea, Republic of. Contact: shjang@sfsu.edu

Once a digital business start-up successfully develops its new products and services, the next critical step is to predict its sales in the future for investor relations (IR). While it is a standard industry practice to predict sales amounts for at least three years for IR, it is difficult for a start-up to accurately predict its sales even after one year. One of the primary reasons is that a start-up does not have sufficiently long datasets regarding sales, cash flow, and inventory for prediction. Thus, it is challenging for a start-up to provide the right investment information to stakeholders. We propose a sales prediction model based on the number of new members, online advertising amounts, and consumer reviews on social media for a short period. By considering the different purchase patterns of new and existing members in terms of recency, frequency, and monetary value (RFM), we predict reliable long-term sales amounts, which can be updated every month. Our study provides marketers in digital service business areas with a feasible prediction approach and an optimal marketing strategy for allocating budgets to online advertisements and customer promotions over time.

Friday, 4PM

FD10

Oxford - Level 2

E-Commerce: General II

Contributed Sessions

3 E-Tailing with Instant Return Credit

Rong Li[1], Duo Shi[2], [1]Syracuse University, Syracuse, NY, [2]The Chinese University of Hong Kong, Shenzhen, Shenzhen, China. Contact: shiduo@cuhk.edu.cn

Many e-tailers recently adopted a new service -- offering Instant Return Credit (IRC), an in-store credit, immediately upon an online return claim, without requiring the return to be received or verified. Improving consumers' temporary budgets, IRC helps resolve the mismatch between products and consumer tastes and thus convert online returns into new sales. However, it is prone to costly fake returns from opportunistic consumers. We take the initiative to study whether and how retailers should adopt IRC and its implications for pricing strategy, profit, and consumer welfare. We build a stylized economic model to capture the basic dynamics and trade-off of IRC. The model focuses on a retailer selling two horizontally differentiated products, facing consumers with heterogeneity in tastes, budget levels, and fake-return motivation types (genuine or opportunistic). We study and compare three different cases of IRC: no, uniform, and contingent (on consumer type). We find that, depending on product category, the retailer may offer full, partial, or zero uniform IRC to consumers; when making IRC contingent, full credit is offered to genuine consumers and partial/zero credit is offered to opportunistic consumers. To cope with IRC, the retailer should prepare to switch to {\it asymmetric} pricing, although the two products are symmetric (in cost, consumer valuation, and market size); moreover, a higher product cost may lead to a lower price. The value of IRC is higher for products with lower cost, lower consumer valuation for a taste-product mismatch, and a lower proportion of opportunistic consumers, whereas making IRC contingent is more valuable when these measures are intermediate. Finally, IRC may hurt consumers for low-cost products, whereas making it contingent normally rewards genuine consumers and penalize opportunistic consumers.
Our results provide stakeholders with an initial guidance and insights on the adoption, implementation, and impacts of instant return credit.

Friday, 4PM

FD10

Oxford - Level 2

E-Commerce: General II

Contributed Sessions

4 Delivery Charge on Business Sustainability: Evidence from a Grocery E-Commerce Platform

Jia Liu[1], Jingcun Cao[2], Tao Han[3], [1]Hong Kong University of Science and Technology, Hong Kong, Hong Kong; [2]The University of Hong Kong, Hong Kong, Hong Kong; [3]The University of Hong Kong, Hong Kong, Hong Kong. Contact: jcao@hku.hk

Online shopping and home delivery are transforming the grocery market such that a rapidly increasing number of consumers shift to online grocery shopping. In this thriving market, the delivery charge has become one key consideration for online grocery platforms and consumers. Free delivery services are usually offered first to attract consumers and expand the market for growth hacking. However, it intensifies the operation cost and carbon emissions as consumers may take advantage of the free shipping and frequently place small orders for multiple delivery occasions, rather than buying things at once. The caused profit and environmental problems are not neglectable for business sustainability. It is expected that an appropriate delivery fee could moderate the loss of an exceeding number of small orders while not harming the total revenue. To understand the role of delivery fees in online grocery platforms, we collect large-scale and detailed transaction and delivery data from a leading online grocery platform in China. It started imposing minimal spending requirements for free shipping after its 6 months of free delivery service. We apply a regression discontinuity in time (RDiT) design to identify the causal effect of introducing a delivery fee on a set of business and environmental outcomes. We find that the delivery fee indeed leads to an expected decrease in total order volume, while overall quantity sales and revenue remained did not significantly change. We also find that the carbon emission burden is relieved due to the reduction of inefficient delivery of a massive number of small orders. We further examine how these treatment effects vary across consumer segments and product categories. Our research findings not only create knowledge for researchers but also provide important managerial implications for practitioners in the online grocery industry.

Friday, 4PM

FD11

Cambridge - Level 2

ML: Text and Image Analytics

Contributed Sessions

Session Chair

Mayank Nagpal, Indian Institute of Management, Bengaluru, India.

Friday, 4PM

FD11

Cambridge - Level 2

ML: Text and Image Analytics

Contributed Sessions

1 Introducing Machine-Learning-Based Data Fusion Methods for Analyzing Multimodal Data and an Application of Measuring Trustworthiness

Nan Jia[1], Xueming Luo[2], Zheng Fang[3], [1]University of Southern California, Los Angeles, CA, [2]Temple University, Philadelphia, PA, [3]Sichuan University, Chengdu, China. Contact: luoxm@temple.edu

Multimodal data—unstructured text, image, and audio data that interdependently characterize the same source—offer a wealth of information for strategy researchers. We discuss the tradeoffs of using text versus non-text data and the conditions for incorporating non-text data to increase predictive accuracy. We then introduce cutting-edge deep machine learning and data fusion methods that holistically account for both intra- and inter-modality interactions to automate the analyses of video data, the most prevalent form of multimodal data. We provide empirical demonstration by measuring the trustworthiness of sellers in live streaming commerce on TikTok and showing its importance to making sales. This study expands the empirical toolbox for unstructured multimodal data analysis and advocates for data fusion in multiple areas of strategy research.

Friday, 4PM

FD11

Cambridge - Level 2

ML: Text and Image Analytics

Contributed Sessions

2 Viewing Through the Lens of Information Representation: Framing Prosocial Products for Crowdfunding Success

Amrita Dey, Tianyu Gu, Stephen J Carson, University of

Utah, SALT LAKE CITY, UT, Contact: amrita.dey@utah.edu
Consumers today are more aware of social and ecological fairness, leading to an increasing interest in prosocial products. Utilizing the context of crowdfunding, this study investigates the performance of prosocial projects compared to their non-prosocial competitor. To better understand the representation of prosocial messages in the product description, we incorporate a series of information representation variables, including image concreteness, text concreteness, and image-text information fit into the empirical study. The preliminary finding suggests that prosocial projects raise more funding than their competitors with similar funding scale, entrepreneur experience, and information representation. Further studies look at the moderating effect of information representation on the advantage of prosocial products, as well as using difference-in-difference to better support the validity of the observed advantage of prosocial products.

Friday, 4PM

FD11

Cambridge - Level 2
ML: Text and Image Analytics
Contributed Sessions

3 From Words to Indices: Measuring Digitalization from Corporate Reports

Mayank Nagpal[1], Andrew Petersen[2], Arvind Rangaswamy[3], [1]Indian Institute of Management, Bengaluru, India; [2]Penn State University, State College, PA, [3]Pennsylvania State University, University Park, PA, Contact: mayank.nagpal@iimb.ac.in
Computer-Aided Text Analysis (CATA) has emerged as a favored alternative to traditional survey methods for measuring strategic constructs as it eliminates the need for accessing senior management for surveys. However, dictionary-based CATA methods are challenging to replicate as they require intensive manual effort from domain experts. To remedy this, we develop a readily replicable method for measuring Strategic Orientations (SOs) such as Market, Customer, or Digital Orientation of a firm by analyzing text from its annual 10-K reports. We leverage the power of Parts of Speech tagging and the Supervised Latent Dirichlet Allocation (sLDA) model to identify differences in the language of published articles that focus on the SO and those that focus on other topics. Using these differences, we compiled a weighted dictionary of terms (words or bigrams) that reflect the strategic intent of senior management regarding the SO of interest. The weighted proportion of text in a firm's annual report, which overlaps with the dictionary terms, represents the SO score. We demonstrate the validity and value of our approach by measuring the construct of Digitalization for a sample of 204 firms across five industries and ten years. Our digitalization score captures an enterprise-wide view of a business's digital transformation, including automation, innovation, and capability enhancements. We show that our score correlates positively with an established digitalization score (rho =0.36) and, based on panel regressions, is related positively to indicators theoretically related to Digitalization, i.e., technology (beta =0.08) and productivity (beta =0.23). We also find that our score predicts existing indices better than scores calculated using the traditional survey approach (rho =0.36 vs. 0.23) and using alternative CATA approaches such as expert-based dictionary creation (rho =0.36 vs. 0.24) and the Doc2Vec model (rho =0.36 vs. 0.28). Finally, we conclude with observations about how the proposed score can help better understand firms' digital transformation trends.

Friday, 4PM

FD12

Trinity - Level 2
Political Marketing: Brands and Consumers
Contributed Sessions

Session Chair
Hyunhwan Lee, California State University Long Beach, Long Beach, CA

Friday, 4PM

FD12

Trinity - Level 2
Political Marketing: Brands and Consumers
Contributed Sessions

1 Political Digital Advertising on Social Networks: Role & Strategies of Influence

christine BALAGUE, Institut Mines-Télécom Business School, PARIS, France. Contact: christine.balague@imt-bs.eu
This research aims at studying the impact of marketing strategies on politics. More specifically, we analyzed the role of political digital advertising on social networks during a

European presidential campaign. Using data from Meta's advertising libraries, we first provide a categorization of the political advertising posts and identify four different mechanisms: political speech, social advocacy, public rumor, and business logic. We also reveal a « grey zone » of paid digital advertising during the campaign yet forbidden by regulation. We second analyze the dynamics of the campaign, by analyzing digital advertising content, more specifically the discourses, the distribution of the themes, and the words mentioned in the posts. By using social network analysis, we point out the hidden strategies of influence of the different actors. We also reveal that political digital advertising data available via digital platforms APIs constitute a rich database to better understand the relationship between the advertising business and politics during a political national campaign, more particularly in countries strictly regulated in terms of political advertising. Finally, we also provide a contribution summarizing the limits of the current databases opened by digital platforms to researchers and introduce the new opportunities for research of the European new regulation Digital Services Act

Friday, 4PM

FD12

Trinity - Level 2

Political Marketing: Brands and Consumers

Contributed Sessions

2 Consumer Political Ideology and Online Word-Of-Mouth

Javad Mousavi[1], Surendra N. Singh[2], [1]University of Arkansas, Fayetteville, AR, [2]University of Kansas, Lawrence, KS, Contact: mousavi@uark.edu

Political ideology plays a vital role in shaping a wide range of consumers' behaviors in the marketplace. Specifically, previous research has shown that political identity affects customer satisfaction and complaining behaviors. In this research, the authors demonstrate that consumers with different political ideologies are not equally likely to complain about various product or service attributes. Specifically, the authors use a unique database of online reviews in conjunction with a county-level indicator of political ideology and lab experiments to show that conservative consumers are more likely to complain about their interpersonal interactions with firms' employees during a product or service delivery but not about the outcomes (i.e., product quality). Since political ideology is an easily observable variable, the present research will help managers customize their offerings and allocate their resources more effectively.

Friday, 4PM

FD12

Trinity - Level 2

Political Marketing: Brands and Consumers

Contributed Sessions

3 Political Parties' Stances on Different Topics Impacting Their Future Success in the Eye of Individuals

Mohammad Hosein Tavakoli[1], Thomas S. Gruca[2], Vahid Karimi Motahhar[2], [1]Warwick Business School, Coventry, United Kingdom; [2]University of Iowa, Iowa City, IA, Contact: Mohammad-Hosein.Tavakoli@warwick.ac.uk

Political parties have platforms, positions, and plans that they share with potential voters to gain their support on election day. Before an election, polls will ask potential voters what issues are most important while exit polls try to determine what topics brought out supported on election day. However, these measures of the importance of a party's political positions reflect the self-interests of voters. In this study, we consider alternative measures of importance from political prediction markets. In these markets, traders try to make money by buying and selling contracts associated with the success or failure of political parties on election day. Participants in a political prediction market are rewarded for trading with their heads, not their hearts. The setting for our study is the 2015 UK general election and a set of 6 prediction markets designed to predict the number of seats won by members of the Conservative, Green, Liberal Democratic, UK Independence Party, Scottish National Party, and Labour Party. This is an especially interesting set of election prediction markets since the outcome - the expansion of the Conservative majority - was unexpected in both the polls and prediction markets. Our data comes from MediaPredict, a commercial prediction market company. A unique aspect of these prediction markets is that each trader is asked to provide a written justification for each trade. We apply text analysis techniques, i.e., BERT and topic modeling, to investigate the reasoning traders use (and emotions they express) when betting on the future success (or failure) of a given party. To characterize the various political topics driving trader behavior, we use topic modeling across all the markets to examine party-specific and more general topics that influence trader predictions of the outcomes on election day.

Friday, 4PM

FD12

Trinity - Level 2

Political Marketing: Brands and Consumers

Contributed Sessions

4 Predicting Micro-Geo Preference: Evidence from U.S. Presidential Elections and Brand Performance

Aiden Lee[1], Joseph Johnson[2], Gerard J. Tellis[3], [1]California State University Long Beach, Long Beach, CA, [2]University of Miami, Coral Gables, FL, [3]University of Southern California, Hacienda Heights, CA, Contact: aiden.lee@csulb.edu

Politicians, like brands, compete and win supporters location by location, especially in the U.S. where indirect voting by districts determines winners. Therefore, political campaigns need micro-geographic monitoring and management. The abundance, spontaneity, micro-temporal, and micro-geographic granularity of tweets makes Twitter a suitable platform for performance analysis and campaign management. So, can one predict elections using Twitter? What would be a suitable model for such predictions? How do such predictions compare with existing polls?The authors address these questions by estimating preferences at the micro-temporal and micro-geographic levels. The model correctly predicts the winner of US Presidential elections with 87% accuracy in 2016 and 90% accuracy in 2020, respectively. Among the critical swing states that surveys often mispredict, the model achieves 83% accuracy in 2016 and 81% accuracy in 2020, but only 42% and 73% respectively for the average of polls.These findings have four implications for brands and political candidates. First, analysts and managers need to consider consumer preferences expressed in social media for predicting market outcomes. Second, they need to estimate the spatial spread of social influence. Third, election analysts need to measure micro-geographic voter preferences. Last, modeling micro-geographic preferences in social media yields superior prediction than polls.

Friday, 4PM

FD13

Escorial - Level 2

Choice Modeling: General II

Contributed Sessions

Session Chair

Ana Martinovici, Rotterdam, Netherlands.

Friday, 4PM

FD13

Escorial - Level 2

Choice Modeling: General II

Contributed Sessions

1 Modeling Reference Dependence Effect and Regulatory Orientation

I Hsuan Chiu[1], Gary J. Russell[2], [1]University of Wisconsin-Milwaukee, Milwaukee, WI, [2]University of Iowa, Iowa City, IA, Contact: chiui@uwm.edu

One major implication of the value function in prospect theory is loss aversion: losses loom larger than gains of the same size. The empirical examinations of loss aversion from consumer brand choice decisions, however, provide mixed results. For example, Bell and Lattin (2002) show that loss aversion is reduced or disappears when taking into account consumer heterogeneity. In this research, we show that regulatory focus theory can account for the heterogeneity in the reference dependent effect: consumers in a promotion-oriented mindset show a weaker response to loss aversion comparing to those in a prevention-oriented mindset. We consider a decision context where consumers rely on external reference points. To capture the reference dependence effect, we use the random regret minimization (RRM) model developed by Chorus (2012). The RRM model describes a decision process that compares attributes of an alternative to that of all other alternatives in the consideration set. RRM allows for flexibility in evaluating reference dependence effects across all attributes and alternatives, and provides a framework for incorporating regulatory orientations into the model specification. Using data from a choice experiment, we demonstrate that prospect theory describes the within-individual differences with respect to losses and gains, while regulatory focus theory describes the between-individual differences.

Friday, 4PM

FD13

Escorial - Level 2

Choice Modeling: General II

Contributed Sessions

2 Understanding Consumer Expenditure Through Gaussian Process Choice Models

Samuel Levy, Alan Montgomery, Carnegie Mellon University, Pittsburgh, PA, Contact: silevy@andrew.cmu.edu

Consumers change their choice as expenditures within a category increase. Traditional choice models usually make restrictive structural assumptions to specify the expenditure elasticity. This imposed functional form of utility strongly influences the range of estimable substitution patterns across goods. Consumers with highly nonlinear preferences may have consumption thresholds in which buying patterns dramatically change when price or budget changes. Understanding these thresholds with a flexible utility-based model could lead to improved pricing and promotion decisions. Using Gaussian process priors on utility functions, we relax the functional form of both inside goods and outside good, within the context of constrained utility maximization. We estimate a general direct utility choice model for simultaneous purchases within a product category. We build a hierarchical model by borrowing information from a parametric functional form that constitutes an informative prior at the individual level. Our model captures non-linear rates of satiation and precise baseline preferences that traditional non-homothetic parametric models fail to capture by assuming a given functional form of utility. The proposed model automatically detects non-linear patterns of consumption from the data and provide a more precise statistical inference.

Friday, 4PM

FD13

Escorial - Level 2

Choice Modeling: General II

Contributed Sessions

3 Modeling Demand for Configured Durables when Financing Options are Available

Tetyana Kosyakova[1], Thomas Otter[2], Arash Laghaie[3], [1]Frankfurt School of Finance & Management gGmbH, Frankfurt, Germany; [2]Goethe University Frankfurt, Frankfurt, Germany; [3]Nova School of Business and Economics, Lisbon, Portugal.

Durables such as cars can often be configured, and equally often, a choice between the financed and non-financed (cash) purchase is possible. Modeling demand in these settings is challenging for several reasons: i) the number of possible combinations, i.e., the size of the implied choice set, is large, ii) the typical configurator combines multinomial choices (e.g., the choice of a car model or engine) with menu choices (optional features that can be freely combined), iii) possible configurations may span enormous price ranges, and iv) configurators for high-ticket items often include financing options. The resulting choice surface is both extremely high-dimensional and highly structured. We extend the model proposed in Kosyakova et al. (2020) to meet these challenges. We construct an exchange-algorithm that handles high-dimensional combinations of multinomial and menu choices that determine the final configuration to infer individual preferences for items and (potentially highly structured) demand interactions. Further, we incorporate liquidity constraints into the model that we again infer without computing the likelihood function, which is prohibitive in all but the smallest configurators. The underlying economic model of choice allows for two liquidity constraints - the maximum cash purchase price and the maximum monthly payment for a financed purchase - possibly constraining the feasible set of choices. A cash purchase requires a higher amount of money upfront explaining choices of financing options. We illustrate our model in a case study that uses configurators in a discrete choice experiment in the car category. We demonstrate implications from ignoring budgetary restrictions and perform counterfactual demand analysis for cash and financing options.

Friday, 4PM

FD13

Escorial - Level 2

Choice Modeling: General II

Contributed Sessions

4 Heterogeneity in Attention Allocation Reflects Preference Heterogeneity

Ana Martinovici[1], Rik Pieters[2], Ralf Van der Lans[3], [1]Erasmus University, Rotterdam, Netherlands; [2]Tilburg University, Tilburg, Netherlands; [3]Hong Kong University of Science & Technology-HKUST, Kowloon, Hong Kong. Contact: martinovici@rsm.nl

Consumers selectively attend to brand information when choosing from a set of multi-attribute alternatives. The eye-movements that consumers make during these decision processes reflect their allocation of attention to the different brands and attributes. We propose a methodology that uses eye-tracking information to extract heterogeneous preferences when individual consumers make a single choice. Our model is calibrated on eye-tracking and choice data from studies on consumer choice between multiple complex alternatives (e.g., laptops, TVs) for which information is displayed side-by-side in an attributes-by-brands matrix. The results show that attention reflects the value that consumers assign to attribute levels and their importance, and thus extend recent work in marketing (Martinovici, Pieters, Erdem 2022) that used attention as a reflection of each brand's overall utility and choice probability. The findings have implications for decision theory, preference measurement, and online retailing.

Friday, 4PM

FD14

Alhambra - Level 2

UGC: Reviews II

Contributed Sessions

Session Chair

Lu Zhao, Chinese Academy of Mathematics and Systems Science, Beijing, China.

Friday, 4PM

FD14

Alhambra - Level 2

UGC: Reviews II

Contributed Sessions

1 Analyzing Online Reviews: Understanding the Knowledge vs. Preference Tradeoff

Stephen L. France[1], Sanjoy Ghose[2], [1]Mississippi State University, Mississippi State, MS, [2]University of Wisconsin-Milwaukee, Milwaukee, WI, Contact: sfrance@business.msstate.edu

Over the last two decades, the growth of online platforms that allow consumers to review products and services, has been explosive. In academia, the topic of online reviews and its more general parent topics of social media marketing and user generated content are mainstays of empirical academic marketing.
However, from a practical standpoint, there is no fixed methodological best practice on how to treat online review data. This is the focus behind this research, in which we discuss the analysis of online review data with respect to the information contained within the reviews. Marketing has a long tradition of preference analysis, and most online review research use models that draw on the preference structure of the individuals writing online reviews. Do these online review data contain some true latent measure of knowledge or wisdom, a measure of individual preferences or possibly both?. We feel there is a need to therefore consider the usage of knowledge-based models for assessing online review data.
To examine the issues raised above, we utilize methods from the psychometric literature to create measures of the relative knowledge and preference in review scores. We relate these measures to attributes of different kinds of products, and we use this information to give guidance on the methodology to use to analyze and interpret online review scores for different product classes.

Friday, 4PM

FD14

Alhambra - Level 2

UGC: Reviews II

Contributed Sessions

2 Protecting the Anonymity of Online Users Through Bayesian Data Synthesis

Cameron D. Bale, Drexel University, Philadelphia, PA, Contact: cdb327@drexel.edu

Privacy concerns emerge when online users of popular user-generated content (UGC) platforms are identified through a combination of their structured data (e.g., location and name) and textual content (e.g., word choices and writing style). To overcome this problem, we introduce a Bayesian sequential synthesis methodology for organizations to share structured data adjoined to textual content. Our proposed approach enables platforms to use a single shrinkage parameter to control the privacy level of their released UGC data. Our results show that our synthesis strategy decreases the probability of identification of a user to an acceptable threshold while maintaining much of the textual content present in the structured data. Additionally, we find that the value of sharing our protected data exceeds that of sharing the unprotected structured data and textual content separately. These findings encourage UGC platforms that wish to be known for consumer privacy to protect anonymity of their online users with synthetic data.

Friday, 4PM

FD14

Alhambra - Level 2
UGC: Reviews II
Contributed Sessions

3 Content Provision on Ugc Platforms

Wilfred Amaldoss[1], Woochoel Shin[2], [1]Duke University, Durham, NC, [2]University of Florida, Gainesville, FL, Contact: wshin@ufl.edu

Consumers visiting platforms that host user-generated content (UGC) not only consume content but also generate content by investing time and effort. This paper seeks to examine a UGC platform's content provision strategy: how a UGC platform can motivate consumers to generate UGC and how it can manage the balance between UGC and platform's own content. As UGC and the platform's own content perform the same function, one may be inclined to think that the two types of content are substitutes. Our analysis shows that they could function as strategic complements. This is because increasing the platform's own content provision raises the quality of content on the platform, motivates more consumers to join the platform, and increases the total UGC provision on the platform. The fact that consumers dislike advertising could lead us to believe that consumers will be less motivated to generate UGC if ad space increases. On the contrary, we find that consumers may be motivated to increase UGC provision to make up for the loss in enjoyment and increase the overall quality of contents on the platform. The public good characteristics of UGC could prompt us to think that UGC provision on the platform will be less than the socially optimal level. Our analysis identifies conditions when the total provision of UGC can be more than the social optimum. One may wonder whether it is profitable for a UGC platform to completely dispense with its own content. We find that it is always profitable for the UGC platform to offer some of its own content. This is because when consumers spend more time consuming the content, the platform can monetize their attention and earn higher ad revenue.

Friday, 4PM

FD14

Alhambra - Level 2
UGC: Reviews II
Contributed Sessions

4 Research on the Differences Between Users- and Customers-Generated Content in Tourism E-Commerce Platform

Jialing Li[1], Lu Zhao[2], He Zhu[2], MIngli Zhang[3], Shouyang Wang[2], [1]Chemical Industry Press, Beijing, China; [2]Chinese Academy of Mathematics and Systems Science, Beijing, China; [3]Beihang University, Beijing, China. Contact: zhaoluzl@buaa.edu.cn

Recently, tourism e-commerce platforms have attracted non-financial-oriented users to comment. The users and customers are different regarding the financial bond with the tourism e-commerce platforms. Therefore, the content generated by users is likely to be different from those of customers. As they carry divergent experience information toward the destination, it would be significant for tourism platforms and destination managers to better understand the content differences generated by users and customers. Consequently, we gathered the data from ctrip.com, which comprised 18244 reviews and 83244 pictures. We also conceptualize the image quality (group image), richness and centrality using YOLO and Brisque models. Moreover, we probe into the multi-image context and conceptualize the first, best and average quality. Regression models find that content uploaded by users and customers is divergent in these indexes, proving that they have different behavior patterns when generating tourism content.
Our conclusions can facilitate relevant stakeholders to probe into the differences between users- and customers-generated content, thereby adopting corresponding recommendations and services.

Friday, 4PM

FD15

Michaelangelo - Level 2
Platforms: Digital Marketing: General I
Contributed Sessions

Session Chair
Daniel Zantedeschi, 1</sup

Friday, 4PM

FD15

Michaelangelo - Level 2
Platforms: Digital Marketing: General I

Contributed Sessions

1 Consumers as Free Labor: The Value of Incentivization in Mitigating Imbalanced Demand

Xiaojie Li, Yufeng Huang, Takeaki Sunada, University of Rochester, Rochester, NY

This paper aims to understand the value of incentives in helping firms with capacity constraints to meet short-term demand fluctuations. The empirical context we are studying is the bike-share program in New York City, Citi Bike. We focus on the Bike Angels program that Citi Bike uses to help rebalance the bikes across its network to ensure that it can meet consumers' demand. This program offers different price discounts to incentivize the users to help move the bikes to the needed stations. Using our high-frequency station-level information, we find that consumers respond to cash-equivalent incentives offered. In particular, having the rewards available will increase the rentals and returns by 10%, respectively. Conditional on having rewards available, having one more reward point will increase rentals by 35% and returns by 27%. To recover the demand primitives for comparing the counterfactual pricing policies, we then propose a structural demand model. Observing a large amount of the zero-sales data in our sample, we estimate a Poisson-logit demand model to control consumers' arrival process explicitly. We then compare the counterfactual scenarios to evaluate the value of having such an incentivization program in place to mitigate the imbalanced demand.

Friday, 4PM

FD15

Michaelangelo - Level 2

Platforms: Digital Marketing: General I

Contributed Sessions

2 Smiles in Profiles: Improving Fairness and Efficiency Using Estimates of Users Preferences in Online Marketplaces

Emil Palikot, Stanford University, Stanford, CA, Contact: palikot@stanford.edu

Online platforms often face the challenge of being both fair (i.e., non-discriminatory) and efficient (i.e., maximizing revenue). Personal profile images play a role in this tension; on the one hand, they help establish trust and facilitate transactions (Ert et al., 2016), but they also reveal the personal attributes of users, which enables discrimination (Edelman et al., 2017).

We introduce a distinction between image features that users can choose, which we refer to as *style*, and intrinsic features of individuals, which we call *types. Style* features might include facial expressions, objects in the image, or image composition. Using computer vision algorithms and observational data from a micro-lending marketplace, we find that *style* features impact funding outcomes, even though they are not correlated with the probability of repaying the loan. Furthermore, we show that the distribution of *style* features exacerbates inequities between several *types*. For example, we estimate that the gender funding gap would diminish by approximately a third if *style* features were equally distributed between genders.

We corroborate results based on observational data with a web-based randomized survey experiment. In the experiment, we create fake profiles using Generative Adversarial Networks that differ in a specific feature and estimate the impact of the feature on lender demand.

Finally, we develop a simple structural model where behavior is linked to the estimates from our empirical work and use it to evaluate counterfactual platform policies. We show that policies that change which borrowers are shown to lenders can either improve fairness or efficiency, but never both. In contrast, policies in which the platform recommends creating profiles with desirable *style* features, that reduce the correlation between *types* and *styles,* can improve fairness and efficiency.

Friday, 4PM

FD15

Michaelangelo - Level 2

Platforms: Digital Marketing: General I

Contributed Sessions

3 Mind the Gap: The Impact of Price-Closeness on Context Effects in Reward-Based Crowdfunding Menus

Josh Kaisen[1], Daniel Zantedeschi[2], [1]St. Mary's College of Maryland, St. Mary's City, MD, [2]University of South Florida, Tampa, FL

The growing literature on context effects bias demonstrates that menus may be designed to increase demand by implanting inferior comparisons to positively highlight other menu options. Many mechanisms that influence the context effects bias have never been examined in natural settings. We expand this literature by studying the impact of the closeness

of comparison and the source of excess demand. We explore the impact on these components of the context effects bias in pledge choice within reward-based crowdfunding by introducing an extensive dataset of Kickstarter menus and a novel partial identification strategy that is broadly applicable to the study of menu effects. Our main results show that supporters prefer menu options with close price neighbors for both lower- and higher-priced neighbors. The cross-price elasticity for lower-priced neighbors is positive (0.119, $p<0.001$), while it is negative for higher-priced neighbors (-0.051, $p<0.001$). These results oppose the neoclassical model: Kickstarter menus are explicitly made of substitutes because at most one option can be selected, and substitutes should have positive cross-price elasticity; in addition, we show that a menu designed to price discriminate should have positive cross-price elasticity for higher-priced neighbors, which we validate in our analysis. We speculate that these results come due to the enhanced salience of comparison between neighbors that are closer in price, strengthening the context effects bias. We find that the largest demand increase due to adjacent neighbors occurs when higher-priced neighbors are 75 to 100 percent more costly than the focal option demonstrating a limit to the context effects bias. And we show that excess demand in Kickstarter menus due to closer price comparisons comes at the expense of the outside option---concurrent campaigns.

Friday, 4PM

FD16

Raphael - Level 2

Platforms and Algorithms

Special Session

Session Co-Chair

Yuting Zhu, National University of Singapore, Singapore, Singapore.

Friday, 4PM

FD16

Raphael - Level 2

Platforms and Algorithms

Special Session

Session Chair

Xinyu Cao, NYU Stern, New York, NY

Friday, 4PM

FD16

Raphael - Level 2

Platforms and Algorithms

Special Session

1 When Content Creation Becomes a Job

Xinyu Cao[1,2], Yan Cheng[3], Z. Max Shen[4], Zhang Yuhui[5], [1]The Chinese University of Hong Kong, Hong Kong, Hong Kong; [2]New York University, New York, NY, [3]Tsinghua University, Beijing, China; [4]University of Hong Kong, Hong Kong, Hong Kong; [5]Independent Contributor, Beijing, China.

User-generated content (UGC) platforms and multi-channel network (MCN) companies may select promising content creators and sign contracts with them to incentivize their content creation. Using a unique dataset from a major video sharing platform, we investigate how content creators change their behavior after they become signed content creators. We use a matching method to construct a control group consisting of unsigned content creators, and use DiD method to causally identify content creators' behavior change. We find that signing the contract significantly increases content creators' productivity (in terms of the daily number of uploaded videos), but users are less likely to finish watching the videos (from platform-signed creators) or share the videos (from MCN-signed creators). We further utilize interpretable deep learning architectures to mine the changes in video characteristics and video contents.

Friday, 4PM

FD16

Raphael - Level 2

Platforms and Algorithms

Special Session

2 Algorithm Aversion: Evidence from Ridesharing Drivers

Meng Liu[1], Xiaocheng Tang[2], Siyuan Xia[3], Shuo Zhang[3], Yuting Zhu[4], [1]Washington University in St. Louis, St Louis, MO, [2]Meta, San Francisco, CA, [3]Shanghai Jiaotong University, Shanghai, China; [4]National University of Singapore, Singapore, Singapore. Contact: y.zhu@nus.edu.sg

AI algorithms often cannot realize their intended efficiency gains because of their low adoption by human users. We uncover various factors that explain ridesharing drivers' aversion to an algorithm designed to help them make better location choices. By leveraging an algorithmic recommendation rollout on a large ridesharing platform, we find that drivers are more averse to the algorithm when they face a higher cost of implementing its instructions, when their experience suggests a greater opportunity cost of following the algorithm, and when their peers' actions contradict the algorithmic recommendations. We discuss the managerial implications of these findings.

Friday, 4PM

FD16

Raphael - Level 2
Platforms and Algorithms
Special Session

3 Recommender Ecosystem

Lei Huang[1], Juanjuan Zhang[2], [1]MIT Sloan School of Management, CAMBRIDGE, MA, [2]MIT Sloan School of Management, Cambridge, MA

Recommender systems are widely used to serve users with valuable contents. However, contents must be created and insufficient demand dampens creation incentives, which hurts user experience in the long run. We develop a recommender system that incentivizes creators by subsidizing them with user views according to their "creation sensitivity," which measures how easily a creator can be incentivized, and their "compensation variation," which measures how important a creator is for the ecosystem. Theoretically, we prove that this algorithm maximizes long-term user utility by internalizing the externality of user views. Computationally, we estimate demand and creation sensitivity using neural network matrix factorization and causal forest. We estimate compensation variation making innovative use of computer vision, where we train a deep-learning model to compute how creator distribution affects system-wide user utility. Using data from a large content platform, we show that our algorithm incentivizes valuable creators and enhances long-term user experience.

Friday, 4PM

FD16

Raphael - Level 2
Platforms and Algorithms
Special Session

4 Human-Algorithm Interactions: Evidence from Zillow.Com

Runshan Fu[1], Ginger Jin[2], Meng Liu[3], [1]NEW YORK UNIVERSITY, New York, NY, [2]University of Maryland, Cambridge, MD, [3]Washington University in St. Louis, St Louis, MO

Using bi-weekly snapshots of Zillow in three US cities, we document how home sellers and buyers interact with Zillow's Zestimate algorithm during the sales cycle of residential properties. We find that listing and selling outcomes respond significantly to Zestimate, and Zestimate is quickly updated for the focal and comparable houses after a listing or a transaction is completed. The user-Zestimate interactions have mixed implications: on the one hand, listing price depends more on Zestimate if the city does not mandate disclosure of sales information or if the neighborhood is more heterogeneous, suggesting that Zestimate provides valuable information when alternative information is more difficult to obtain; on the other hand, the post-listing update of Zestimate tracks listing price more closely in non-disclosure and heterogeneous neighborhoods, raising the concern that the feedback loop may propagate disturbances in the sales process. However, by leveraging COVID-19 pandemic as a natural experiment, we find no evidence that Zestimate propagates the initial shock from the March-2020 declaration of national emergency, probably because Zestimate has built-in guard rails and users tend to adjust their confidence in Zestimate according to observed market outcomes.

Friday, 4PM

FD17

Balmoral Level 2
Decision Making, Measurement, and Experimentation 2
Special Session

Session Co-Chair
Shirsho Biswas, Seattle, WA

Friday, 4PM

FD17

Balmoral Level 2
Decision Making, Measurement, and Experimentation 2
Special Session

Session Chair
Simha Mummalaneni, University of Washington, Seattle, WA

Friday, 4PM

FD17

Balmoral Level 2
Decision Making, Measurement, and Experimentation 2
Special Session

1 **A Matrix Completion Solution to the Problem of Ignoring the Ignorability Assumption**
Omid Rafieian, Cornell University, Seattle, WA
Digital platforms deliver numerous interventions to their users. One of their main goals is to estimate the causal effect of these interventions. An ideal way to answer this question is to run a fully randomized experiment. However, the economic cost of such experiments is high, making alternative approaches based on observational data appealing to digital platforms. In this paper, we study the feasibility of using observational methods in the presence of algorithmic decision-making. A central assumption needed for observational studies is the strong ignorability assumption, which requires the unconfoundedness of the treatment assignment, and an often-ignored part: overlap assumption that requires the assignment to be non-deterministic. Although the setting created by algorithmic decision-making satisfies the unconfoundedness assumption as the assignment rule is known, the overlap assumption is often violated because these algorithms generate deterministic recommendations. We theoretically show that the violation of overlap can substantially bias the estimates of the average treatment effect from observational data. We quantify this bias and discuss whether it is practically relevant in digital platforms. To address this issue, we propose a novel solution based on machine learning methods used for matrix completion that allows us to recover the average treatment effect estimates if the underlying space of treatment effects is low-rank. We use our algorithm to develop statistical tests to examine whether the lack of overlap results in substantial bias in the main estimates of the causal parameters. Finally, we validate our theoretical results using synthetic data and discuss the implications.

Friday, 4PM

FD17

Balmoral Level 2
Decision Making, Measurement, and Experimentation 2
Special Session

2 **A Recursive Partitioning Approach for Dynamic Discrete Choice Modeling in High-Dimensional Settings**
Hema Yoganarasimhan, University of Washington, Seattle, WA
Dynamic discrete choice models are widely employed to answer substantive and policy questions in settings where individuals' current choices have future implications. However, estimation of these models is often computationally intensive and/or infeasible in high-dimensional settings. Indeed, even specifying the structure for how the utilities/state transitions enter the agent's decision is challenging in high-dimensional settings when we have no guiding theory. In this paper, we present a semi-parametric formulation of dynamic discrete choice models that incorporates a high-dimensional set of state variables, in addition to the standard variables used in a parametric utility function. The high-dimensional variable can include all the variables that are not the main variables of interest but may potentially affect people's choices and must be included in the estimation procedure, i.e., control variables. We present a data-driven recursive partitioning algorithm that reduces the dimensionality of the high-dimensional state space by taking the variation in choices and state transition into account. Researchers can then use the method of their choice to estimate the problem using the discretized state space from the first stage. Our approach can reduce the estimation bias and make estimation feasible at the same time. We present Monte Carlo simulations to demonstrate the performance of our method compared to standard estimation methods where we ignore the high-dimensional explanatory variable set.

Friday, 4PM

FD17

Balmoral Level 2

Decision Making, Measurement, and Experimentation 2

Special Session

3 Causal Bandits: Online Decision-Making in Endogenous Settings

Jingwen Zhang, Yifang Chen, Amandeep Singh, University of Washington, Seattle, WA, Contact: jingwenz@uw.edu

The deployment of Multi-Armed Bandits (MAB) has become commonplace in many marketing applications. However, regret guarantees for even state-of-the-art linear bandit algorithms make strong exogeneity assumptions w.r.t. arm covariates, i.e., the covariates are uncorrelated with the unobserved random error. This assumption is very often violated in many practical contexts and using such algorithms can lead to sub-optimal decisions. Further, many a time, marketers are also interested in the asymptotic distribution of estimated parameters. To this end, in this paper, we consider the problem of online learning in linear stochastic contextual bandit problems with endogenous covariates. We propose an algorithm we term ϵ-\textit{BanditIV}, that uses instrumental variables to correct for this bias, and prove an $\tilde{\mathcal{O}}(k\sqrt{T})$ upper bound for the expected regret of the algorithm, where k is the dimension of the instrumental variable and T is the number of rounds in the algorithm. Further, we demonstrate the asymptotic consistency and normality of the ϵ-\textit{BanditIV} estimator. We carry out extensive Monte Carlo simulations to demonstrate the performance of our algorithms compared to other methods. We show that ϵ-\textit{BanditIV} significantly outperforms other existing methods in endogenous settings. Finally, we use data from real-time bidding (RTB) system to demonstrate how ϵ-\textit{BanditIV} can be used to estimate the causal impact of advertising in such settings and compare its performance with other existing methods.

Friday, 4PM

FD17

Balmoral Level 2

Decision Making, Measurement, and Experimentation 2

Special Session

4 The Heterogeneous Impact of Engagement on Social Media User Behavior: Evidence from a Field Experiment on Twitter

Simha Mummalaneni[1], Hema Yoganarasimhan[1], Varad Pathak[2], [1]University of Washington, Seattle, WA, [2]Independent researcher, Santa Clara, CA, Contact: simha@uw.edu

When creating new content, many social media users hope to receive engagement from other users. This research examines how receiving that engagement affects different users' subsequent behavior on the platform. We address this question through a field experiment on Twitter in which some users' posts were purposefully shown more often to other users, which (on average) increased the amount of engagement they received. Overall, receiving this additional engagement leads to a small increase in user activity on the platform. Next, we estimate a doubly robust instrumental variable model that allows us to estimate individual-level treatment effects, and we find substantial heterogeneity across users in terms of how they respond to additional engagement: most users do not significantly change their behavior, but some users respond by substantially increasing their time spent on the platform and posting more content. Our results suggest that social media platforms can increase content creation and overall usage of the platform by focusing on this latter group of users and prioritizing their posts in the recommender system.

Friday, 4PM

FD18

Windsor - Level 2

Platforms: Digital Marketing: General II

Contributed Sessions

Session Chair

Shibo Li, Indiana University Bloomington, Bloomington, IN

Friday, 4PM

FD18

Windsor - Level 2

Platforms: Digital Marketing: General II

Contributed Sessions

1 Mobility of Ideas, Platforms, and Commercial Performance

Jihoon Hong[1], Seongkyoon Jeong[2], [1]Arizona State University, Tempe, AZ, [2]University of Tennessee, Knoxville, Knoxville, TN, Contact: jihoon.hong@asu.edu

The platforms allowing public participation in idea evaluation (e.g., crowdfunding and crowdsourcing) have changed the new product development process. Such platforms help verify the commerciality of early-stage ideas and facilitate launching the products (or services) in the market. More importantly, the open nature of these platforms generates new interactions between entrepreneurs and consumers. That is, the evaluation results of ideas are publicly available, so entrepreneurs may utilize these evaluations of others' ideas to develop their own products. Most successful ideas are based on previous ideas, and the verification of early-stage ideas is critical for managing risk in new product development. Thus, it is crucial to understand how the publicly available early-stage ideas and their evaluation have influenced the commercial performance of other products in the new product development process. This study uses data from crowdfunding and video game digital distribution platforms to track the movement of ideas from an early stage to a late stage in the new product development cycle. We use Word Movers' Distance method to measure the level of similarity between ideas. This study provides practical implications to entrepreneurs, firms, and platforms in the different stages of the new product development process.

Friday, 4PM

FD18

Windsor - Level 2

Platforms: Digital Marketing: General II

Contributed Sessions

2 Bike-Sharing and Car-Sharing: An Empirical Analysis

Yiqi Li[1], Puneet Manchanda[2], Emanuel Schuster[3], Martin Spann[3], [1]University of Michigan Ann Arbor, Ann Arbor, MI, [2]University of Michigan, Ann Arbor, MI, [3]Ludwig Maximilian University of Munich, Munich, Germany. Contact: yiqili@umich.edu

Many transportation companies are offering multi-modal transportation sharing services, such as bike-sharing and car-sharing. However, it is not clear how the company could find and convert potential multimodal users. We build a model to predict which types of consumers are more likely to be multimodal users of both bike-sharing and car-sharing. We also find that network analysis could facilitate multimodal usage prediction. Our findings are likely to be helpful to sharing economy companies, city planners as well as policymakers.

Friday, 4PM

FD18

Windsor - Level 2

Platforms: Digital Marketing: General II

Contributed Sessions

3 Effects of Dual Platforms on Consumers and Third-Party Sellers

Malika Korganbekova, Kellogg School of Management, Northwestern University, Evanston, IL

An increasing number of digital platforms, such as Amazon, Walmart and Target, operate in dual mode: they serve as marketplaces matching third-party sellers and consumers, while also manufacturing and selling their own private label products. The welfare effects of dual platforms are ambiguous. Newly introduced private labels could increase competition with third-party sellers offering consumers lower prices and more choice. However, lower prices and dual platform's ability to algorithmically boost private labels in the rankings could crowd-out third-party sellers from the marketplace, thereby decreasing competition. I investigate this trade-off empirically: I study how the introduction of more than 12,000 private label products on Amazon impacted consumer prices and third-party sellers' actions on Amazon and on an anonymous competitor platform. After matching Amazon's private label products with the most similar third-party sellers' products, I show that Amazon's private label products have same product attributes but are 21% cheaper than the third-party sellers' products. Using unique cost and transactions data from the anonymous competitor platform and scraped Amazon data, I show that (ii) after the private label introductions, third-party sellers' quantity sold on Amazon decreases by 5.2% and they sell at 8.7% higher prices which allows to avoid negative effect on their revenue, (iii) on the competitor non-dual platform, third-party sellers decrease their regular prices (-1.5%) and increase their discounts (+10.1%). Moreover, third-party sellers are more likely to introduce new patented products and sign exclusivity contracts with a competitor platform. Thus, reduced-form results suggest that in response to private labels, third-party sellers start investing in their vertical relationships with the competing non-dual platform. Next, I develop a dynamic model of entry to evaluate the changes in market outcomes if (i) Amazon's private label products had higher entry costs, (ii) there was no competitor platform, (iii) Amazon was disallowed to self-preference.

Friday, 4PM

FD18

Windsor - Level 2

Platforms: Digital Marketing: General II

Contributed Sessions

4 The Dynamics of Online Creators' Engagement States and Content Contribution: Evidence from Online Literature Markets

Amy Wenxuan Ding[1], Shibo Li[2], [1]Emlyon Business School, Lyon, France; [2]Indiana University Bloomington, Bloomington, IN

The new creator economy, where average people produce and monetize online content, is growing rapidly. However, little is known about the mechanisms of creators' dual dynamics of unobserved engagement states and forward-looking contribution behavior and how they impact content contribution strategies and platform policies. This paper presents a novel dynamic model to examine the dual dynamics and provide optimal strategies for both creators and digital platforms. Using online literary markets as the context, we show that a creator exhibits multiple engagement states and is forward looking when producing a product serially. A creator is likely to start in the high engagement state with a high preference for monetary rewards but is more likely to remain in a balanced medium state for a longer period of time. The impact of various incentives on content contribution depends on the creator's engagement states with significant creator and product heterogeneity. We find that ignoring either of the dual dynamics leads to biased estimates of product performance. Counterfactual analysis shows that a personalized engagement-state-based incentive design increases the platform's revenue by 310% compared to the actual data. Our study provides important managerial implications for platform managers and creators to improve their performance.

Friday, 4PM

FD19

Sandringham - Level 2

Pricing: Platforms

Contributed Sessions

Session Chair

Hui Li, The University of Hong Kong, Hong Kong, Hong Kong.

Friday, 4PM

FD19

Sandringham - Level 2

Pricing: Platforms

Contributed Sessions

1 Platform Information Design and Competitive Price Targeting

Ruiqi Wu[1], Yufeng Huang[1], Nan Li[2], [1]University of Rochester, Rochester, NY, [2]Tongji University, Shanghai, China.

In online marketplaces, platforms decide what consumer information sellers can use for targeting, shaping sellers' pricing decisions and competitive outcomes. How should a platform design sellers' information for price-targeting? We study this question empirically for Steam -- the leading platform for PC-based video games. Using a novel dataset that documents individual consumer behavior for ten months, we estimate a flexible demand model to pin down the heterogeneous consumer preferences for differentiated products. Then, we develop an equilibrium (targeted) pricing model, which takes the demand as given and solves sellers' pricing decisions corresponding to alternative information designs. Finally, counterfactual comparisons reveal that Steam can use information design to balance the information across sellers and improve sellers' total profits. In particular, Steam can group consumers into two segments, share consumers' segment identities with the sellers, and help sellers achieve 75% of the potential incremental profits without transferring individual consumer data.

Friday, 4PM

FD19

Sandringham - Level 2

Pricing: Platforms

Contributed Sessions

2 Does Online-Offline Price Difference Matter? a Natural Experiment on the Food Delivery Platform

Jingwei Dai[1], Hui Li[2], [1]Carnegie Mellon University, Pittsburgh, PA, [2]The University of Hong Kong, Hong Kong, Hong Kong. Contact: huil1@hku.hk

We study how online-offline price difference affects merchant sales and consumer purchases in the context of food delivery platforms. Given the thin margins and the 15-30% platform fee, restaurants often find it challenging to remain profitable and thus have incentives to charge a higher price online than offline. Theoretical literature has shown that online mark-ups are important for incentive alignment of the vertical system and optimal design of the revenue-sharing contract in this context. However, it remains unclear how consumers respond to the online mark-ups and how restaurant sales are affected. We empirically address this issue using a natural experiment on Foodpanda, a major food delivery platform in Taiwan. Foodpanda used to restrict all restaurants to charge the same price online and offline. Taiwan Fair Trade Commission determined that this restriction curbed competition and removed it in September 2021. Using a difference-in-difference approach, we find that some restaurants continued to have no online-offline price difference after the policy change, while others charged an online mark-up and increased their average online dish price. Consumers responded by placing fewer orders and purchasing fewer dishes per order from restaurants with an online mark-up. As a result, overall revenue decreased for restaurants with an online mark-up. The results indicate that having pricing flexibility and charging different online-offline prices can actually backfire, especially when merchants with and without online mark-ups coexist.

Saturday, 8:30AM

SA01

Trade Room- Lobby Level
ML: ML-Bias
Contributed Sessions

Session Chair

Yunchuan Liu, University of Illinois at Urbana-Champaign, Champaign, IL

Saturday, 8:30AM

SA01

Trade Room- Lobby Level
ML: ML-Bias
Contributed Sessions

1 Uncovering Selection Bias in Multi-Armed Bandit: Evidence from a Large-Scale Gamification Experiment in Banking

Liying Qiu[1], Shunyuan Zhang[2], Param Vir Singh[3], [1]Carnegie Mellon University, Pittsburgh, PA, [2]Harvard Business School, Boston, MA, [3]Carnegie Mellon University, Pittsburgh, PA, Contact: liyingq@andrew.cmu.edu

Randomized control trials (RCT) are extensively used for causal identification. In an ideal RCT setting, firms randomly and independently assign an arbitrarily large number of subjects to the treatment and control groups. However, RCT can be expensive and time-consuming. Meanwhile, multi-armed bandits (MAB) is proposed as a promising alternative to reduce the experimentation cost compared to RCT. Yet, MAB's advantage backfires since data is adaptively collected via an MAB experiment, the sample mean can be positively or negatively biased due to the non-independent and identically distributed nature of the data generation process. In this paper, we use data collected in a large-scale gamification experiment on a bank APP to verify four sources of selection bias in MAB, i.e. adaptive sampling, adaptive stopping, adaptive choosing, and adaptive rewinding. Specifically, we collaborate with a major bank in Mexico to run a large-scale field experiment involving 500,000 customers over two months to increase APP usage and customer retention. The experiment has one control group and four treatment groups regarding the design of gamification, which varies on the scheme (points or missions) and progression (with or without levels). Counterfactual simulations show that the aforementioned sources of selection in MAB can affect the sign and magnitude of the estimation bias. Finally, we show how these biases can lead to unintentional biased allocation of resources across groups.

Saturday, 8:30AM

SA01

Trade Room- Lobby Level
ML: ML-Bias
Contributed Sessions

2 Detecting and Mitigating Discriminatory Bias in Uplift Modeling: A Causal Fairness Approach with Application to a Field Experiment

Joel Persson[1], Jurriën Bakker[2], Dennis Bohle[2], Florian Wangenheim[1], [1]ETH Zurich, Zurich, Switzerland; [2]Booking.com, Amsterdam, Netherlands. Contact: jpersson@ethz.ch

Firms increasingly rely on uplift modeling to target treatments (e.g., offers, discounts) to customers. Typically, uplift modeling involves estimating the heterogeneous treatment effect (HTE) function and then targeting those customers for which the predicted HTE exceeds a threshold. There is discriminatory bias in the uplift model if its prediction errors compared to the true HTE systematically varies across protected groups (e.g., those defined by by sex or race) as then, groups will be targeted correctly at different rates. In this paper, we develop methods for detecting and mitigating such discriminatory bias for fair customer targeting. We show that the discriminatory bias can be expressed as group-wise heterogeneity in the statistical bias in the average prediction by the uplift model compared to the true unobserved average treatment effect (ATE). We then detect discriminatory bias in the uplift model by testing for heterogeneity in its statistical bias across groups. We also demonstrate a simple mitigation procedure that de-biases the predictions of the uplift model and thus allows for fair targeting towards new customers. Our methods are general; they apply to in principle any uplift model, even black-box machine learning algorithms and rule-based based approaches. Similarly, in principle any consistent and statistically unbiased estimator of ATEs can be used. Here, we propose estimators based on randomized, regression discontinuity, and instrumental variable designs and discuss their relative benefits and weaknesses for practice. We evaluate our methods in a large-scale, global field experiment on a leading travel platform wherein targeted offers exceeding 1 billions USD in costs are sent to millions of users. Our methods detect discriminatory bias towards users from some countries but correct for this. Our work contributes to previous research in marketing in two ways: First, by developing methods for detecting and mitigating discriminatory bias in uplift modeling. Second, by demonstrating their performance in practice for fair customer targeting.

Saturday, 8:30AM

SA01

Trade Room- Lobby Level

ML: ML-Bias

Contributed Sessions

3 Wrong Model or Wrong Practices? Mis-Specified Demand Model and Algorithmic Bias in Personalized Pricing

Qiaochu Wang[1], Yan Huang[1], Param Vir Singh[2], Kannan Srinivasan[1], [1]Carnegie Mellon University, Pittsburgh, PA, [2]Carnegie Mellon University, Pittsburgh, PA, Contact: psidhu@andrew.cmu.edu

The societal significance of fair machine learning (ML) cannot be overstated, yet quantifying algorithmic bias and ensuring fair ML remains a challenging task. One popular fair ML objective, equality of opportunity, requires equal treatment for individuals who are equally deserving, regardless of their group affiliation. However, determining who should be considered “equally deserving” is a complex and critical aspect that directly affects the estimation of algorithmic bias. This paper emphasizes the importance of accurately measuring equal deservingness in order to accurately estimate algorithmic bias. To illustrate this, the paper examines the case of personalized pricing and shows that assuming a mis-specified model for equal deservingness can result in incorrect bias estimates. Using a detailed consumer data set from a large e-commerce platform, the paper demonstrates that when the correct consumer demand model is a non-sequential search model where consumers differ in their search costs based on gender, assuming a standard choice demand model or a traditional ML (e.g. Support Vector Machine) can lead to incorrect bias estimates. This research highlights the critical role that a proper model specification plays in achieving fair ML practices.

Saturday, 8:30AM

SA01

Trade Room- Lobby Level

ML: ML-Bias

Contributed Sessions

4 Algorithmic Matching and Machine Learning Bias

Runshan Fu[1], Yunchuan Liu[2], [1]New York University, New York, NY, [2]University of Illinois Urbana-Champaign, Champaign, IL, Contact: liuf@illinois.edu

There has been increasing concern about potential bias against certain demographic groups in the use of machine learning algorithms. In this paper, we study this issue in the context of matching. We build an analytical model of a platform using a machine learning algorithm to facilitate match-making among users in two demographic groups. The algorithm learns about the users and recommends them to each other. The users decide whether to proceed with the algorithm recommendation. The model highlights two important elements in the discussion of algorithmic bias issues. First, humans play important roles in the decision process. Even in absence of the algorithm, rational users (i.e., users who do not intentionally discriminate based on demographic features) could still make decisions that lead to discriminatory outcomes because of statistical bias. Second, in the matching setting, there are externalities in algorithm outputs. The algorithm performance in one demographic group inevitably affects the outcomes in the other group. In our analysis, we first show that a seemingly biased algorithm, which has higher prediction accuracy for the advantaged group, can actually reduce the gap in matching outcomes between the advantaged group and the disadvantaged group, and thus improve equity. Second, the common de-biasing approach that requires equality in machine learning outputs is not effective in eliminating the bias in matching outcomes. Even when the algorithm is equally accurate for both groups, the users in the advantaged group still enjoy better matching outcomes. Moreover, a de-biased algorithm often makes the disadvantaged group worse off, in addition to hurting the advantaged group. Our results suggest that, contrary to the common belief that machine learning algorithms will exacerbate social inequality, they have great potential in reducing bias. However, simply aiming at equality in machine learning outcomes may not be fully effective and could even backfire.

Saturday, 8:30AM

SA02

Flagler - Lobby Level
Social Media: The Role of Influencers II
Contributed Sessions

Session Chair
Yuchi Zhang, Santa Clara University, Santa Clara, CA

Saturday, 8:30AM

SA02

Flagler - Lobby Level
Social Media: The Role of Influencers II
Contributed Sessions

1 Video Influencers: Unboxing the Mystique

Prashant Rajaram[1], Puneet Manchanda[2], [1]Ivey Business School, London, ON, Canada; [2]University of Michigan, Ann Arbor, MI

Influencer marketing has become a very popular tool to reach customers. Despite the rapid growth in influencer videos, there has been little research on the effectiveness of their constituent elements in explaining video engagement. We study YouTube influencers and analyze their unstructured video data across text, audio and images using a novel "interpretable deep learning" framework that accomplishes both goals of prediction and interpretation. Our prediction-based approach analyzes unstructured data and finds that "what is said" in words (text) is more influential than "how it is said" in imagery (images) followed by acoustics (audio). Our interpretation-based approach is implemented after completion of model prediction by analyzing the same source of unstructured data to measure importance attributed to the video elements. We eliminate several spurious and confounded relationships, and identify a smaller subset of theory-based relationships. We uncover novel findings that establish distinct effects for measures of shallow and deep engagement which are based on the dual-system framework of human thinking. Our approach is validated using simulated data, and we discuss the learnings from our findings for influencers and brands.

Saturday, 8:30AM

SA02

Flagler - Lobby Level
Social Media: The Role of Influencers II
Contributed Sessions

2 The Effects of Limiting the Number of Endorsement Videos on a Social Media Platform: Evidence from Tiktok

Mantian Hu[1], Jingcun Cao[2], Pradeep Chintagunta[3], Tao Han[2], [1]Chinese University of Hong Kong, Shatin, Hong Kong; [2]The University of Hong Kong, Hong Kong, Hong Kong; [3]University of Chicago, Chicago, IL, Contact: jcao@hku.hk

We examine the impact of a sudden policy change by the social media platform TikTok on the number of videos put out by influencers and the downstream consequences of such a policy. On Jan 9, 2020, without forewarning, TikTok began limiting the number of endorsement videos posted as a function of the number of followers the influencer had - the higher the number of followers, more endorsement videos were allowed to be posted. The new policy set up a four-tier scheme that restricted influencers to posting a maximum number of endorsement videos ranging from 1 endorsement video per week to at most to 10 endorsement videos per day. Since these endorsements have been hypothesized to have downstream consequences on sales, we collected a dataset with over 52 thousand influencers, the numbers of endorsement videos posted, and sales of over 65 thousand products across a variety of categories. We find that the policy reduces the number of videos of not only those endorsers who are required to reduce the number of posted endorsement videos under the policy, but also those whose numbers are close to the cut-offs even when they are not required to under the policy. The latter finding suggests a "chilling" effect of the policy. After the policy, influencers focused more on products with intermediate levels of prices and commissions, resulting in a more concentrated market. We hypothesize that the chilling effect for influencers just above the cut-off is due to the need to avoid being penalized by the platform if the number of followers falls below the cut-off. In terms of the increased concentration of sales on certain products stems from the need to avoid products at the extremes that are likely to have more uncertain demand. This research provides new knowledge to researchers and offers practical managerial implications to practitioners.

Saturday, 8:30AM

SA02

Flagler - Lobby Level
Social Media: The Role of Influencers II
Contributed Sessions

3 Measuring the Effect of Performance on Influencer Following

Lori Kim, Mike Lewis, Emory University, Atlanta, GA

One consequence of the growth of social media platforms has been the development of influencer marketing. Influencer marketing bears similarities to traditional marketing practices involving celebrity spokespeople, but it is also different as influencers build and manage their own channels. Influencers differ in how they grow channels as some emphasize social media content creation while other celebrities leverage success in other categories such as sports, music, or entertainment. However, while influencer marketing is proliferating, there is only limited research on how celebrity influencers cultivate their "influence" or star power. In our research, we focus on the development of influence or reach in the context of sports. Specifically, we use data from the 2020 Tokyo Summer Olympics to investigate the relationship between athletic performance and social media following, using follower size as a metric for influence and reach. We find that superior performances are associated with significant increases in social media following, supporting the idea that superior performance is a foundational element of fandom and influence. Critically, we find evidence of heterogeneous treatment effects based on the pre-Olympic follower size and sport popularity. For example, athletes with smaller follower bases experience a greater treatment effect upon medaling. These types of heterogeneous treatment effects should be of substantial interest to marketers interested in selecting future influencers.

Saturday, 8:30AM

SA02

Flagler - Lobby Level
Social Media: The Role of Influencers II
Contributed Sessions

4 Are Influencers Always More Effective at Driving Adoption?

Yuchi Zhang, Santa Clara University, Santa Clara, CA, Contact: yzhang6@scu.edu

An important element of influencer marketing is to assess whether and to what extent influencers are able to impact the adoption behavior of those in their network. This is challenging because friends and/or followers tend to have similar preferences to the influencer and may have adopted the product without being influenced. In this paper, w e ask whether gift samples from influencers impact consumers' purchase decisions and assess whether this impact varies based on a user's experience levels. We focus on a setting where samples are randomly distributed to consumers with different levels of experience in the product environment . This allows us to investigate the impact of influencers (and non-influencers) on both new and experienced users. We find that, with sufficient experience, samples from influencers lead to higher likelihood of purchase. However, recommendations from non-influentials may discourage experienced users from purchasing. In contrast, for new users, samples from any user lift sales, with influencers having a slightly larger marginal impact. The findings suggest nuances that exist in both influencer and other word-of-mouth marketing campaigns.

Saturday, 8:30AM

SA03

Dupont - Lobby Level
Consumer Behavior: Digital Marketing
Contributed Sessions

Session Chair
Ozum Zor, Rutgers School of Business-Camden, Camden, NJ

Saturday, 8:30AM

SA03

Dupont - Lobby Level
Consumer Behavior: Digital Marketing
Contributed Sessions

1 Situational Materialism Induced by E-Tail Environment and Consumers' Attitude Towards Responsible Consumption

Aditya Billore, Abdul Wahid Khan, Indian Institute of Management Indore, Indore, India. Contact: adityab@iimidr.ac.in

E-tail (Online retail) apps and websites provide a wide variety of products & offers to the consumers. The consumers often browse the e-tailers' websites or smartphone applications either with a purchase goal in mind or sometimes even without any definite goal. Bauer, Wilkie, Kim & Bodenhausen (2012) found that situational cues may trigger a materialistic mindset. Similarly, in the current study, we propose that the clutter of offers, and fancy product information (including photographs and videos) may trigger materialistic thoughts of the consumers. Existing literature suggests that materialistic values in individuals lower their overall social and personal wellbeing (Burroughs and Rindfleisch, 2002; Kasser and Ahuvia, 2002). In this study, using three experiments, we attempt to explore how the situational materialism triggered by the e-tail environment affects the consumers' information processing pertaining to responsible consumption. In the first experiment, we try to establish that the information provided on e-tail apps/website act as cues to trigger the materialistic mindset for the consumer. In the second experiment, we explore how materialistic thoughts adversely impacts the consumers' attention to information related to responsible consumption in the product description. Thus, a consumer is likely to be less attentive to any information related to the social or environmental implication of consumption of a product and will be more interested in self-enhancement. In the third study, we try to explore the role of task orientation in attenuating the effect of materialistic cues on the consumers. Thus, we propose that the consumers preoccupied with a purchase task are less likely to affected by situational materialism.

Saturday, 8:30AM

SA03

Dupont - Lobby Level
Consumer Behavior: Digital Marketing
Contributed Sessions

2 Time-of-Day and Construal Level Effects on Online Information Engagement

Ozum Zor[1], Kihyun Hannah Kim[2], Ashwani Monga[3], [1]Rutgers School of Business-Camden, Camden, NJ, [2]Rutgers University, Newark, NJ, [3]University System of Georgia, Atlanta, GA

As consumers are looking for the latest updates from social media, it is more important than ever for managers to convey effective information that engages consumers. In this research, we focus on construal that arises due to geographical distance, and examine its role in the context of engaging with information during the day. Based on a construal level perspective, geographical and temporal distance are interrelated, and changed distance in one of them influences the other. Thus, we argue that, in the morning, consumers are likely to construe that they have a whole day ahead of them (i.e., temporally distant to the end of the day), and engage with geographically distant information (i.e., international news). Yet, in the evening, consumers are likely to construe that they have a partial day ahead of them (i.e., temporally close to the end of the day), and engage with geographically close information (i.e., local news). We observe this pattern in three studies, two using Twitter data and one using an experimental setting. This is a novel effect adding to recent work demonstrating time-of-day effects. Our research also has strong implications for marketers. When seeking to generate engagement, it is better to post messages congruent with high-level construal earlier in the day and to post messages congruent with low-level construal later in the day.

Saturday, 8:30AM

SA05

Gusman - Lobby Level
Sustainability: General I
Contributed Sessions

Session Chair
Richard Stuebi, Future Energy Advisors, Chagrin Falls, OH

Saturday, 8:30AM

SA05

Gusman - Lobby Level
Sustainability: General I
Contributed Sessions

1 Go Green! an Environmental Feebate on Cars and Its Effect on Consumers, Manufacturers, and the Environment

Yanai Ankaoua[1], Stav Rosenzweig[1], Ofir Rubin[1], Aviv Steren[2], Ziv Bar-Nahum[2], [1]Ben-Gurion University of the Negev, Beer Sheva, Israel; [2]The Hebrew University of Jerusalem, Jerusalem, Israel. Contact: stavro@bgu.ac.il

To achieve their goal of reducing pollution, governments around the world are implementing policy measures that encourage consumers to purchase cars with lower emission levels. Environmental feebate schemes have been implemented in several countries, such as France, Germany, and Japan. We examine the longitudinal effects of an environmental feebate scheme introduced in Israel in 2009 - the first and only to incorporate all five key pollutants emitted by cars. This policy incentivizes consumers to purchase cars with lower pollution levels by offering differential tax reductions; the lower the pollution level of the car, the higher the tax rebate. Using a differentiated goods model, we estimate an oligopoly equilibrium of the feebate scheme and compare it with a simulated equilibrium of the pre-existing fixed tax scheme. We find that the average tax rate under the feebate was lower than under a fixed tax, potentially allowing for lower retail prices that would have increased the sale of cars. However, despite expectations, the feebate resulted in an increase in retail prices, a decrease in units sold, and an increase in manufacturers' markups. Furthermore, car categories with higher rebates were observed to have higher markups. Simulation results indicate that the feebate had little to no effect on emission objectives. A complete welfare analysis revealed that, overall, manufacturer surplus had grown by more than 3%, whereas consumer surplus had decreased by 2.4%, and tax revenue decreased by 5.5%. Contrary to policymakers' intentions to decrease emission costs, the latter instead demonstrated a slight increase, rendering the feebate scheme counter-productive.

Saturday, 8:30AM

SA05

Gusman - Lobby Level
Sustainability: General I
Contributed Sessions

2 Good for Us? Good for Me? Government Intervention for Sustainability and Service Quality

Da Eun Park[1], YoungHee Kim[1], MinChung Kim[2], [1]Pusan National University, Pusan, Korea, Republic of; [2]UNIST, Ulsan, Korea, Republic of.

Korean government's recent policy prohibits lodging properties from offering disposable hotel amenities including shampoo, soaps, and toothbrushes. Lodging businesses in Korea have been forced to either remove amenities or offer substitutes. Government policies for social and environmental sustainability often force businesses to cease existing services and offer substitutes, which is likely to harm service quality and customer satisfaction. Therefore, the business needs to understand how customers respond to such interventions and possible service quality declines. This study examines whether and how types of substitutes (i.e., perfect substitutes, imperfect substitutes, and no substitutes) that a hotel provides to comply with the government sustainability policy influence customers' policy acceptance and customer satisfaction with the service. We also propose that the influence of substitute types on customer satisfaction and policy acceptance be moderated by the communication messages of the hotel. More specifically, we employ regulatory focus theory to develop the communication message frame, namely prevention hope and promotion hope. Our results show that consumers offered perfect substitutes have greater policy acceptance and higher satisfaction than those offered imperfect substitutes and no substitutes. Interestingly, however, no significant differences in satisfaction and policy acceptance are found between imperfect substitutes and no substitute groups. In terms of communication messages, a message with a promotion hope frame is more effective than a prevention hope message to improve the satisfaction of the incomplete substitute group, while no significant differences in satisfaction between the two message frames are found for perfect substitutes and no substitute groups. With the findings, we

provide meaningful insights into how businesses respond to government intervention for sustainability and offer useful managerial implications.

Saturday, 8:30AM

SA05

Gusman - Lobby Level
Sustainability: General I
Contributed Sessions

3 The Effects of Government Policies to Promote Electric Vehicle Consumption

Seulmin Yang, George John, Linli Xu, Carlson School of Management, University of Minnesota, Minneapolis, MN, Contact: yang6881@umn.edu

Comparing with traditional gasoline cars, electric vehicles can significantly reduce greenhouse gas emissions. As a result, governments around the globe implement various policies to encourage electric vehicle adoptions. Two major types of policies have been in place: Indirect investment offering diverse financial incentives to consumers who purchase an electric vehicle, and charging network companies who install and operate charging stations; Alternatively, governments can directly invest in building and maintaining government-owned chargers. Like many two-sided markets, the number of chargers available and the number of vehicles adopted are interdependent in the electric vehicle (EV) market. Therefore, we aim to investigate how different government policies influence consumers' EV purchase decisions as well as charging companies' EV charger deployment decisions. Using data from the Korean EV market between 2016 and 2021, we find that 1) the number of standard chargers, the number of fast chargers, and consumer subsidy positively affect the consumer BEV purchase decision. Standard chargers are more effective in expanding consumer EV adoptions ; 2) Charger installment subsidy positively influences the number of new installed standard chargers; and 3) the direct investment of fast chargers by government has a positive spillover on charging network companies' charger installation decision. The results indicate that understanding the interaction between direct investment and indirect investment is crucial to measure the effect of policies in two-sided market. Also, the results can explain why both indirect and direct investment should be implemented together to support a new market.

Saturday, 8:30AM

SA05

Gusman - Lobby Level
Sustainability: General I
Contributed Sessions

4 Signaling Green or Geek: How Consumer Motivation Differentially Affects the Influence of Economic and Convenience Disadvantages on Ev Purchase Likelihood

Richard Stuebi[1], Dipankar Chakravarti[1], Richard Staelin[2], Juncai Jiang[3], [1]Virginia Tech, Blacksburg, VA, [2]Duke University, Durham, NC, [3]University of Central Florida, Orlando, FL, Contact: richardts@vt.edu

Many pro-environmental behaviors (PEBs) face two disadvantages - higher price and greater inconvenience - that frequently lead consumers to avoid them. Moreover, different consumers likely apply different weightings to these two disadvantages. To increase PEBs, we should better understand the factors and conditions that reduce consumer sensitivity to these disadvantages.
Consider the purchase choice of an electric vehicle (EV). Environmentally committed consumers demonstrate high EV purchase interest as a PEB, whereas EV interest for technophiles is driven by their passion for innovative technology. We speculate that the EV's disadvantages of higher price and greater inconvenience affect purchase decisions differently depending upon whether the consumer is environmentally or technologically oriented.
We offer and test a conceptual model involving two parallel motivational pathways - environmental and technology - that may drive EV purchase likelihood. We then conducted a single-factor (EV price premium: low, high) between-subjects experiment in which online survey respondents were asked to imagine buying a new car and rate their likelihood of purchasing an EV vs. an equivalent gasoline-powered vehicle. They also answered a battery of familiarity, knowledge and attitudinal questions.
The findings show that the EV price premium and perceived EV inconvenience had differential effects on EV purchase likelihood along the environmental and technology motivational pathways with corresponding knowledge and signaling variables serving as moderators/mediators of the purchase decision. The results have significant managerial and policy implications, not only for consumer adoption of EVs but also other technologically-innovative solutions to environmental issues.

Saturday, 8:30AM

SA06

Marti - Lobby Level
Auctions and Price Matching
Contributed Sessions

Session Chair
Steve Hood, Virginia Polytechnic Institute and State University, Vienna, VA

Saturday, 8:30AM

SA06

Marti - Lobby Level
Auctions and Price Matching
Contributed Sessions

1 When to Offer Price Match Guarantee: The Blessing of Supply Scarcity

Maggie Chuoyan Dong, University of New South Wales, Sydney, Australia.

Price match guarantee, whereby a seller promises to refund the price difference to a customer who purchases a product when the customer finds a qualified lower price elsewhere, is commonly adopted by major retailers in practice. In this paper, we investigate the impact of supply scarcity on the adoption of the price matching policy with the potential advent of a competitor. We demonstrate that supply scarcity is a blessing for the adoption of price matching: in the presence of supply scarcity, price matching does not hurt the seller profit and it can even improve the seller profit under medium or high scarcity. Ignoring the price matching policy under supply scarcity can lead to a significant profit loss. Our results are also robust to the case with the endogenous capacity decision in the presence of the diseconomies of scale effect of capacity cost. We provide new explanations on the adoption of the price matching policy under supply scarcity in practice.

Saturday, 8:30AM

SA06

Marti - Lobby Level
Auctions and Price Matching
Contributed Sessions

2 Assessed Self- and Competitor-Expertise: Effects on Bidding Behavior, Auction Outcomes and Contingent Valuations

Steve Hood[1], Dipankar Chakravarti[2], [1]National Geospatial-Intelligence Agency, Vienna, VA, [2]Virginia Tech, Ellicott City, MD, Contact: hoodste@vt.edu

Prior research shows that bidders are influenced by their assessments of competing bidders as auction experts (vs. amateurs) for a given product category. These assessments affect how they bid and drive auction outcomes (win/loss). Moreover, bidders' contingent post-auction valuations of the auction object depend not only on the object but who they win/lose against. This paper reports two studies that extend prior research by examining how bidders' assessment of their own expertise (wine-auction experts vs. amateurs) moderates the above findings. Self-assessment levels are manipulated by having participants complete (purported) wine-auction expertise tests and receive performance feedback suggesting they are experts or amateurs. Competitors (bot bidders) are also tagged as wine-auction experts or amateurs. Participants have a fixed budget and win/loss is randomly assigned. Study 1 uses a (first-price) sealed-bid auction. Participants enter their one-time bids for a bottle of wine. In Study 2, participants bid in a (first-price) ascending auction with similar parameters. They are tracked until they either voluntarily drop out or bid up to a preset budget and are then randomly declared winners or losers. In both studies, bids are consequential as participants believed that their earnings would depend on how they bid. Our results show that bidders generally bid higher against experts vs. amateurs. This effect is strongest when bidders self-assess as experts. Following a win, post-auction values are similar for both amateurs and experts competing against other amateurs or experts (understandable given the known winning price). However, with value uncertain following a loss, post-auction valuations are *lower* for amateurs who competed against experts, and *higher* for experts who competed against other experts. Regret played a significant mediating role: assessed self and competitor expertise influences how bidders feel about losing and affects their post-auction valuation.

Saturday, 8:30AM

SA07

Merrick 1 - Lobby Level
Text and Image: Visual Analytics
Contributed Sessions

Session Chair

Ali Faraji-Rad, 1</sup

Saturday, 8:30AM

SA07

Merrick 1 - Lobby Level

Text and Image: Visual Analytics

Contributed Sessions

1 Should a Picture Say a Thousand Words or Only Those that Matter?

Ali Jamei[1], Nima Y. Jalali[2], Purushottam Papatla[3], [1]University of Wisconsin Milwaukee, Milwaukee, WI, [2]University of North Carolina Charlotte, Charlotte, NC, [3]University of Wisconsin-Milwaukee, Milwaukee, WI, Contact: alijamei@uwm.edu

Do viewers' goals affect the type of pictures, in terms of their content, that attract their attention? If this is so, it is likely that pictures displayed for specific goals would be more engaging if they have content which is consistent with those goals. We investigate whether this is indeed the case using viewer engagement with pictures displayed in different contexts where viewers may have a different set of goals for each context. The contexts include Instagram, Flickr, retailers' home pages, and retailers' product pages. We assess the contextual consistency of pictures through topics from topic models of the tags generated by processing the pictures using computer vision, specifically, Azure. Our empirical investigation indicates that pictures that include content consistent with viewers' goals for the context for which they are displayed do stimulate more engagement. We also conduct an experiment using M Turk to assess the reliability of our empirical findings. We discuss implications of the findings primarily for retailers' displays but also for the selection of pictures that should be displayed to increase viewer engagement in other contexts as well.

Saturday, 8:30AM

SA07

Merrick 1 - Lobby Level

Text and Image: Visual Analytics

Contributed Sessions

2 An Investigation of the Effects of Sensory and Objective Characteristics on Fine Art Prices

Mayukh Dass[1], Abhishek Nirjar[1], Piyush Kumar[2], [1]Texas Tech University, Lubbock, TX, [2]University of Georgia, Lubbock, TX, Contact: anirjar@ttu.edu

The global art market has surged again after the pandemic, with an annual sale of $17B in 2021. Art is a tangible hedonic product whose consumption is primarily an affective experience. The economics of artwork and art prices have been the subject of research for long. Artists are like brands; their style is unique and a differentiating factor from other artists. This differentiation or originality provides the basis for demand and hence the value of the artist's work. Like brands, artists can leverage their equity and uniquely position themselves in the market through their work, unique physical features, and controversial life. Many factors impact the price of art, like, the characteristics of art and artists, bidder characteristics, economic factors, and the demand and supply of art. The art-related factors influencing the decision to bid and purchase an art piece impact the buyer's senses. This study focuses on the characteristics of art, specifically brightness and content, and how they affect art prices. The study also aims to find how these attributes affect the art prices of different types of artists. Color has been found to help in differentiating brands and influencing brand evaluation. There is evidence of the effect of the color of products and product labels on sales. In case of art, the affect of background color of art on the willingness to pay, and brighter colors induce more positive emotions and makes the consumer more assertive during purchase. We tested the positive effect of bright colors on art prices using data from Indian art auctions. We adopted a hedonic model and considered both main effects and interaction effects in our model. The findings indicate that perceived brightness resulted in higher art prices and helped generate higher prices for newcomer artists, small artworks, and extensive artwork of masters. Also, landscape and abstract work generated higher prices as compared to others. The results indicate that color and content affect art prices in a significant way.

Saturday, 8:30AM

SA07

Merrick 1 - Lobby Level

Text and Image: Visual Analytics

Contributed Sessions

3 Visualized Emotions: A Model for Extracting Emotional Loading of Marketing Images

Eugene Pavlov[1], Natalie Mizik[2], [1]University of Miami,

Miami, FL, [2]University of Washington, Seattle, WA, Contact: epavlov@miami.edu

Emotion is a crucial driver of user engagement with firm-generated content (Berger and Milkman (2012), Akpinar and Berger (2017), Tellis et al. (2019)). We propose and validate a model that extracts emotional loading of marketing images using four different modalities. First, we compile a novel training set of 21,983 marketing images annotated by human subjects on the two primary dimensions of emotion: Sentiment and Arousal. Second, we use computer vision and deep learning to extract predictors of visual emotion under four modalities: (1) elements of design (low-level features) such as color, texture, shape, lines, curves, corners, edges, and orientation; (2) high-level objects/tags (e.g., adventure, action, leisure, danger, etc.); (3) human facial expressions; and (4) text embedded into the image. Third, we train an XGboost model that uses the four modalities to predict image Sentiment and Arousal; the model's accuracy exceeds 80%. Fourth, we find that elements of design (low-level features) and objects/tags are the main drivers of predictive power. Fifth, we validate the causal impact of individual variables on visual emotion by conducting model-informed A/B tests in the lab. We find that color variety, green hue, the horizontal orientation of lines, and diagonal dominance increase visual Sentiment, while pink, yellow, and many corners in the background increase visual Arousal. We discuss how our tool can aid content creators.

Saturday, 8:30AM

SA07

Merrick 1 - Lobby Level
Text and Image: Visual Analytics
Contributed Sessions

4 Emotional Granularity and Consumer Coping: A Deep Learning Approach

Ali Faraji-Rad[1], Ali Tamaddoni[2], Atefeh Jebeli[3], [1]University of Maryland, College Park, MD, [2]Deakin Business School, Burwood, Australia; [3]University of Maryland, Baltimore County, Baltimore, MD

Consumers use emotional expression as a coping strategy when dealing with unsatisfactory consumption encounters, such as service failures. Research in psychology has identified *emotional granularity*—people's ability to differentiate between their emotional states—critical to coping with negative experiences. However, the role of emotional granularity in the marketing context has not been studied. We hypothesized that individuals with higher emotional granularity demonstrate more leniency in rating a negative service experience. We applied the *Bidirectional Encoder Representations from Transformers* (BERT) to a sample of 50,000 Yelp reviews to extract the context-dependent vector coordinates of positive and negative emotional words, within each review. Treating each emotional word as an 'item' to measure a 'construct' (here emotion), Cronbach's Alpha was adopted to measure the dispersion of the emotional words used to explain the experience, where lower Cronbach's Alpha indicates higher emotional granularity. As expected, higher granularity of negative emotions led to higher review ratings. However, for positive emotions, which do not facilitate coping, *lower* granularity increased ratings. The results hold when controlling for the negativity of the review (as measured by number of negative and positive emotional words). Our research introduces the notion of emotional granularity to the marketing literature, utilizes a state-of-the-art deep learning method to extract insights from text, and develops a new methodology to objectively measure emotional granularity using a corpus of text from consumers, to replace the traditional survey-based methods.

Saturday, 8:30AM

SA08

Merrick 2 - Lobby Level
Image Analytics
Special Session

Session Co-Chair
Siham El Kihal, Frankfurt School of Finance & Management gGmbH, Frankfurt Am Main, Germany.

Saturday, 8:30AM

SA08

Merrick 2 - Lobby Level
Image Analytics
Special Session

Session Chair
Renana Peres, The Hebrew University

Saturday, 8:30AM

SA08

Merrick 2 - Lobby Level
Image Analytics
Special Session

1 Color Analytics for Data-Driven Brand Management

Renana Peres[1], Daria Dzyabura[2], [1]The Hebrew University, Jerusalem, Israel; [2]New Economic School, Moscow, Russian Federation. Contact: renana.peres@mail.huji.ac.il

Visuals are at the core of brand communication. Advertising, product design, packaging, interior design of bricks and mortar stores and website design for e-commerce all have a strong visual dimension which contributes to consumer perceptions and attitudes. However, even as firms move to make their marketing activities increasingly data-driven and quantifiable, visual design has remained a largely creative task, and its relationships to brand attributes are based on artistic interpretation and design expertise. In this work, we begin to close this gap by measuring a meaningful relationship between colors and key dimensions of consumer brand perception. We develop a novel methodology in which large respondent panels create online visual collages representing their brand perceptions. We use the combination of image processing, topic modeling, and controlled experiments to analyze these collages and identify causal relationships between algorithmically generated color-palettes and brand attributes.

Saturday, 8:30AM

SA08

Merrick 2 - Lobby Level
Image Analytics
Special Session

2 Consumer Search and Product Images

Daria Dzyabura[1], Siham El Kihal[2], Marat Ibragimov[3], Raluca Ursu[4], [1]New Economic School, Moscow, Russian Federation; [2]Frankfurt School of Finance & Management gGmbH, Frankfurt Am Main, Germany; [3]Massachusetts Institute of Technology, Cambridge, MA, [4]New York University, New York, NY, Contact: mibragim@mit.edu

In the online fashion industry, product images play a crucial role in the customer search process, providing visual information about individual fit that informs consumers' purchase decisions. However, previous literature on consumer search typically focuses on structured information about the product including the price, size, and brand for example. In this paper, we examine the relationship between customer search behavior and product visual information through individual-level customer search journeys on a fashion website. Our findings show that the product image is related to the discrepancy between products' click probability and purchase probability, and that the amount of time spent on search is related to the color composition of the products searched. Additionally, we observe that customers are more likely to click on darker colors early in their browsing session. This study highlights the importance of product images in shaping customer search behavior and highlights potential areas for improvement in the fashion industry.

Saturday, 8:30AM

SA08

Merrick 2 - Lobby Level
Image Analytics
Special Session

3 Visual Elicitation of Consumer Design Preferences

Liu Liu[1], Shane Wang[2], Junming Yin[3], [1]University of Colorado Boulder, Boulder, CO, [2]Pamplin College of Business, Virginia Tech, Falls Church, VA, [3]Carnegie Mellon University, Pittsburgh, PA

Measuring consumers' preference is a fundamental problem in marketing. Researchers have proposed many preference elicitation methods to measure consumers' preference of products. Given that unstructured visual information is transforming business practices, we focus on elicitation of consumers' preference of visual design. Such design could be product design, brand advertisements, home interior design, etc. Design preferences is hard to communicate verbally. This is a problem lots of designers facing when they help their clients or consumers. Before designers start the actual work, it is important to get clear guidance from their clients on what they want. But it is very hard to consolidate client preferences with creative output. The brief provided by clients are often vague and subject to different interpretation. In this work, we develop a novel algorithm to select and show images adaptively to consumers to elicit their preference of visuals.

Saturday, 8:30AM

SA09

Grove - Lobby Level
Entertainment:General I
Contributed Sessions

Session Chair
Sanjay Sisodiya, University of Idaho, Moscow, ID

Saturday, 8:30AM

SA09

Grove - Lobby Level
Entertainment:General I
Contributed Sessions

1 When to Introduce New Blood and when to Keep the Incumbents? the Success of Extensions with Ingredient Components in Motion Pictures

Mingxi Yang, Brianna Paulich, Sajeev Varki, University of South Florida, Tampa, FL, Contact: mingxiy@usf.edu

Although movie sequels as line extensions have been studied in various publications, hardly any research has been done formally on what stars' influence is on sequels and how such influence changes over time when movie stars join or leave the franchise. This research studies the success of extensions with ingredient branding strategies in the context of motion pictures, accounting for the additional value new stars bring to the host brand as well as the value existing stars offer, and how these values change throughout the distribution of the sequels. The study also addresses endogeneity concerns led by new stars in sequels and sequels' production budgets. By analyzing the panel data of weekly box office revenues of 647 movie sequels and 270 franchises using generalized estimating equations (GEE), I find that existing stars in the movie franchise improve the sequel performance. However, after accounting for the endogeneity issues, I find that the influence of new stars is no longer positive and becomes negative and significant. As the duration between sequels' releases and previous movies' releases increases, new stars' negative impact on sequel performance is notably mitigated. Overall, this research provides implications for managing stars as assets and the dynamic changes that stars contribute to movie franchises.

Saturday, 8:30AM

SA09

Grove - Lobby Level
Entertainment:General I
Contributed Sessions

2 Consumer Beliefs on Movie Release Windows

Cord Otten, Rouven Seifert, Michel Clement, Kerstin Mayer, University of Hamburg, Hamburg, Germany.

Release windows in the movie industry, meaning the time between the theatrical premiere of a movie and the (legal) availability for consumption at home, have been a contentious topic for decades. For example, movie theaters in multiple European countries have boycotted the movie Black Widow because it was made available one day after the international theatrical release on the streaming service Disney+. Studios are interested in monetizing delayed versions quickly in order to benefit from initial advertising and to capitalize on content while it is still "fresh". In contrast, movie theaters fear sales cannibalization with shorter release windows. Consumers need to trade-off channel specific consumption preferences and their willingness-to-wait. The lengths of release windows are not publicly announced. Therefore, consumer beliefs on the length of release window likely play a role in their consumption decisions.In this study, we empirically explore such consumers' beliefs by means of population representative consumer panel surveys in multiple waves across seven major European markets. We find largely dispersed, but remarkably stable consumer beliefs over (1) a timespan of a decade as well as (2) in the seven European markets between winter 2021/22 and fall 2022. In aggregate, consumers' beliefs have not adapted to shorter release windows. Individual consumers are uncertain, even when stratifying across consumption intensity or self-reported certainty. We analyze markets and consumer characteristics as potential predictors of release window beliefs using regression techniques. Beliefs differ across countries, likely due to varying regulatory environments. From a managerial perspective, these findings indicate that shorter release windows are less threatening to box office results than some industry experts proclaim.

Saturday, 8:30AM

SA09

Grove - Lobby Level
Entertainment:General I
Contributed Sessions

3 Do the Tomatoes Matter? Exploring the Role of Movie Reviews and Performance

Sanjay R. Sisodiya, TH Pyo, University of Idaho, Moscow, ID, Contact: sisodiya@uidaho.edu

The global movie theater market (theatrical distribution) was estimated to have brought in $67.9 billion in revenue for 2022 and is projected to reach $92.4 billion by 2030 (Markets N Research, 2022). Within this global market, domestic revenue for 2022 was $7.5 billion, highlighting a 34% decrease from pre-pandemic totals (Whitten, 2023). The industry has faced considerable change over the past decade with increased on-demand options, consolidation, evolving customer-base, the pandemic, etc. With these changes, some of the previous notions of factors influencing theatrical success may need to be revisited. Producing movies is risky as many movies struggle to breakeven and turn a profit (Hennig-Thurau, Houston, and Wash, 2007), thus it makes sense to investigate what could enhance success. Previous research has studied a breadth of factors that could aid in predicting box office performance, and includes the strength of cast (Basuroy, Chatterjee, and Ravid, 2003; Peng, Kang, Anwar, and Li, 2019), screening by critics (Brown, Camerer, and Lovallo, 2012), reviews (Nagamma, Pruthvi, Nisha, and Shwetha, 2015), etc. While there are a range of measures that can be evaluated, with movies being an experiential good, the role of reviews in driving demand may warrant additional attention. In this study, we delve into the relationship between the types of reviews, frequency, and valence, to evaluate their effect on performance. To consider changes over time, our sample considers movies available for theatrical distribution from 2012-2022 with data gathered from Box Office Mojo, Rotten Tomatoes, and The Numbers. We extend the body of research by analyzing the complex relationships between movie reviews and their resulting influence on box office performance.

Saturday, 8:30AM

SA10

Oxford - Level 2

Consumer Welfare: Social

Contributed Sessions

Session Chair

Jeongwen Chiang, China Europe International Business School, Shanghai, China.

Saturday, 8:30AM

SA10

Oxford - Level 2

Consumer Welfare: Social

Contributed Sessions

1 Consumers' Decisions for Discretionary Retirement Saving: A Joint Model of How Much and How to Invest

Yadi Yang, Benedict Dellaert, Onno Steenbeek, Erasmus University Rotterdam, Rotterdam, Netherlands. Contact: y.yang@ese.eur.nl

For voluntary pension investment, consumers need to decide not only how much they wish to increase personal retirement savings, but also the investment risk that they want to be exposed to with their pension savings. Often, these two choices are correlated, and not studying them in a joint manner might lead to a biased understanding.
We propose a Multiple Discrete-Continuous Extreme Value (MDCEV) model to capture how the two decisions of how much and how risky to invest are interrelated. Data from a survey of 3,200 U.S. consumers and a survey of 2,000 Dutch consumers are used to estimate the model. We contribute to the existing literature by modeling how potential drivers of heterogeneity jointly impact consumers' decisions of how much and how to invest for retirement.
The results of the MDCEV model show that consumers' discrete pension investment fund choices are interrelated to their continuous choice of how much to invest. Besides, regulatory focus strongly influences both decisions: consumers who are promotion-oriented and whose goal is to gain more money have a stronger preference for the risky fund than those who are prevention-oriented and whose goal is to avoid losing money. But when they do, they invest less in risky funds than those who are prevention-oriented.
The findings of this paper can benefit financial services marketers and policymakers in understanding how consumers make these discretionary retirement investment decisions and thus designing personalized communication tools or recommendations for better financial outcomes.

Saturday, 8:30AM

SA10

Oxford - Level 2

Consumer Welfare: Social

Contributed Sessions

2 Life Insurance Purchase Intentions of Young, Middle-Aged and Senior Consumers: The

Impact of Mortality Salience and Financial Vulnerability Primes

Dwayne McGraw[1], Dipankar Chakravarti[2], [1]Directors Investment Group, Abilene, TX, [2]Virginia Tech, Ellicott City, MD, Contact: dwayne.mcgraw@funeraldirectorslife.com

The right level of life insurance coverage rests on the consumer's age, health, family and finances. Both practitioner data and academic research report significant misalignment between actuary recommended and actual coverage: young adults carry inadequate coverage, whereas seniors often are over-insured. We examine how priming mortality salience (MS) and financial vulnerability (FV) influences the insurance policy choices of young, middle aged and senior consumers, respectively. We use a three-factor design: 2 (MS prime: present/absent) x 2 (FV prime: present/absent) x 3 (Age: Young/Middle-Aged/Senior) to examine how participants evaluate and choose among three hypothetical policies (premium/benefits: low, medium, and high). In the control group (neither prime present) the younger and middle age groups modally select the medium policy whereas the seniors select the high policy. However, the primes affect these choices. When MS alone is primed (FV prime absent), young adults move toward the low policy (assures death benefits at affordable cost). The middle-aged group moves to purchase the high policy. The seniors remain over-insured with the high policy. When FV is primed, the senior group seems to recognize that their strong financial situation and low obligation levels warrant the medium policy. Interestingly, sensitive to higher financial obligations, the middle-aged move toward the high policy. With both MS and FV primed, seniors continue to display affinity toward the medium policy (salience of lower FV tempers the MS effect). Sensitive to their financial situation, younger adults continue to favor the low policy. The middle-aged group remains with the higher policy: both primes have impact. The evaluation data are consistent with the choice data. The findings have significant implications for the designing life insurance products attuned to the needs of consumers in various age groups. They also suggest insights into the factors that, if made salient at choice, can facilitate better consumer choices. The results also have evident regulatory implications.

Saturday, 8:30AM

SA10

Oxford - Level 2

Consumer Welfare: Social

Contributed Sessions

3 Equalizing Access: The Heterogeneous Effects of Micromobility

Sanghwa Kim, University of Maryland, College Park, MD, Contact: ksanghwa@umd.edu

Micromobility is gaining popularity as a sustainable mobility option in urban transportation. Although one of the primary goals of policymakers introducing e-scooters or e-bikes into their city streets is to improve accessibility (i.e., equity), an empirical and systematic evaluation of the impact of micromobility in equal access has been superficial and its practical implications are largely unknown. Analyzing GPS-based mobility patterns data with the staggered introductions of e-scooters into U.S. cities, this paper examines how micromobility introduces consumers' foot traffic to restaurants in high versus low accessibility. A generalized difference-in-differences model shows that while micromobility increases consumer visits to local restaurants, the benefits are given more to restaurants with low accessibility (i.e., those with lower past visits and those with lower public transit quality). The authors also find that the increase in consumer visits with e-scooter availability is driven by the attraction of unique visitors and comes at the cost of regular visits, suggesting the effectiveness of micromobility in equalizing access to the local economy. The findings of this paper are advantageous to policymakers that intend to develop a sustainable urban environment and improve the local economy.

Saturday, 8:30AM

SA10

Oxford - Level 2

Consumer Welfare: Social

Contributed Sessions

4 Conspicuous Consumption of Children's Clothing - Empirical Evidence in China

Chen Lin[1], Yuxin Chen[2], Jeongwen Chiang[3], Yufei Zhang[4], [1]Fudan University, Shanghai, China; [2]New York University - Shanghai, Shanghai, China; [3]China Europe International Business School, Shanghai, China; [4]University of Alabama - Birmingham, Birmingham, AL, Contact: jwchiang@ceibs.edu

As conspicuous consumption rises in emerging markets, little empirical evidence exists on how social, economic and cultural factors affect seemingly "unethical consumption practices" (Mason 1985). This research aims to develop theoretical conceptualizations as well as provide first empirical examination on conspicuous consumption in the context of fashion purchase for children. Tracking over 1 million households purchases across nearly 3000 districts in China in 2011-2014, our research shows that lower-income, less educated, and rural families are more likely to buy visible and expensive clothing for their children. Such conspicuous consumption increases with income dispersion and inequality. We then discuss the implications for promoting ethical consumerism and responsible brand development. Our large-scale empirical study demonstrates that today's abundant e-commerce data can be a fertile source for investigating new and interesting issues on the ethical consumerism movement.

Saturday, 8:30AM

SA11

Cambridge - Level 2
Social Media: Networks
Contributed Sessions

Session Chair
Sadat Reza, Nanyang Technological University, Singapore, Singapore.

Saturday, 8:30AM

SA11

Cambridge - Level 2
Social Media: Networks
Contributed Sessions

1 The Role of Network Structure in Platform Growth: Which Users Help the Platform Grow?

Hanyu Zhang[1], David A. Schweidel[2], Pantelis Loupos[3], Moran Cerf[4], [1]Emory university, Atlanta, GA, [2]Emory University, Atlanta, GA, [3]University of California, Davis, Chicago, IL, [4]Kellogg School of Management, Evanston, IL, Contact: hanyu.zhang@emory.edu

In this research, we examine the diffusion of Venmo, the most popular peer-to-peer (P2P) payment platform. Venmo is that it is a "networked" service, growing through its users attracting new users to the platform with whom they interact. We investigate those factors that are associated with platform users attracting more users to the platform, driving its growth. Using data on all transactions on the platform from January 2011 to June 2016, we construct weekly cumulative social networks based on transactions between users. Using both a Zero Inflated Poisson (ZIP) model and alternative machine learning methods, we examine how usage and network structure impact the number of new users that a given user will attract to the platform. Whereas both an individual's usage and network position positively contribute to their role in acquiring new users, the network position of the source of a user's acquisition adversely affects the number of newly acquired users they will attract. That is, important users in terms of the high density of ties and bridging positions on the network are more likely to acquire new users, while users acquired by an influential source are less likely to acquire new users. These results highlight the incremental value of social network position in a user's contribution to the growth of a platform.

Saturday, 8:30AM

SA11

Cambridge - Level 2
Social Media: Networks
Contributed Sessions

2 The Salience of the Core-Periphery Structure and Social Influence on New Product Diffusion in Online User Communities

Soobin Lee[1], Jae Young Lee[1], Tae-Hyung Pyo[2], [1]Yonsei University, Seoul, Korea, Republic of; [2]University of Idaho, Moscow, ID, Contact: soobinlee@yonsei.ac.kr

An Online User Community (OUC), a virtual society where people gather to communicate over their shared interests, has evolved into a key player that helps determine the success of new product diffusion. In this research, we distinguish the OUC members into two groups: core (i.e., densely-connected members) and periphery (i.e., loosely-connected members), then shed light on how the salience of the core-periphery structure (i.e., the extent to which an OUC has a salient distinction between core and periphery) in OUCs affects social influence as a mechanism in in-group diffusion of new products. For empirical analyses, we analyzed in-group diffusion of new songs in OUCs hosted in Last.fm, one of the world's most influential online communities over music. According to our empirical findings, social influence plays a more important role in the diffusion of new songs in OUCs with a less salient core-periphery structure. Interestingly, such a negative relationship becomes stronger when the focal song has greater brand equity and greater compatibility with the focal OUC's shared interest. As for theoretical implications, our findings help better understand social

influence as a driving mechanism of new product diffusion and competitive motivation as its underlying psychological driver. Plus, our research contributes to comprehensive understanding about a novel network metric, the salience of the core-periphery structure. In addition, our findings and the intuitive metric provide practical insights to OUC managers who aim their OUCs to be more socially active, and marketing practitioners who design for effective promotion campaigns of their new products.

Saturday, 8:30AM

SA11

Cambridge - Level 2
Social Media: Networks
Contributed Sessions

3 A Co-Evolution Model of Network Formation and Content Generation

Mirai Igarashi[1], Nobuhiko Terui[2], [1]Osaka University, Toyonaka-shi, Japan; [2]Tokyo University of Science, Chiyoda-ku, Japan.

Understanding how individuals form social relationships and generate contents on social media is fundamental for both academic and practitioners. In the context of the co-evolution modeling, the formation of social networks and the behaviors of individuals are jointly modeled as they influence each other. However, too little attention has been paid to qualitative aspect of the behavior such as sentiment and topic of contents. This study proposes a Bayesian co-evolution model incorporating dynamic network model and topic model to describe the interdependent processes of network formation and content generation. The proposed model are empirically applied to the data in Japanese story telling platform.

Saturday, 8:30AM

SA11

Cambridge - Level 2
Social Media: Networks
Contributed Sessions

4 Estimating Endogenous Social Influence in Dyadic Networks with Incomplete Information

Sadat Reza[1], Dixon Ho[2], Rich Ling[3], [1]Nanyang Technological University, Singapore, Singapore; [2]Wilfred Laurier University, Waterloo, ON, Canada; [3]Nanyang Technological University, Singapore, Singapore. Contact: sreza@ntu.edu.sg

In this research, we examine endogenous social influence in a binary choice context when peers' choices may not be directly observed. Evidence reported in the extant literature suggests that when peers' choices are directly observed such choices may affect consumers' own choices. Furthermore, studies reveal that tie-strength and embeddedness with their peers significantly moderate the extent of such endogenous social influence effect. Whether these results apply in the context of promotion redemption where peers' choices are not directly observed is not known. In such incomplete information situations consumers can only form expectations about their peers' choices. We examine this question using data from a carefully designed free sample offer by a telecom operator providing wireless services in an emerging market. We extend the heterogeneous rational expectations model to estimate the extent of endogenous effect with such dyads. An important challenge in examining social influence is that the existing identification results require complete information of the socio matrix. We show that under certain assumptions identification of endogenous effect in a dyadic relationship holds with data from all columns of the sociomatrix for only these dyads. We then estimate the extent of endogenous peer effect between the members of closely connected dyads and how the effect varies by tie-strength. These estimates suggest that endogenous social influence may manifest even in the contexts where the peers' choices are not directly observed. We then discuss how firms may optimize targeted communication decision in such contexts.

Saturday, 8:30AM

SA12

Trinity - Level 2
Innovation: Marketing and Innovation
Contributed Sessions

Session Chair
Christian Hotz-Behofsits, Vienna University of Economics and Business, Vienna, Austria.

Saturday, 8:30AM

SA12

Trinity - Level 2

Innovation: Marketing and Innovation

Contributed Sessions

1 Optimizing Rating Systems for Innovation

Sherry He, UCLA Anderson School of Management, Los Angeles, CA

I study how rating system design affects innovation incentives. In settings in which product quality cannot be observed prior to purchase, online ratings serve as a signal of product quality for consumers and affect demand. Owing to their impact on sales, ratings also motivate firms to innovate. If firms use displayed ratings to guide their investments in improving product quality, then platform rating aggregation policies can play a key role in increasing or decreasing firms' innovation incentives. I study the impact of online rating systems on innovation incentives and, more importantly, the implications of the design of the rating aggregation policy. After collecting a unique firm-level dataset from a mobile game app platform, I combined reduced-form analysis and a structural model to show how rating systems can be optimized for innovation. I show that innovation has a positive impact on all key rating system metrics and that a lower rating significantly increases innovation incentives. Building on empirical evidence, I develop a dynamic structural model to represent firms' forward-looking behavior and estimate innovation cost. I then evaluate the impact of alternative rating aggregation policies on innovation incentives. The counterfactual analysis shows that placing greater weight on recent ratings can increase the innovation rate substantially.

Saturday, 8:30AM

SA12

Trinity - Level 2

Innovation: Marketing and Innovation

Contributed Sessions

2 How Product (Dis-)similarity in Successive Product Generations Affects Brand Performance

Christian Hotz-Behofsits[1], Nils Wloemert[2], [1]Vienna University of Economics and Business, Vienna, Austria; [2]Vienna University of Economics & Business, Vienna, Austria. Contact: christian.hotz-behofsits@wu.ac.at

An important question for firms managing successive product generations is to what extent they should adapt new product generations to emerging market trends. One example is the music industry, where trend cycles are short, and artists need to decide whether and how to adapt the musical style of their new releases to current trends. On the one hand, adapting successive product releases to mainstream tastes may help artists attain commercial success by appealing to a larger audience. On the other hand, by adapting their musical style to mainstream tastes, artists risk alienating existing fans and diluting their unique appeal by facing stronger competition from other artists with a similar style. This, in turn, may weaken the artist-fan connection and negatively affect demand. To empirically investigate which of these effects dominates, we collect information on the musical style of 18,000 successive album releases by 11,000 artists across eight dimensions. Our observation period spans three years and, besides information on musical style, comprises information regarding the weekly number of streams, playlist placements, and unique listeners for the artists associated with these new releases. We then construct quasi-experiments around the new releases to analyze to what extent the effects of new releases on an artist's overall demand, the number of playlist listings, and listener base are contingent on the (dis-)similarity between the new release and i) prior releases of the same artist, and ii) current popular mainstream releases by other artists. Our results uncover substantial heterogeneity in these effects, showing overall positive effects of content adaptation to popular tastes for less established artists while established artists are, on average, negatively affected by such content adaptations. We derive guidelines for the development of artist brands.

Saturday, 8:30AM

SA12

Trinity - Level 2

Innovation: Marketing and Innovation

Contributed Sessions

3 Do Health Pandemics Fuel Innovation?

Xixi Hu, Sauder School of Business, University of British Columbia, Vancouver, BC, Canada. Contact: xixi.hu@sauder.ubc.ca

The shifts of innovation and movement of talents longitudinally and cross-nationally are of great interest to firms and policy makers, particularly during period of major health outbreaks. Using text analysis techniques, we classify health literature into different disease categories to supplement our patent and drug pipeline data. We study the shift of innovation under the natural experiment of pandemic outbreak by comparing the country-level and disease-level innovation during the SARS and other recent pandemics with the synthetic control methods and difference-in-difference design. We document a sudden and persistent increase in country-level innovation quality for the pandemic diseases. This increase in innovation is more prominent in countries with more severe outbreaks. We also show consistent results using different innovation measures and pandemic-related viruses. Our study shows that pandemics fueled innovation activities, with spillover effects to the related virus categories, providing a beacon of hope on the resilience of our society.

Saturday, 8:30AM

SA12

Trinity - Level 2

Innovation: Marketing and Innovation

Contributed Sessions

4 Drivers of Multiple-Unit Ownership of Mobile Broadband Technology Across Countries and Their Boundary Conditions

Mohammad Akbar, University of Guelph, Guelph, ON, Canada. Contact: makbar@uoguelph.ca

In cross-country diffusion studies, adoption rates or times are typically investigated, although multiple-unit ownership (aka multiple subscription) of an innovation happens to be a critical diffusion feature for certain innovations. Years of cross-country diffusion data show that Mobile broadband (MB) technology has definite evidence of multiple subscription (measured by the number of SIM cards owned by a user) that is rarely researched. The effects of few critical diffusion drivers (i.e., agglomeration of multinationals, population density, and ethnic diversity) of multiple subscription of MB are investigated along with relevant boundary conditions. As for diffusion drivers, regional agglomeration of multinationals is rarely examined in diffusion literature. A longitudinal dataset on multiple subscription of MB and relevant covariates (e.g., market concentration, innovativeness, globalization, etc.) is used covering 169 countries from 2000 to 2016. The results show that agglomeration of multinationals, population density, and ethnic diversity have curvilinear effects on multiple subscription, while controlling for relevant covariates. Three test criteria to claim (inverted) U-shaped relationships are met. For causal inferences, generalized propensity score weights are used to account for selection bias. Additionally, national income significantly moderates the inverted U-shaped relationships between agglomeration of multinationals and multiple subscription as well as between population density and multiple subscription. Such moderation testing either steepens or flattens the inverted U-shaped curves, while increases the generalizability of hypothesized predictions. For multiple-unit ownership, the issues like complementarity or substitution are well-researched, but how multiple subscription contributes to the overall diffusion of a technology needs to be seriously explored. Because multiple subscription of MB has become prevalent in many developed countries while it has been popular for many years in developing countries.

Saturday, 8:30AM

SA12

Trinity - Level 2

Innovation: Marketing and Innovation

Contributed Sessions

5 The Impact of Digitalization and Innovation on Movie Theatres: Evidence from the Mexican Movie Market

Stephany Castruita[1], Michael Wu[2], Richard T. Gretz[3], Suman Basuroy[2], [1]University of Texas at San Antonio, San Antonio, TX, [2]Michigan State University, East Lansing, MI, [3]University of Texas at San Antonio, San Antonio, TX, Contact: stephany.castruita@utsa.edu

Conventional wisdom suggests that technological advances increase success. This paper aims to examine the impact of digitization, through innovation, on the demand side of movie theaters. This study proposes a moderation model by positioning innovation (i.e., product and process innovations) prompted by digitization, which impacts movie theater success, and independent movie theater demographics (e.g., income and population) as moderators of theater success. A difference-in-difference approach is used for the exploratory analysis using detailed data from a major exhibitor chain in the Mexican movie industry from 2007 - 2017. The exploratory analysis shows that the conversion of movie theaters to digital projectors has a positive and significant effect on weekly box office revenues of 9.2%. Furthermore, it is expected that movie theaters located in rural areas will benefit from process innovations that provide greater variety and flexibility of content but maintain low prices and for movie theaters in urban areas to explore high-end innovations such as 3D, 4D, and novel VR showrooms. The implications of the findings can have an important contribution to the growing literature on the economics of digitization and innovation, specifically by addressing the cost reduction implications of digitization.

Saturday, 8:30AM

SA13

Escorial - Level 2
Channels: Multi-Channel I
Contributed Sessions

Session Chair
Amiya K. Basu, Syracuse University, Syracuse, NY

Saturday, 8:30AM

SA13

Escorial - Level 2
Channels: Multi-Channel I
Contributed Sessions

1 The Effects of Off-Priced Store Openings on the Incumbent Channels of a High-End Multichannel Retailer

Rishika Rishika[1], Sri Harsha Kamatham[2], Ramkumar Janakiraman[3], Subodha Kumar[4], [1]North Carolina State University, Raleigh, NC, [2]University of Manitoba, Winnipeg, MB, Canada; [3]University of South Carolina, Columbia, SC, [4]Fox School of Business, Temple University, Philadelphia, PA, Contact: rrishik@ncsu.edu

Many high-end retailers operate off-priced versions of their premium stores to engage with value conscious customers. In this study, the authors conduct a comprehensive examination of the effects of a retailer's opening of off-priced stores on different aspects of customer shopping behavior. Using a unique customer-level dataset spanning pre- and post-opening of multiple off-priced stores, we disentangle the effects of off-priced store opening on the full-priced physical stores and online stores. We employ the latest methods in causal inference and estimate the impact of off-priced store openings on customer multi-channel shopping behavior. Results document interesting substitution and complementarity effects across the incumbent channels. We identify the mechanisms that can explain these effects. We conduct a battery of robustness checks to rule out the effects of confounding factors and address endogeneity concerns. Based on the results, we offer implications for high-end multichannel retailers.

Saturday, 8:30AM

SA13

Escorial - Level 2
Channels: Multi-Channel I
Contributed Sessions

2 Old Customers Never Die. They Just Fade Away

Sol Lee[1], Minki Kim[2], Jin Soo Han[1], [1]KAIST College of Business, Seoul, Korea, Republic of; [2]KAIST Business School, Seoul, Korea, Republic of. Contact: ls0706@kaist.ac.kr

The COVID-19 pandemic has had a profound impact on our lives, as lockdowns have necessitated the use of digital technologies. This has led to a swift digitization of the customer journey, but also increased the potential for a wider digital divide among older generations. Our research focuses on the differences in channel usage between generations in the TV-home shopping industry and how the addition of digital channels affects customers' experiences. We found that overall consumption increased after the pandemic, especially among Baby Boomers and Traditionalists/Silent generation, but that customers may have difficulty completing purchases when searching for product information, particularly older generations. With population aging being a key demographic trend, we highlight the need for firms to address the challenges faced by older customers with digital technologies.

Saturday, 8:30AM

SA13

Escorial - Level 2
Channels: Multi-Channel I
Contributed Sessions

3 Understanding Multichannel Multimedia Allocation

Edlira Shehu[1], Prasad Naik[2], [1]University of Groningen, Groningen, Netherlands; [2]University of California Davis, Davis, CA, Contact: e.shehu@rug.nl

Retailers employ multiple advertising media (e.g., TV, Paid Search) to drive sales across multiple channels (e.g., offline stores, online stores). The effectiveness of media to increase sales varies across channels and over time. The sales channels themselves may exhibit time-varying carryover effects and cross-channel spillovers. Given this multichannel multimedia environment, firms face the challenge on how to determine the advertising budget and allocate it to the multiple media, taking into account channel interdependencies and time-varying media effectiveness, carryover and spillover effects. In this paper, we address the gaps in the extant literature on (i) time-varying channel dependencies and (ii) dynamically optimal budgeting and allocation in multichannel settings. To this end, we formulate a multimedia multichannel model with M; channels and N; media. We analytically derive the optimal advertising budget and its optimal allocation to N; media in the presence of time-varying effectiveness, carryover and spillover effects across M; channels. We then estimate the model using weekly data from a major retailer with over a billion-dollar annual sales in two channels and a comprehensive set hitherto of thirteen online and offline media. Empirical findings show that media effectiveness varies over time. In contrast to the extant literature, we also find that channel-specific carryover effects and cross-channel spillover effects also vary over time. These results not only augment our understanding of multimedia multichannel marketing, but also guide practicing managers to improve their budgeting and allocation decisions.

Saturday, 8:30AM

SA13

Escorial - Level 2
Channels: Multi-Channel I
Contributed Sessions

4 Distribution Intensity, Retailer Competition and Channel Coordination: A Salop Circle Approach

Amiya K. Basu[1], Atasi Basu[2], Charles A. Ingene[3], [1]Syracuse University, Syracuse, NY, [2]Utica University, Utica, NY, [3]University of Oklahoma, Norman, OK, Contact: abasu@syr.edu

We analyze a channel of distribution where a monopolistic manufacturer, as leader of the channel, selects distribution intensity and wholesale price, and independent retailers follow by selecting price. Retailer competition is analyzed using a new model that combines the Salop model of circular city and equidistant retailers with linear demand at each location on the circle. We obtain the Nash equilibrium in retailer prices in closed form and show that through the choice of decision variables, the manufacturer can dictate whether the retailers are local monopolies or in competition, and how much market is served. By increasing distribution intensity, the manufacturer can suppress retailer mark-ups, approximately coordinate the channel, and secure most of the profit gains. Assuming that a retailer requires a minimum profit to participate, we show that the manufacturer can coordinate the channel by setting a wholesale price higher than the manufacturer's marginal cost if there are multiple competing retailers. We show that the manufacturer's profit is maximized by a two-part tariff system with a fixed fee, and identify two simpler systems that give close to optimal profits without imposing any fee. Finally, we identify an exclusivity parameter capturing the quality of the product, and show that distribution intensity should be low when exclusivity is high. We also show that a manufacturer may find it profitable to increase distribution intensity by subsidizing the retailers when exclusivity is low.

Saturday, 8:30AM

SA14

Alhambra - Level 2
UGC: Reviews III
Contributed Sessions

Session Chair
Jikyung Kim, 1</sup

Saturday, 8:30AM

SA14

Alhambra - Level 2
UGC: Reviews III
Contributed Sessions

1 Improving Product Quality Control Through User-Generated Content Analysis: Applications in the Food Industry

Srinagesh Gavirneni[1], Miguel I. Gómez[1], Koichi Yonezawa[2], Xinrong Zhu[3], [1]Cornell University, Ithaca, NY, [2]University of Bristol, Bristol, United Kingdom; [3]Imperial College London, London, United Kingdom. Contact: koichi.yonezawa@bristol.ac.uk

User-generated content (UGC) is an important yet under-explored new source of knowledge for performance evaluations of product and production attributes. These data are often high-dimensional, unstructured, and voluminous, presenting empirical challenges for analysis. We use methods from natural language processing to illustrate how the food industry can leverage UGC to facilitate qualitative analysis on customer needs, by performing evaluation of sentiment and topic modeling. We further study the relationship between the identified customer needs and relevant product and production characteristics. By analyzing about 12,000 customer reviews from a major dairy manufacturer in the US, we identify distinctive topics of customer needs such as smell-related, taste-related, and package-related; and show that certain product characteristics or manufacturing facilities are more likely to incur particular issues. Compared with conventional methods, ours has the potential to provide manufacturers with better product management and production quality control with lower cost and in a timely fashion.

Saturday, 8:30AM

SA14

Alhambra - Level 2
UGC: Reviews III
Contributed Sessions

2 Strategic Rating Behavior

Ali Cakal, Koc University, Istanbul, Turkey. Contact: acakal14@ku.edu.tr

Online product ratings are an important source for obtaining product information. It has also been shown that product ratings are prominent drivers of sales. Therefore, it is critical to understand what influences product rating behavior. In this paper, we contribute to the literature on factors that influence online product rating. Using rating and review data from a beer rating website, we show that users provide lower ratings to beers as the number of reviews that the users see when they are rating the beer increases. Additionally, we find that the effect of the number of previous reviews is moderated by the average rating of products. Specifically, our results show that the main effect is mitigated when the average rating of a product is higher.

Saturday, 8:30AM

SA14

Alhambra - Level 2
UGC: Reviews III
Contributed Sessions

3 The Effect of the Lockdown Announcement on Online Product Reviews

Shuang Zheng[1], Hang Dong[2], Jie Ren[3], Jikyung Kim[4], Balaji Padmanabhan[5], [1]School of Information Management and Artificial Intelligence, Hangzhou, China; [2]IE Business School, IE University, Madrid, Spain; [3]Fordham University, New York, NY, [4]IE Business School, IE University, Madrid, Spain; [5]Muma College of Business, University of South Florida, Tampa, FL, Contact: jeanne.kim@ie.edu

We find a systematic negative shift in the online product ratings for the same products on Amazon shortly after the announcement of the lockdown due to COVID-19 in the US. Using the difference-in-differences approach, we verify the change in rating for electronic products before and after the announcement on the 16th of March 2020 against the same dates the year before (2019). We propose that the rating change is in large part due to the mood shift rather than any real change in the product experience based on past literature that consistently reports worsened mood after the announcement. While no direct evidence for this explanation exists, we suggest several indirect evidence to support our claim. First, the rating change is not entirely due to product experience, because we find a similar drop in ratings across a variety of products, including cosmetics, clothing, gift card, and music. Second, it cannot be mostly due to the change in the shopping experience, since we also find a similar drop in rating for the game review on the online game platform Steam, where transactions have happened entirely online since the service began. Third, we conduct sentiment analysis on the review texts of the Amazon review and find a significant drop in positive emotions (i.e., joy, trust, and love) and a significant increase in negative emotions (i.e., anger, disgust, sadness, fear, hate). These findings suggest that, in the face of an unexpected external negative shock, marketers can fight the ratings drop with efforts to directly influence consumers' moods.

Saturday, 8:30AM

SA15

Michaelangelo - Level 2
Healthcare: General I
Contributed Sessions

Session Chair

Seethu Seetharaman, Washington University in St. Louis, Saint Louis, MO

Saturday, 8:30AM

SA15

Michaelangelo - Level 2
Healthcare: General I
Contributed Sessions

1 Healthcare Apps, Customer Engagement and the Covid-19 Pandemic Crisis

Mina Ameri, Vanitha Swaminathan, Sushma Kambagowni, University of Pittsburgh, Pittsburgh, PA

Many healthcare apps saw a surge in downloads during the COVID-19 pandemic. However, despite their potential help in dealing with health, economic and social consequences of the pandemic, only a small proportion of healthcare apps attracted repeat usage. Furthermore, the risks imposed by the pandemic may have shifted user preferences. Thus, existing knowledge on how apps can increase engagement may not be applicable anymore. We provide an up-to-date analysis on how the role of main app feature types (social interaction, security, premium and experiential) in app engagement has changed due to COVID-19 pandemic. We use data on 493 healthcare apps from 2017 to 2020 to examine their user engagement in different purchase stages and utilize the variation in COVID-19 deaths across four countries to identify the pandemic's effect. Our findings show that the pandemic lead to a dramatic decrease in app engagement after the addition of premium features. Among other features, having security features was the most important factor for users, even overshadowing the increased demand for experiential features. Furthermore, although there was more interest in apps offering social features, the increased interest did not lead to continued usage. We discuss implications of these findings for theory, practice, and policy.

Saturday, 8:30AM

SA15

Michaelangelo - Level 2
Healthcare: General I
Contributed Sessions

2 Media Exposure and Consumer Preference: Understanding Consumer Choice Dynamics in the Pharmaceutical Market

Yue Wang[1], Ying Zhao[1], Yang Shi[2], Yi Zhao[3], [1]Hong Kong University of Science and Technology, Hong Kong, Hong Kong; [2]Shenzhen University, Shenzhen, China; [3]Marketing Department, Georgia State University, Atlanta, GA, Contact: ywangmk@connect.ust.hk

During the last two decades, the news industry has transited away from traditional print, television and radio into digital media. Given the change of the news media landscape and the unique features of different news outlets, the purpose of this paper is to empirically study the differentiating effects of media outlets on consumers' preferences and buying behaviors. We develop a state-space model that captures the dynamic impact of news exposure on consumers' preferences and the resultant purchasing behavior. The model is applied to the Chinese pharmaceutical market during COVID-19, when the market is characterized by a mixed view toward Chinese and Western medicine as well as an unprecedented interest towards the large volume of COVID-related news on Chinese/Western medicine produced by a variety of media outlets. Specifically, we study the impacts of news from TV, online commercial news platforms, and social media on consumer purchase by investigating whether and how sales of Chinese vs. Western medicine responds to news reports on their respective efficacy against the COVID-19 pandemic. The results provide evidence on media's impact on consumers' preferences for Chinese and Western medicine, with commercial news platform having a more significant impact than social media. A spillover effect was found from the news on COVID-related drugs to the sales of COVID-unrelated drugs. Additionally, news reports on Chinese medicine have a more substantial impact than those on Western medicine.

Saturday, 8:30AM

SA15

Michaelangelo - Level 2
Healthcare: General I
Contributed Sessions

3 "Nip It in the Bud!" Managing the Opioid Crisis: Supply Chain Response to Anomalous Buyer Behavior

Annie L. Shi, Seethu Seetharaman, Anthony Sardella, Michael Wall, Chenthuran Abeyakaran, Washington

University in St. Louis, St. Louis, MO, Contact: seethu@wustl.edu

Over the past three decades, the opioid epidemic has wreaked havoc upon thousands of communities across the US. In this study, we provide a supply-chain perspective to manage the ongoing opioid crisis. Using the ARCOS database -- which tracks opioid drug shipments across the entire supply chain in the US, spanning the period 2006 to 2012 -- we employ a novel anomaly detection algorithm to detect suspicious buyer activity. Our algorithm is non-intrusive on patient privacy, in that it does not rely on prescription-level data (from drug retailers or physicians). Using a random sample of 48,464 drug retailers, and tagging a subset of 188 among them, using observed convictions from the Drug Enforcement Administration (DEA) website, as "suspicious", we train our anomaly detection algorithm to detect suspicious buyers based on their historical opioid buying patterns. Our anomaly detection algorithm, which is built on a training set of 24,232 drug retailers, selected the hyperparameters on a validation set of 12,210 drug retailers (which includes the 94 convicted buyers), yields a precision of 100 % and a sensitivity of 46 % (thus yielding an F-1 score of 64 %) in terms of correctly detecting suspicious buyers in a test set of 12,210 drug retailers (which includes the remaining 94 convicted buyers). While we employ a total of 40 input variables to train the anomaly detection algorithm, it ultimately relies upon only 5 input variables to achieve its impressive predictive accuracy. By applying our algorithm on real-time opioid shipments data as and when orders are placed by drug retailers around the country, the DEA can flag those that are tagged as suspicious for further investigation. By halting large shipments of opioids through early identification of suspicious orders placed by either (willfully or otherwise) negligent, or outright criminal, drug retailers, dangerous drugs can be prevented from reaching vulnerable communities, thus saving lives.

Saturday, 8:30AM

SA16

Raphael - Level 2

E-Commerce: General III

Contributed Sessions

Session Chair

Jisu Cao, Texas A&M University, College Station, TX

Saturday, 8:30AM

SA16

Raphael - Level 2

E-Commerce: General III

Contributed Sessions

1 Product Development and Platform Design

Wei Lu[1], Avi Goldfarb[2], Nitin Mehta[3], [1]Rotman School of Management, University of Toronto, Toronto, ON, Canada; [2]University of Toronto, Toronto, ON, Canada; [3]University of Toronto, toronto, ON, Canada. Contact: wei.lu@rotman.utoronto.ca

Digital mobile apps and video game platforms often adopt a 30% commission rate on all consumer purchases. Such a high rate has been challenged both in public and in court, as one key argument is that a 30% rate hurts the innovation incentives of software developers. Nevertheless, empirical evidence of how commission rates affect innovations remains limited. Using a unique dataset of video games in the Early Access Program on Steam, we study how commission schemes can change both the product update decisions and the release decision to Steam's main Store of developers. We first use transformer-based neural network language models and supervised machine learning algorithms to classify updates into Feature, Regular, and Bug fix updates. Then, we document positive correlations between past product updates and consumer demand and between past demand and updates and current release decisions. Motivated by these facts, we construct and estimate a structural model of developer and consumer behaviors on platforms and find substantial costs for producing updates and releasing the product. We further examine the impact of varying platform commission rates on product development decisions and find that lowering commissions can lead to more updates, fewer games will be released, leading to an over-investment in Early Access.

Saturday, 8:30AM

SA16

Raphael - Level 2

E-Commerce: General III

Contributed Sessions

2 Love Me, Love My Dog? Influencer Identity and Live Stream Commerce

Yao Dai, Angela Yi Gao, The Hong Kong Polytechnic University, Hong Kong, Hong Kong. Contact: angela-yi.gao@connect.polyu.hk

On almost all live stream commerce platforms, influencers sell products to viewers in their live streams (or customers) in real time, and they also engage with the customers in an asynchronous manner via posting non-commercial and curated short videos. This research investigates the link between the characteristics of short videos posted by influencers and the performances of their live streams. We posit that influencers develop their identities (or perceptions in customers' minds) from their short videos, and such identities consequentially affect their live stream commerce performance. Using a TikTok data with detailed records of short videos and live stream commerce performances by 1,000 influencers in a year, we collapse the short videos and the products featured in the live streams into the same latent space using Latent Dirichlet Allocation (LDA). We calibrate the influencer identity dynamically, and assess dissimilarity between the identity of an influencer prior to a live stream and each product featured in the stream. We find that dissimilarity has an inverted U-shaped effect on the sales of products, and this effect is robust to alternative data, operationalization of influencer identity, and similarity measurements. The initial positive effect of increased dissimilarity on product sales is counterintuitive, yet plausibly consistent with the novelty effect, and is being tested in laboratory experiments. The results shed light on the importance of short videos to live stream commerce, a linkage overlooked in the influencer marketing literature.

Saturday, 8:30AM

SA16

Raphael - Level 2

E-Commerce: General III

Contributed Sessions

3 Understanding How Competing Products of Different Quality Tiers Affect Consumer Purchase and Return Decisions and the Implications to E-Commerce Platform Growth

Jisu Cao[1], Sha Yang[2], Chunmian Ge[3], [1]University of Connecticut, Stamford, CT, [2]University of Southern California, Los Angeles, CA, [3]South China University of Technology, Guangzhou, China. Contact: caojisu0319@gmail.com

We study the spillover effects of competing products of different quality tiers on consumer purchases and returns and the implications to e-commerce platforms' growth strategies. Although third-party sellers bring revenue to an e-commerce platform, low-tier products may create a negative spillover on purchases and returns for existing high-tier ones, thus hurting the platform's overall profits from third-party sellers. An expansion strategy without understanding such tradeoff may adversely lead to an inflow of low-tier products and aggravate the negative spillover effects, further crowding out high-tier products and forming a vicious cycle. While this tradeoff has not been explored in the literature, our research aims at closing this knowledge gap. To understand how the number of competing products of different quality tiers affects consumer purchases and returns, we developed and estimated a general-equilibrium model of consumers' purchase and return choice and sellers' entry decisions on their products. We obtained panel data of purchase and return records based on a random sample of 29,042 consumers from a leading daily deal platform in China. Leveraging the inventory availability information as novel instrumental variables, we causally identified the spillover effects of high-tier deals vs. low-tier deals on consumer purchases and returns. We find that one unit increase of high-tier products is related to a .24% decrease in the product return rate on average, while one unit increase in low-tier products is associated with a .20% increase in return rate. Using counterfactual simulations, we derived important policy implications on consumer purchase and return rate, competition, and profits for the platform under two growth strategies: promoting high-tier entries (by reducing the entry cost of high-tier deals) vs. deterring low-tier entries (by raising entry cost of low-tier deals). While the former results in a 10.22% increase in high-tier entries but a 5.36% increase in low-tier entries, the latter leads to 1.78% fewer low-tier deals but 3.76% more high-tier deals.

Saturday, 8:30AM

SA17

Balmoral Level 2

Choice Modeling: Search

Contributed Sessions

Session Chair

A. Yesim Orhun, University of Michigan, Ann Arbor, MI

Saturday, 8:30AM

SA17

Balmoral Level 2

Choice Modeling: Search

Contributed Sessions

1 Learning About Product Features Through Search: An Integrated Model of Consumer Search Query, Click and Purchase Decision in Online Platforms

Xuewen Wang[1], Ying Zhao[2], Yi Zhao[3], [1]HKUST, Hong Kong, Hong Kong; [2]Hong Kong University of Science & Tech, Clearwater Bay, KL, Hong Kong; [3]Marketing Department, Georgia State University, Atlanta, GA, Contact: xwangbx@connect.ust.hk

When buying less familiar and less frequently purchased products with large attribute space online, consumers are often uncertain about the key underlying features of the products as well as the connection between the product attributes and the key underlying features of the products. This uncertainty may affect consumers' decisions on which keywords to enter during product search, which product page to click on at the search result page, and finally which product to purchase. In this paper, we propose a dynamic structural model that includes consumers' search query, click and purchase decision allowing consumers learning about the underlying product features through observed product attributes during the search process. We apply the proposed model to a dataset from a large digital platform for financial products that contains individual consumers' search and purchase history for mutual fund. The empirical results provide evidence on consumer uncertainty and learning of underlying key product features through search process. Consumers tend to choose the search query and click funds associated with higher uncertainties on financial returns of the funds but avoid uncertainties when making purchase decisions. Counterfactual experiments are conducted to provide insights on information design at the online platform.

Saturday, 8:30AM

SA17

Balmoral Level 2

Choice Modeling: Search

Contributed Sessions

2 Optimal Trials in Search for Product Information

Zhen Liu, Benedictine University Goodwin College of Business, Lisle, IL, Contact: zhenliu@alum.northwestern.edu

A consumer can gain information of a product (a) prior to purchase by paying search costs, or (b) when actually owning a product, or (c) through trials (free or paid) for some period of time without and/or before purchasing the product in some industries. We consider a model where all of these three types of information gaining are available. The consumer decides (1) whether and when to start trials without paying search cost any more, and then (2) whether and when to stop trials and purchase the product. By assuming consumers can subscribe services for some period of time, our work is an extension of Ning and Villas-Boas (2022). Following the lines for Branco et al. (2012), we model the customer's expected valuation as a (continuous time) Brownian motion and formulate the customer's decision-making as a multiple optimal stopping problem. We characterize (1) the optimal stopping rules for either trial, or no trial, as a function of search costs, informativeness of each attribute, discount factor, and trial price, if any; and (2) characterize the optimal stopping rules for either purchase, or no purchase, as a function of informativeness of each attribute, discount factor, and trial and sales prices, if any. We find that optimal trial period is as a function of discount factor, and trial and sales prices, but is independent of search costs and informativeness. We discuss how the seller determines his optimal trial and sales prices, and how these prices affect the extent of the consumers' trial and purchase decisions. We also consider discount factors, switching costs, and fremium pricing strategy (limited access to attributes but longer trial periods).
Our results justify current practice of fixed-time trial periods in SaaS (Software as a Service) industry, and allows a marketing manager in SaaS industry to infer the optimal pricing strategies.

Saturday, 8:30AM

SA17

Balmoral Level 2

Choice Modeling: Search

Contributed Sessions

3 Optimal Scroll and Search Decisions

Jae Hyen Chung, The Chinese University of Hong Kong, Hong Kong, Hong Kong. Contact: jaehyenchung@cuhk.edu.hk

Using individual product search data from an online travel agency website Expedia, I study consumers' optimal decision to scroll down the product list and search through products. I build upon the sequential search model by Weitzman

(1979) and incorporate the scroll decision by consumer in the model. In this model, a consumer faces two dynamic programming problems---scrolling through the product list and searching among products that are scrolled. After a consumer is presented with the product listing, he observes and learns about the first product on the list. Then, he decides whether to scroll to next product and incur the scroll cost or to stop scrolling and begin the search process among products he has browsed by comparing the scroll cost and the expected marginal benefit of scroll. If he decides to scroll to the second product, this process is repeated until he decides to stop scrolling. In this paper, I first lay out the model and the scroll and search process. Then, I present the numerical experiments to demonstrate that the model can identify the consumer preference, the scroll cost, and the search cost. Empirically, I apply the model to the individual-level online search data on Expedia. This paper contributes to the consumer search literature by relaxing the assumption that consumers are aware of all products presented to them. The model developed in this paper allows consumers to search among only a subset of products instead of assuming that consumers browse all products on the lists and search among all of them. In addition, this approach can separate the scroll cost and the position effect, which are usually lumped together in the literature. Methodologically, this paper contributes to the literature by demonstrating that the model is identified even when the scroll decisions (i.e., where consumers stop scrolling) are not observed in the data.

Saturday, 8:30AM

SA17

Balmoral Level 2

Choice Modeling: Search

Contributed Sessions

4 Causal Impact of Motivated Beliefs

Yesim Orhun[1], Christoph Drobner[2], [1]University of Michigan, Ann Arbor, MI, [2]TUM, Munich, Germany. Contact: aorhun@umich.edu

The literature on motivated beliefs does not find consistent evidence of motivated belief shaping actions, and fails to distinguish the impact of motivated beliefs and the impact of exogenous beliefs on actions. We propose a new experimental paradigm to causally identify the impact of motivated beliefs on actions. We empirically compare the sensitivity of decision-making to motivated versus exogenous beliefs.

Saturday, 8:30AM

SA18

Windsor - Level 2

Impact of Market Design on Digital Platform and User's Welfare

Special Session

4 Session Co-Chair

Shaoyin Du, University of North Carolina at Charlotte, Charlotte, NC

Saturday, 8:30AM

SA18

Windsor - Level 2

Impact of Market Design on Digital Platform and User's Welfare

Special Session

Session Chair

Pallavi Pal, Stevens Institute of Technology, hoboken, NJ

Saturday, 8:30AM

SA18

Windsor - Level 2

Impact of Market Design on Digital Platform and User's Welfare

Special Session

1 The Effects of Delay in Bargaining: Evidence from Ebay

Jessica Fong[1], Caio Waisman[2], [1]University of Michigan, Ann Arbor, MI, [2]Northwestern University, Evanston, IL, Contact: jyfong@umich.edu

Delay has been utilized in negotiations across many settings but the effects of delay have been rarely studied empirically in the field. We measure the causal effect of delay using data from millions of negotiations on eBay. We find that for both buyers and sellers, the longer the bargaining party delays, the less likely the opponent is to continue the negotiation by countering. However, the downstream consequences vary. The more the seller delays, the more likely the negotiation fails, but the more the buyer delays, the more likely the seller is to accept the buyer's offer. The effects of delay are robust; they exist even under short amounts of delay (under 6 hours) and for negotiations for low-priced goods. We find that these effects are consistent with models of strategic delay, in which delay acts as a signal of bargaining power.

Saturday, 8:30AM

SA18

Windsor - Level 2
Impact of Market Design on Digital Platform and User's Welfare
Special Session

2 The Impact of Apple Tracking Transparency Framework on the App Ecosystem

Cristobal Cheyre[1], Benjamin T. Leyden[1], Sagar Baviskar[2], Alessandro Acquisti[2], [1]Cornell University, Ithaca, NY, [2]Carnegie Mellon University, Pittsburgh, PA

We study the impact of the implementation of Apple's App Tracking Transparency (ATT) framework on the Apple App Store ecosystem. We use comprehensive data on every app available in both the Apple App Store and Google Play Store ecosystems in the one year period around the implementation of ATT, and a difference in differences analysis to investigate whether the introduction of the privacy transparency framework affected the incentives for developers in the Apple ecosystem to create new apps, update their existing apps, or withdraw from the market. We also leverage data on the presence of Software Development Kits (SDK) in a select number of apps in each ecosystem to study how developers adapted specific functionalities in their products, such as the use of advertising platforms or payment systems. We find that the number of available apps in the Apple App Store ecosystem quickly recovers after an initial drop following the introduction of ATT. We do not find evidence suggesting that ATT has reduced developers' interest in the Apple ecosystem relative to the Google ecosystem. When analyzing the use of SDKs by apps in genres that rely heavily on advertising before ATT, we find a reduction in the use of Ad Mediation SDKs, and, an increase in the use of authentication and payment SDKs. Our results suggest developers did not withdraw from the market after ATT and instead adapted to operate under the conditions of a more protective privacy framework.

Saturday, 8:30AM

SA18

Windsor - Level 2
Impact of Market Design on Digital Platform and User's Welfare
Special Session

3 Impact of Product Selection in Live-Streaming Selling on Sales

Zhendong Zuo[1], Chen Zhou[1], Anindita Chakravarty[2], Yanlai Chu[3], [1]University of South Carolina, Columbia, SC, [2]University of Georgia, Athens, GA, [3]Renmin University of China, Beijing, China. Contact: zhendong.zuo@grad.moore.sc.edu

Despite of the worldwide exponential growth of live-streaming selling as a new marketing channel, factors driving the success of live-streaming selling remain understudied. In a typical live-streaming session, an influencer promotes products from multiple categories, and the influencer decides the set of products to promote jointly. Do sales of a focal product depend on what other products being promoted in the same session? If so, what kind of product mix facilitates sales of the focal product? These questions motivate us to study the impact of product selection on sales. In particular, we explore how the category complementarity between a focal product and all other products promoted in the same session affects sales of the focal product. We theorize that the effect has an inverted-U shape due to the interplay of two mechanisms: (1) category complementarity could strengthen the influencer's credibility, which increases the likelihood of session viewers buying the focal product; (2) category complementarity may also reduce diversity of product categories, which decreases session viewer traffic. To test the proposed effect and to provide empirical evidence of the theorized mechanisms, we leverage a unique live-streaming selling dataset from an Asia-based e-commerce platform and estimate a zero-inflated negative binomial model with corrections for endogeneity. Our research contributes to the live-streaming literature by extending this literature to the retail context and developing a deep understanding of how to improve influencer sales effectiveness in this context. The results of our research provide actionable insights for influencers, vendors, and platforms.

Saturday, 8:30AM

SA18

Windsor - Level 2

Impact of Market Design on Digital Platform and User's Welfare
Special Session

4 **Mergers and Acquisitions Among Platforms: An Empirical Study of the Food Delivery Market**
Shaoyin Du[1], Pallavi Pal[2], [1]University of North Carolina at Charlotte, Charlotte, NC, [2]Stevens Institute of Technology, hoboken, NJ, Contact: sdu7@uncc.edu
This paper investigates the effect of acquisition and merger on consumer welfare in multi-sided digital markets regarding the quality and price of the products and services provided to consumers. Theoretically, after the merger, there could be multiple forces in play on the platforms. On the one hand, the platforms could charge higher delivery fees after the acquisition, impairing the consumers' welfare. On the other hand, there are more restaurants available on the platform to choose from, and the integrated logistic system would shorten the delivery time. The larger choice set and the faster delivery time could increase consumer welfare after the merger. We study this question in the context of the merger and acquisition between two large online food delivery platforms UberEats and Postmates. Using a dataset that recorded all the information available on UberEats and Postmates websites before and after the acquisition, we look at the impact of UberEats' acquisition of Postmates on the quality and price of service provided to consumers. We find that the acquisition had a significant effect on the delivery fees charged to consumers, as well as on the number of restaurants that consumers can choose from.

Saturday, 8:30AM

SA19

Sandringham - Level 2
Pricing: Price Discrimination
Contributed Sessions

Session Chair
Yeji Lim, California State University

Saturday, 8:30AM

SA19

Sandringham - Level 2
Pricing: Price Discrimination
Contributed Sessions

1 **Lease for Less: A Price Discrimination Model of Why Auto Manufacturers Subsidize Leases**
Srabana Dasgupta[1], Dinakar Jayarajan[2], Sivaramakrishnan Siddarth[3], [1]Simon Fraser University, Vancouver, BC, Canada; [2]IIT Stuart School of Business, Naperville, IL, [3]University of Southern California, Los Angeles, CA, Contact: siddarth@marshall.usc.edu
Firms often use a line of products with different levels of price and quality to target different segments of consumers who vary in how much they value a product. In this research, we argue that automobile manufacturers implement such a price discrimination strategy via the financial terms offered on different ways of acquiring a car, i.e., on leasing and financing contracts. Specifically, we claim that manufacturers charge lessees a lower price than those paid by consumers who finance a car and use the mileage penalty in the lease contract to implement this price discrimination strategy. To test our theory, we begin by using transaction data on new and used car purchases to estimate a choice model of the consumer's decision to lease. This allows us to establish that lessees indeed drive less than those consumers who choose to purchase and therefore can be the basis of price discrimination for manufacturers. We then perform a reduced form regression of the price difference between purchases and leases on a set of control variables and the observed difference in driving distances between consumers of the two contracts to validate our hypothesis.

Saturday, 8:30AM

SA19

Sandringham - Level 2
Pricing: Price Discrimination
Contributed Sessions

2 **Impact of Prescription to Otc Drug Switches on Competitor Drug Prices**
Rahul Narnindi, Ernst C. Osinga, Sandeep R. Chandukala, Singapore Management University, Singapore, Singapore. Contact: rahuln.2020@pbs.smu.edu.sg
We investigate the effect of prescription (Rx) to over-the-counter (OTC) drug switches (Rx-to-OTC) on the prices of competing Rx and OTC drugs in the US market. Given the atypical nature of product exit, from the Rx channel, and entry, into the OTC channel, our key contribution is a comprehensive view of the ramifications of an Rx-to-OTC

switch. Using monthly SKU-level drug sales data collected over a span of 12 years by IMS Health, we investigate the effect of Rx-to-OTC switches of 8 brands on competitor prices in the Rx and OTC markets. We identify 1,882 competitor drugs by their Anatomical Therapeutic Chemical codes. Estimating a fixed effects model, we find that Rx competitor drugs increase prices significantly after a switch. We also find heterogeneity in the price responses of Rx competitor drugs - the main effect is attenuated for switched drugs with higher market share, generic Rx competitors, and for Rx competitors that are of the same product form as the switched drug. In addition, we find that OTC competitor drugs implement a price drop if they have the same product form as the switched drug, are generic OTC competitors and if they possess a higher market share before the switch. Thus, while Rx-to-OTC switches may result in increased public drug access, Rx customers who purchase competitor drugs may be burdened by increased prices after the switch. Implications for public policy makers and managers are explored.

Saturday, 8:30AM

SA19

Sandringham - Level 2
Pricing: Price Discrimination
Contributed Sessions

3 Consumption Optimization on Over-The-Top (Ott) Platform Pricing

Yeji Lim, California State University, Fullerton, CA, Contact: yejilim@fullerton.edu

Over-The-Top (OTT) Video on Demand service platforms, including Netflix, Amazon Prime Video, and Disney+, have emerged as the leading online services globally since the onset of the COVID-19 pandemic in 2019. The high demand for these services has led to a competitive market and an increase in pricing. However, the relationship between pricing and consumer utility in the context of OTT services remains an unexplored area. To address the current gap in understanding, we propose a consumption utility model framework that captures the consumer's optimal choice towards different pricing options, including the impact of new content and subscription pricing changes, such as charges for additional homes or basic pricing plans with advertisements. The framework enables an analysis of optimal consumer choices under each pricing scheme and a projection of the firm's sales revenue, which is heavily dependent on subscriber numbers, given the business model. In this research, we uncover that the extra charges for each additional home may decrease the consumers' utility and lead to consumers canceling their subscriptions, especially if they have alternatives such as YouTube or Amazon Prime Video. Furthermore, we discover that the platform firm risks losing profits in the long run by implementing such pricing strategies for account sharing in different locations.

Saturday, 10:30AM

SB01

Trade Room- Lobby Level
ML: Methodology
Contributed Sessions

Session Chair
Hong Deng, Erasmus University Rotterdam, Rotterdam, Netherlands.

Saturday, 10:30AM

SB01

Trade Room- Lobby Level
ML: Methodology
Contributed Sessions

1 Personalized Dynamic Price Promotion in Storable Goods Markets: An Offline Reinforcement Learning Approach

Junyi Dong, Yanzhi Li, Minkyu Shin, City University of Hong Kong, Kowloontong, Hong Kong. Contact: minkshin@cityu.edu.hk

Consumer responses to price promotions can vary across different consumers due to their heterogeneous preferences and time-varying latent states, such as inventory, in storable goods markets. As a result, retailers often resort to personalized dynamic price promotions to maximize revenue, which has been made possible by rich data containing fine-grained information about consumer behavior. The conventional estimate-then-optimize approach, however, may not take full advantage of such rich data due to well-known issues such as model misspecification and variable estimation error. In this paper, we develop a scalable offline reinforcement learning approach for personalized dynamic price promotion in the context of storable goods. Based on business insights and domain knowledge, we propose an effective approximation to state-action function and learn the approximation function directly from data. Our approach is robust to the issues that have troubled the conventional two-stage approach. Both synthetic and real-data experiments demonstrate that it achieves consistently better performance compared to the estimate-then-optimize approach. Our approach can reap most of the potential benefit of personalization, yet in comparison, the estimate-then-optimize approach can only recover only a substantially smaller fraction. Our study also shows that considering cross-sectional heterogeneity with misspecified models may backfire under the estimate-then-optimize approach. We explore the conditions under which our approach yields the most benefit and also the boundary conditions for the validity of the proposed approach.

Saturday, 10:30AM

SB01

Trade Room- Lobby Level

ML: Methodology

Contributed Sessions

2 Product Return Increase Sales on E-Commerce Sites? - An Analysis Using Matrix Factorization Approach

Sohum Mehrotra[1], Baohong Sun[2], Shibo Li[1], [1]Indiana University at Bloomington, Bloomington, IN, [2]Cheung Kong Graduate School of Business, New York, NY, Contact: somehro@iu.edu

E-commerce sites select brands, prices, promotions, and return policies across many cross- category/brand items. Lenient return policies and promotions jointly increase purchase, but the 20-30% return rate is problematic. Therefore, platforms must assess the positive effects of product return on 1) increasing net sales and 2) encouraging customer exploration of new product categories/brands. Most extant research solely focuses on the return policy of a single product category/brand, which leaves many questions unanswered in the context of e-commerce: 1) what is the interplay of consumer purchase and return decisions and do these decisions spill over to other category/brands? 2) do the promotion methods differentially affect purchase and return decision? 3) how does each promotion method impact immediate sales, return, and across category/brand expansion - all of which subsequently impact net sales? 4) can return policy and promotion design be improved to leverage the effects of product return? In this paper, we propose a nested hierarchical factorization model to jointly model consumers' brand purchase and return decisions across many product categories/brands. We adopt the recently developed matrix factorization approach with variational Bayes and stochastic gradient descent. Compared to standard choice models, this ML approach allows us to derive statistical inference, consider a large brand choice set with stock-out consideration, and permit price and promotion coefficients to vary and correlate across brands. The model was applied to across- category/brand consumer purchase history data that was collected by a flash sale e-commerce website. The results demonstrate the dynamics as well as the interplay between the two decisions. We show the spillover effect of price and promotion on purchase and return across category/brands. By comparing differential effects on purchase and return, we provide important actionable implications for marketing practitioners on the improvement of their promotional strategies to improve net sales.

Saturday, 10:30AM

SB01

Trade Room- Lobby Level

ML: Methodology

Contributed Sessions

3 Non-Discriminatory Bandits

Bob Rombach[1], Yang Li[2], Gui Liberali[1], [1]Erasmus University, Rotterdam, Netherlands; [2]Cheung Kong Graduate School of Business, Beijing, China.

Conventional multi-armed bandit algorithms such as UCB1 and Thompson sampling lead to winner-take-all scenarios, in which the arm with the highest expected reward will be pulled more often. We propose a bandit recommendation algorithm that produces non-discriminatory recommendations while ensuring a fair distribution of group-level regrets. Specifically, we consider non-discriminatory recommendations as the recommendation agent being blind to the group membership of each individual user, and achieve a fair distribution of group-level regrets by auditing and calibrating a fairness correction metric using the online estimates of group-level preferences. We find that the effect of omitting sensitive variables on group-level performance depends on the similarity between a group and the overall population. Also, correction for fairness in a bandit results in additional costs to the recommendation agent and such cost is related to the difference in the cumulative arrival frequencies between groups.

Saturday, 10:30AM

SB01

Trade Room- Lobby Level

ML: Methodology

Contributed Sessions

4 Adaptive Personalization with Next-Best-Model Bandits

Hong Deng, Bas Donkers, Dennis Fok, Erasmus University Rotterdam, Rotterdam, Netherlands. Contact: deng@ese.eur.nl

Personalization strategies are an essential component of today's marketing landscape. The ultimate strategy would build on a large set of customer and contextual variables used to optimally select among many available marketing actions. Contextual multi-armed bandit algorithms can help online retailers, and marketers in general, to adaptively select optimal customized actions, and help solve the exploration-and-exploitation trade-off. However, conventional contextual bandit algorithms usually consider only a small set of variables, while in real-world problems, there are many potentially relevant variables. Moreover, their impact on the outcome of interest can be time-varying. Exploration is beneficial to identify relevant variables, but when there are many variables taken into consideration, it can take too long to learn the impact of each variable, resulting in inefficiencies and, therefore, also profit reductions. We propose a bandit approach using sequential variable selection to adaptively learn both the optimal model specification and the action-selection strategy. Our method allows firms to run cost-efficient bandit algorithms on high-dimensional data and promptly recognize time-varying optimal actions.

Saturday, 10:30AM

SB02

Flagler - Lobby Level

Social Media: The Role of Influencers III

Contributed Sessions

Session Chair

Evert de Haan, University of Groningen, Groningen, Netherlands.

Saturday, 10:30AM

SB02

Flagler - Lobby Level

Social Media: The Role of Influencers III

Contributed Sessions

1 Influencer Content Differentiation and Diversification: A Representation Learning Approach

Felix Nguyen, David Schweidel, Emory University, Atlanta, GA, Contact: phuc.hung.nguyen@emory.edu

The proliferation of influencer marketing and the increasing significance of the content economy have made it imperative for firms and researchers to understand the factors driving the level of engagement an influencer may generate. Prior research in this area has largely focused on evaluating the effect of content characteristics through either psychology-based constructs or machine learning methods. In this study, we instead examine an understudied yet crucial aspect of influencer content, which is its "novelty." To quantify this abstract construct, we propose an automatic, unsupervised approach utilizing the state-of-the-art representation learning method of Conditional Multimodal Variational Autoencoder. This approach generates novelty metrics in two dimensions: "differentiation," which refers to the novelty across influencers, and "diversification," which refers to the novelty in comparison to previous content by the same influencer. The methodology is applied to over 3 million Instagram posts generated by more than 2,000 influencers over a decade, and the relationship between these metrics and user engagement, follower size, and sponsorship status is analyzed with Two-Way Fixed Effects models. The results show that as an influencer's follower size increases, their content becomes less differentiated, possibly due to the influencer's attempt to cater to a broader audience. This trend, however, seems to be in opposition to audience demands, as our results demonstrate that content differentiation has a positive effect on engagement, especially among more popular influencers. On the other hand, we find that content diversification leads to adverse effects on average, but this is heterogenous across influencer tiers. Additionally, our findings suggest that sponsored content has lower novelty metrics on average, yet the effects of novelty measures are more pronounced for these posts. Our study sheds light on the complex relationship between influencer content novelty and audience engagement and provides a foundation for future research on this topic.

Saturday, 10:30AM

SB02

Flagler - Lobby Level

Social Media: The Role of Influencers III

Contributed Sessions

2 How Do Social Media Influencers and Brand Combinations Influence Advertising Effectiveness?

Yue Xi[1], Yixiao He[2], Jing Xi[2], Yushi Jiang[1], [1]Southwest Jiaotong University, Chengdu, China; [2]Johns Hopkins University, Baltimore, MD, Contact: xiyue@my.swjtu.edu.cn

Social media influencers recommend brands in many combinations, from using products mainly or solely from one brand (e.g., Nike shoes, overcoat, cap, shirt, and pants) to mixing-and-matching multiple brands (e.g., Nike shoes, Adidas overcoat, Puma shirt, and Under Armour pants). This work explores the novel determinants of social media influencer (SMI) advertising effectiveness, demonstrating a match between SMI type (e.g., mega- vs. micro-influencer) and brand combination (e.g., dominant- vs. mixed-combination). We find that consumers typically favor a foal product more when mega-influencers use a dominant-combination or micro-influencers use a mixed-combination. This effect is driven by consumers' heuristic and systematic processing. We also reveal the impact of moderator—product posting strategy (e.g., brand extension vs. new product): The brand extension strategy applies to mega-influencers using a dominant-brand combination; the new product strategy applies to micro-influencers using a mixed-brand combination and can alter consumer' downstream behaviour (e.g., clickthrough behaviour). Additionally, we evaluate live-streaming, where the proposed effect between SMI and brand combination positively influences viewers' social engagement behaviour (e.g., probability of liking). Six studies involving a range of products across two countries provide converging evidence that supports our hypotheses. Hence, our findings can contribute to more effective influencer marketing designs.

Saturday, 10:30AM

SB02

Flagler - Lobby Level

Social Media: The Role of Influencers III

Contributed Sessions

3 How Do Social Media Influencers Affect Product Quality Perception? Evidence from Gaming Industry

Qi Yu[1], Zhe Lin[2], [1]Singapore Management University, Singapore, Singapore; [2]Xi'an Jiaotong-Liverpool University, Suzhou, China. Contact: Zhe.Lin@xjtlu.edu.cn

Social influencers are a major source of information from which consumers could collect product quality signals before purchasing, especially in industries like computer hardware, video games, and films. This paper studies how consumer's product quality perceptions are affected by social influencers, who are under agreements with firms to strategically disclose product information. We construct a unique panel data on video games that contain the daily sales and followers of the 1500 top games on Steam, a leading gaming platform, and over 300,000 YouTube videos from top gaming influencers reviewing these games. We find that reviews produced through partnerships on average use more positive language than other reviews. However, these types of reviews are less effective in generating consumer interest and sales. In particular, these reviews bring in fewer game followers on Steam. Conditional on game quality, we don't find the number and valence of these reviews to affect the sales volume of a game. Both findings suggest that consumers are sophisticated enough to correctly infer the quality of games even from reviews with missing information. We discuss the implications of our findings for product information disclosure.

Saturday, 10:30AM

SB02

Flagler - Lobby Level

Social Media: The Role of Influencers III

Contributed Sessions

4 Social Insights Through Text Mining: Investigating How Book Promotion on Online Reading Communities Improve Literacy

Evert de Haan[1], Lily(Xuehui) Gao[2], Iguacel Melero[2], F. Javier Sese[2], [1]University of Groningen, Groningen, Netherlands; [2]University of Zaragoza, Zaragoza, Spain. Contact: evert.de.haan@rug.nl

Online communities have become a fundamental marketing instrument to connect and engage with consumers. Typically, the primary objective of marketing efforts in online communities is to influence brand and product-related outcomes, such as increased awareness, sales, and loyalty. Online communities can, however, also influence other key non-marketing outcomes, e.g., in the case of online book communities, it can increase readership and literacy. Such socially relevant impact of marketing has recently been

emphasized as academics and practitioners rethink the role of marketing in today's society, i.e., "marketing for a better world". In an attempt to contribute to this stream of research, this study aims to investigate the extent to which promotional activities in online communities by authors and publishers can help improve people's level of literacy, a key societal outcome. To accomplish this goal, we scraped data from Goodreads, an online book community with ~125 million worldwide users, on which both readers and authors are active. We have panel data on 18,647 randomly selected Goodreads users (readers), covering 15 years of data. These users have read in total 643,707 books by 70,706 unique authors, of which 30.7% are also active on Goodreads. Using a series of propensity score matching models and subsequent difference-in-differences analyses, we find that when authors become active on Goodreads, the books by these authors become more popular, especially if the author is very active on the platform. We also find that users start reading more books of a richer variety and increasing difficulty when they become active on Goodreads, and the reading activity (i.e., amount, variety, and difficulty of books) increases the user's literacy, which we capture by analyzing the user's written reviews. We exploited random shocks in the data (e.g., the COVID-19 pandemic) to validate the causality of our results, and we validated the generalizability of our results with external national and international literacy and readership data.

Saturday, 10:30AM

SB03

Dupont - Lobby Level
Marketing and Public Policy: Digital Economy
Contributed Sessions

Session Chair
Mike Nguyen, University of Missouri, Columbia, MO

Saturday, 10:30AM

SB03

Dupont - Lobby Level
Marketing and Public Policy: Digital Economy
Contributed Sessions

1 Towards a More Sustainable Digital Economy: A Holistic Understanding of Giving Consumers Rights to Control Their Information

Ngan Vo, Rajesh V. Manchanda, University of Manitoba, Winnipeg, MB, Canada. Contact: von@myumanitoba.ca

Consumers' privacy-protective behaviors are now commonplace to protect consumer data from falling into the wrong hands. Given a lack of comprehensive privacy regulatory framework and industry self-regulation in North America, a rise in consumers' privacy-protective behaviors may hinder the sustainable growth of the digital economy. Applying a multi-method approach that examined 155,021 consumers from 2019 to 2022, our research investigates how, why, and under which conditions notifying consumers about their rights to information control can attenuate their privacy-protective behaviors. Investigating consumer textual responses to one of WhatsApp's social media platforms during the period this company *publicly* launched a controversial new privacy policy in 2021, we documented consumers' negative emotions and switching behaviors to other secure platforms in response to the event that violated their rights to information control. Results from a field experiment and online experiments suggest that explicitly offering consumers rights to information control can mitigate their privacy-protective behaviors *only* when privacy concerns are salient in consumers' minds. When privacy concerns are inactive, giving consumers rights to information control may unexpectedly signal a warning to consumers and trigger their privacy-protective behaviors. Our work also suggests that when consumers are familiar with privacy violation news and changed privacy norms, especially in the wake of the COVID-19 pandemic, their privacy concerns may be dialed down, and notifying consumers of their rights to information control may lose its effectiveness. Additionally, we provide meaningful managerial implications for firms constructing business information strategies in the borderless digital economy.

Saturday, 10:30AM

SB03

Dupont - Lobby Level
Marketing and Public Policy: Digital Economy
Contributed Sessions

2 Behavior-Based Pricing Under Informed Privacy Consent

Yunhyoung Kim, Tony H. Cui, Yi Zhu, University of Minnesota, Minneapolis, MN, Contact:

kim01073@umn.edu

Recent privacy protection regulations require firms to get privacy consent from consumers before collecting consumers' information, which is called `informed privacy consent.' We study the impact of the informed privacy consent approach on behavior-based pricing, with which firms need privacy consent from consumers to practice third-degree price discrimination. Consumers' ex-ante endogenous privacy decisions are affected by two components: cost of risk from privacy breaches and avoidance to unfavorable discriminatory price in the following period. We find that consumers give privacy consent only if there is a monetary incentive for opting in, and that consumers' sophisticated privacy decisions lead to higher profits for firms even with the cost of compensation. This also holds when there is an additional utility from opting in (e.g. personalization, ease of ordering, etc.). We highlight that privacy regulations using informed privacy consent may harm consumer surplus.

Saturday, 10:30AM

SB03

Dupont - Lobby Level

Marketing and Public Policy: Digital Economy

Contributed Sessions

3 Privacy and Personalization Trade-Off: An Empirical Investigation in Healthcare Apps

Mike Nguyen[1,2], Mina Ameri[2], Vanitha Swaminathan[2], [1]University of Missouri, Columbia, MO, [2]University of Pittsburgh, Pittsburgh, PA

The interplay between personalization and privacy has been a critical area of concern in the marketing industry, as companies strive to provide customized experiences while safeguarding consumer privacy. In an effort to understand this relationship in the context of mobile app updates, this study explores the impact of the General Data Protection Regulation (GDPR) on app engagement through the pre-purchase, purchase, and post-purchase stages. Using data collected from 304 healthcare apps in the US, France, Germany, and Italy over a four-year period (2017-2020), the study examines the effects of GDPR and personalization on app outcomes such as revenue, downloads, search ranking, rating, and review.

Using the difference-in-differences approach, the results indicate that GDPR had a negative effect on app search, rating, and review, but a positive effect on app download and revenue. Furthermore, the study revealed that GDPR and app security updates had a substitution effect, with GDPR having a stronger impact on privacy when app security updates were low. Moreover, personalization was confirmed to have a positive impact on app engagement outcomes. The findings also suggest that the combination of personalization and security updates will lead to a positive synergistic effect on app outcomes. On the other hand, personalization can act as a dampening factor, reducing the impact of GDPR on app outcomes such as revenue, downloads, search ranking, rating, and review.

The study highlights the importance of understanding the trade-off between privacy and personalization in the context of mobile apps. The findings are useful for marketers seeking to strike a balance between these competing priorities in a manner that is both effective and compliant with relevant regulations. This study fills a gap in the literature by being the first study to investigate the trade-off between privacy and personalization in a field study within the healthcare domain.

Saturday, 10:30AM

SB05

Gusman - Lobby Level

Sustainability: General II

Contributed Sessions

Session Chair

Li Qin, 1</sup

Saturday, 10:30AM

SB05

Gusman - Lobby Level

Sustainability: General II

Contributed Sessions

1 Recycling and Consumers' Willingness to Wait

Lulu Shi[1], Linying (Sophie) Fan[1], Rongrong Zhou[2], Jiewen Hong[2], [1]Hong Kong University of Science and Technology, Kowloon, Hong Kong; [2]Hong Kong University of Science and Technology, Kowloon, Hong Kong. Contact: lshiak@connect.ust.hk

Recycling, which reduces waste generation and extends the life of materials, is becoming a common practice that consumers engage in on a daily basis. In addition, they are also constantly exposed to stimuli related to recycling such as recycling bins placed in buildings, posters that remind people to recycle, information about companies' recycling initiatives in their stores/on their websites. In this research, the authors aim to study the psychological consequence of recycling (the behavior itself as well as exposure to recycling-related cues in the environment) namely, its effect on consumers' patience and willingness to wait. Through six studies (lab/field experiments and archival data analyses), the authors provide evidence that recycling increases consumers' willingness to wait and argue that this effect occurs because recycling, due to its life extension nature, activates a concept of long life, which in turns influences people's perception of time availability and their willingness to wait for products and services. Furthermore, the authors find that this effect is attenuated if consumers have less inclination to extend the life of to-be-recycled products (e.g., when they are dissatisfied with the products). The authors conclude by discussing the implications of these results for marketing theory and practice.

Saturday, 10:30AM

SB05

Gusman - Lobby Level
Sustainability: General II
Contributed Sessions

2 Does Internationalization Affect Firm'S Environmental Sustainability Expenditure?

Kwabena Frimpong, KFUPM Business School, Dhahran, Saudi Arabia. Contact: frimpong@kfupm.edu.sa

This paper extends extant research on the nexus between firms' internationalization and their sustainable performance. Based on insights from the legitimacy and attention-seeking theories, the study further examined the controversial link between internationalization and sustainability expenditures. We extend this debate by examining the boundary constraints relating to foreign knowledge acquisition and level of institutional support available to firms. Survey data collected from 260 medium-sized SMEs from an emerging economy-Ghana were used to test a limited set of hypotheses. The results indicate that firms' level of internationalization is positively and significantly linked to their sustainability expenditures. A moderation analyses also suggest that the positive impact of internationalization on sustainability expenditures is stronger at high levels of institutional support and foreign knowledge acquisition. The theoretical and managerial implications of the findings are discussed.

Saturday, 10:30AM

SB05

Gusman - Lobby Level
Sustainability: General II
Contributed Sessions

3 Celebrity or Influencer Endorsements of Sustainable Behaviors: The Roles of Consumers' Power Distance Beliefs and Identification

Yoshiko DeMotta, Li Qin, Fairleigh Dickinson University, Teaneck, NJ, Contact: liqin@fdu.edu

Celebrity endorsements and social media influencer endorsements are widely used for marketing communications in many countries. Does their effectiveness vary across cultures in encouraging sustainable consumption behaviors? The authors propose that power distance beliefs (PDB), a cultural dimension measuring the extent to which people expect and accept differences in power, moderate the effects of endorser type upon consumers' intentions towards sustainable consumption behaviors. Our study found that consumers with high PDB indicated a higher sustainable consumption intention when a celebrity (vs. social media influencer) endorsement was presented, whereas consumers with low PDB indicated a higher sustainable consumption intention when a social media influencer (vs. celebrity) endorsement was presented. Consumers' identification with the endorser mediated these effects. Results provide insights for strategizing celebrity and influencer endorsements in promoting sustainable products and behaviors across cultures.

Saturday, 10:30AM

SB07

Merrick 1 - Lobby Level
Online Content: Social Media and Platforms
Contributed Sessions

Session Chair
Ying Xie, University of Texas-Dallas, Richardson, TX

Saturday, 10:30AM

SB07

Merrick 1 - Lobby Level
Online Content: Social Media and Platforms
Contributed Sessions

1 For My Candidate or Against Yours? Emotional Biases in Political Prediction Markets

Vahid Karimi Motahhar[1], Thomas S. Gruca[2], Mohammad Hosein Tavakoli[3], [1]Sabanci University, Istanbul, Turkey; [2]University of Iowa, Iowa City, IA, [3]Warwick Business School, Coventry, United Kingdom.

Emotions are often the spur to political action. But, in political prediction markets, such emotions collide with economic rationality. We examine the role of emotions in political prediction markets associated with the 2012 U.S. elections and the 2015 U.K. general election. . Using text analysis, we examine the justifications of traders buying contracts predicting the continuation of (or change in) the political status quo. Buyers of the status quo contract used significantly more positive emotional words (calculated by LIWC), and more positive sentiment (calculated by VADER), while buyers of the change contract used significantly more negative emotional words and negative sentiment. We separate emotionality from valence or extremity by using Rocklage 2018's Evaluative Lexicon as well. We use party vote share (US county or UK constituency) as a control for each trader. Unlike prior work, we find little evidence of the wishful thinking bias that predicts a positive justification regardless of which candidate's contract is purchased. In both the U.S. and U.K. election prediction markets, there is a significant linkage between positive (negative) emotions and political actions that support (oppose) the political status quo. This finding of the status quo bias in political prediction markets is consistent with previous research on political behavior including campaign communications and voting. Using multiple methods, we show an individual's positivity (and negativity) toward the political status quo (and the challenger) are consistent across text-derived measures, the party's previous vote share, and the type of election (US president v. UK parliament).

Saturday, 10:30AM

SB07

Merrick 1 - Lobby Level
Online Content: Social Media and Platforms
Contributed Sessions

2 Reaching Across the Political Aisle: Overcoming Challenges in Using Social Media for Recruiting Politically Diverse Respondents

Lena Song, UIUC, Champaign, IL

The use of Facebook ads to recruit participants for academic research has proliferated in the past decade. While it offers potential benefits as compared to other survey modes, it suffers from issues such non-representativeness and fraudulent responses. In this project we focus on one feature which may influence a potential participant to click on an ad, consent to begin, and complete a survey: the institution listed as fielding the survey. We test whether a potential participant's trust, or lack of trust, in an institution could affect their decision to participate and complete a survey. Respondents are recruited through two otherwise identical Facebook pages and ads listing: New York University (NYU, a more liberal university) and the University of Mississippi (Ole Miss, a less liberal university). We test whether Republicans will be more likely to both begin and complete surveys from Ole Miss as compared to surveys from NYU. Additionally, we will assess whether the Republicans who agree to participate under each treatment differ from each other in terms of easily observed characteristics such as education and region, and also, more importantly, in their political attitudes. Finally, we examine the extent to which suspicious, fraudulent responses affect our results, and provide practical guidance on minimizing the effect of such responses. Our findings will be a useful step forwards in overcoming existing challenges in recruiting politically diverse samples.

Saturday, 10:30AM

SB07

Merrick 1 - Lobby Level
Online Content: Social Media and Platforms
Contributed Sessions

3 The Power of Star Creators: Evidence from Live Streaming Industry

Ying Xie[1], Kun Qian[2], [1]University of Texas-Dallas, Richardson, TX, [2]Southern University of Science and Technology, Shenzhen, China. Contact: ying.xie@utdallas.edu

The digital content market relies on top talents, known as star creators, to produce high-quality content and attract consumers. The market also needs a large number of non-star creators to ensure content volume and variety. In this paper, we study the competition between star creators and non-star creators, and explore how the presence or absence of star creators influences the overall demand and supply of digital content. To test our theoretical predictions, we leverage two exogenous events that occurred on Twitch.tv to causally identify the effect of star exit using a synthetic DiD approach. We find, at the streaming category level, the exit of a star creator leads to a decrease in overall content consumption and content provision in the star's focal live-streaming category. Moreover, at the individual streamer level, the star's exit causes a reduction in incumbent non-star creators' content creation effort. Our results also reveal that both negative effects can be rather persistent. Lastly, we discuss the implications of our findings for several stakeholders.

Saturday, 10:30AM

SB08

Merrick 2 - Lobby Level
Entertainment:General II
Contributed Sessions

Session Chair
Franco Berbeglia, Purdue University, Lafayette, IN

Saturday, 10:30AM

SB08

Merrick 2 - Lobby Level
Entertainment:General II
Contributed Sessions

1 The Impact of Music Synchronisations on Music Popularity

Nazli Meryem Alagöz[1], George Knox[2], Hannes Datta[2], [1]Tilburg University, Tilburg, Netherlands; [2]Tilburg University, Tilburg, Netherlands.

In entertainment industries such as music, digitization reduced production costs. As a result, the number of new products entering the music market increased significantly. Due to the sheer volume of products in the music market, consumers are not aware of many products that are offered. Thus, music promotions such as music synchronizations can play a big role in consumers' discovery of music. Music synchronization (sync) is the use of a piece of music in a movie, commercial, or TV show. Recently, the market for music syncs has been growing. However, it is not known whether music syncs have an impact on music popularity and what factors must be considered to achieve a sync that positively impacts featured songs' and artists' popularity. In this study, we investigate the heterogeneous effects of music syncs in TV series on the popularity of featured songs and artists to understand what factors play a role in making a music sync an effective tool for increasing popularity and discovery. Additionally, we investigate the information spillovers by exploring whether songs and artists that are similar to the synced songs and artists benefit from these syncs. We use a quasi-experimental set-up to identify the effects of music syncs on music popularity. Our study has important implications for managers in the music industry and contributes to different literature streams in marketing such as music discovery, product placements, information spillovers, and optimal sampling of experiential goods.

Saturday, 10:30AM

SB08

Merrick 2 - Lobby Level
Entertainment:General II
Contributed Sessions

2 Movies in the Global Market: An Empirical Study of Non-Tariff Trade Barriers

Hongye Sun, Tianyu Gu, University of Utah, Salt Lake City, UT, Contact: tianyu.gu@eccles.utah.edu

Releasing movies in foreign markets is challenging and it is important for marketer to understand the consequence of potential barriers on their box office performance. In this paper, we investigate two major forms of non-tariff trade barriers (NTBs): policy NTBs and cultural NTBs. By comparing Hong Kong to mainland China, we find that the delay in release date does not impact the box office of movies in markets with no import restriction, but significantly reduce the movie performance in markets with import restriction (e.g., annual quota). Such difference reflects the mechanism behind policy NTBs in the movie industry: longer delay in release date suggests higher financial, relational, and opportunistic costs of going through the censorship, and higher cost limits the marketing flexibility of publishers and thus harms the box office performance. We then investigate the impact of cultural NTBs by calculating the sentimental distance between reviews in English and Chinese movie databases for the same movie. We find that longer distance between the same group of reviews for the same movies is negatively correlated with the global box office of the movies. In other words, movies with better global performance are interpreted in similar ways in communities with different languages, and vice versa. We further provide practical advice to movie marketers based on our findings.

Saturday, 10:30AM

SB08

Merrick 2 - Lobby Level
Entertainment:General II
Contributed Sessions

3 Pirating Foes or Creative Friends? Effects of User-Generated Condensed Clips on Demand for Streaming Services

Guangxin Yang, Yingjie Zhang, Hongju Liu, Peking University, Beijing, China. Contact: ygx@stu.pku.edu.cn

Short-form video-sharing platforms have seen phenomenal growth in recent years. One particular type of video that can often go viral on such platforms is condensed clips derived from existing full-length videos. This new form of user-generated derivative content has been strongly criticized by the traditional entertainment industry because it may infringe copyright owners' exclusive rights and steal viewers from original works. Little is known, however, regarding the true relationship between the two. Our identification strategy leveraged an exogenous boycott event in April 2021 that forced Chinese TikTok to remove condensed clips more proactively. By estimating short-form condensed clips' causal effect on the viewership of original TV series on a leading streaming platform, we determined that their removal had reduced the demand for corresponding full-length original works by approximately 3%, which implies that condensed clips serve as friends, rather than foes, of streaming services. Further analyses suggested that the positive spillover effects came from the fact that condensed clips could enhance the visibility of original works. Moreover, original TV series could expect stronger spillover effects if they are inherently more attractive (e.g., of higher quality or having a more fascinating storyline). Our results highlight the advertising effects of derivative works and directly respond to both policy and legal debates in the film/TV industry, suggesting that providing creators with original contents in exchange for condensed clips can be a beneficial supplement to direct marketing in the era of short attention spans.

Saturday, 10:30AM

SB08

Merrick 2 - Lobby Level
Entertainment:General II
Contributed Sessions

4 The Streaming Disruption of Movie Distribution

Franco Berbeglia[1], Timothy Derdenger[2], Sridhar R. Tayur[2], [1]Purdue University, Lafayette, IN, [2]Carnegie Mellon University, Pittsburgh, PA

In this paper we study the impact of release timing strategies in the motion pictures industry. We estimate a dynamic discrete choice model using weekly sales data on box office tickets, DVDs and Blu-rays, video on demand (VOD), and disc rentals, as well as subscription video on demand (SVOD) availability, across 696 movies released between 2014 and 2021. Using the estimated model, we conduct a series of counterfactuals that include the revenue impact of the removal/addition of SVOD windows, and the delay of the SVOD availability. Overall, this methodology allows for the computation of the value of studio-streaming contracts which can be used to find optimal release timing strategies of SVOD.

Saturday, 10:30AM

SB10

Oxford - Level 2
Pricing: Signaling, Blockchain, and Eye Tracking
Contributed Sessions

Session Chair
Gilles Laurent, ESSEC Business School, Sceaux, France.

Saturday, 10:30AM

SB10

Oxford - Level 2
Pricing: Signaling, Blockchain, and Eye Tracking
Contributed Sessions

1 The Role of Royalty Fee on Nft Platforms

Zijun (June) Shi[1], Wenxiao Yang[2], Song Lin[3], [1]HKUST, Clear Water Bay, Hong Kong; [2]UIUC, Urbana, IL, [3]Hong Kong University of Science and Technology, Hong Kong, Hong Kong. Contact: juneshi@ust.hk

One revolutionary feature of the NFT (non-fungible token) art markets (e.g., OpenSea, SuperRare, X2Y2), in contrast to the traditional art market, is that an NFT creator can collect royalty fee from subsequent resales of his/her artwork. While some NFT platforms allow the creators to change the royalty fee over time, others do not. Some platforms also impose a cap on the royalty fee. In this study, we investigate the role of royalty fee on these NFT trading platforms. We analyze the optimal contract design - when it is optimal for an NFT platform to restrict royalty fee, and how it affects the quality and trading of NFTs. Our analysis sheds light on how crypto technologies can affect traditional marketplaces.

Saturday, 10:30AM

SB10

Oxford - Level 2

Pricing: Signaling, Blockchain, and Eye Tracking

Contributed Sessions

2 Dynamics of User Activities and Cryptocurrency Price on a Blockchain-Based Online Social Media Platform

Wei Duan[1], Mantian Hu[1], Yuxin Chen[2], [1]Chinese University of Hong Kong, Shatin, Hong Kong; [2]New York University - Shanghai, Shanghai, China. Contact: duanwei@link.cuhk.edu.hk

Blockchain-based online social media platforms provide researchers with an opportunity to evaluate the monetary value of individual activities in a social media platform. In such social media platforms, users are rewarded with cryptocurrency for creating content and voting on others' content. And the cryptocurrency is traded on exchanges. In this study, we evaluate the endogenous changes in the price of the rewarded cryptocurrency and individual activities in a social media platform. We collect data from one of the most popular blockchain-based social media platforms. The data includes 121,366 users' daily activities and the crypto rewards they received on the platform from March 2020 to September 2022. User activities consist of posting, commenting, voting, and following behaviors. We use a vector autoregressive (VAR) model and find that the cryptocurrency price has a positive effect on the number of active users and user activities in the short term and does not have a long-term impact. Different types of user activities have different effects on the cryptocurrency price and other activities. To the best of our knowledge, this is the first paper in marketing to study blockchain-based social media platforms. Our research will shed light on this emerging ecosystem.

Saturday, 10:30AM

SB10

Oxford - Level 2

Pricing: Signaling, Blockchain, and Eye Tracking

Contributed Sessions

3 How Consumers Read Long Prices: An Eye-Tracking Analysis

Gilles Laurent[1], Madhav Arora[1], Marc Vanhuele[2], [1]ESSEC Business School, Cergy-Pontoise, France; [2]HEC Paris, Jouy-en-Josas, France. Contact: gilles.laurent@essec.edu

Do consumers read in full posted prices before making a purchase decision, or when comparing prices? Or do they restrict their attention to the most important part (from an economic perspective)? When do they read prices accurately and inaccurately? We first examine posted prices comprising both a two-digit integer part ($ or €) and a cents part, i.e. between $10.00 and S99.99. Based on eye-tracking evidence an in store surveys, we show that, surprisingly, consumers devote as much attention to the cents part as to the integer part. Contrary to a common assumption, prices are not read digit by digit from left to right. We propose that consumers pay that much attention to cents because of the need to encode and memorize the price in verbal form. If the verbal form of the cents part is too complex (too long), it becomes difficult to memorize and consumers replace the actual price by an inaccurate form that is shorter and easier to memorize. The distribution of eye fixations shows that reading is done by "chunks:" one chunk for the integer (euro). part and one chunk for the cents. We then examine whether such results extend to the case of six-digit prices, such as for real estate, e.g. $345,700. Concretely, do consumers read such prices in "chunks" of two digits (as in the previous case) or in "chunks" of three digits, corresponding to the two parts of the displayed price? Do consumers pay as much attention to these two parts? Are "precise" prices (those with a rightmost part different from 000) read differently and more difficult to handle? Are they processed differently? Is there an impact of ending such long prices in a "psychological" manner, e.g. by 999? Is there a difference, depending on whether two long prices to be compared are posted one above the other, or next to each other (one on the left, one on the right)? Based on our results, we analyze the impact of "chunking" on consumers" perception of price differences.

Saturday, 10:30AM

SB11

Cambridge - Level 2
Memorial Session for Andy Zoltner
Special Session

Session Chair
Murali K. Mantrala, University of Kansas, Lawrence, Lawrence, KS

Saturday, 10:30AM

SB11

Cambridge - Level 2
Memorial Session for Andy Zoltner
Special Session

1 Memorial Session for Andy Zoltners

Murali K. Mantrala, University of Kansas, Lawrence, Lawrence, KS
Information to come

Saturday, 10:30AM

SB12

Trinity - Level 2
Innovation: New Product Adoption
Contributed Sessions

Session Chair
Zheng Gong, Wuhan University, Wuhan, China.

Saturday, 10:30AM

SB12

Trinity - Level 2
Innovation: New Product Adoption
Contributed Sessions

1 Wechat Influence on Technology Adoption: The Mediating Role of Customer Based Brand Equity & Utaut Model

Wenjin Huo, University of Greenwich, London, United Kingdom. Contact: w.huo@greenwich.ac.uk
This research investigates whether social media marketing (SMM) activities is helpful in terms of increasing the purchase intention of technology products and services. For this purpose, this research explores this relationship by examining the customers' purchase behaviour of 5G mobile service bundles in the Chinese market. We applied The Unified Theory of Acceptance and Use of Technology (UTAUT) and Customer-Based Brand Equity (CBBE) concepts as driving forces for the purchase intention of the 5G mobile service bundle to test whether SMM activities improve the overall customer behaviour outcome. Moreover, the function of the driving force as the mediator between SMM activities and purchase intention is tested as well. The 5G mobile service is the latest mobile technology which will enhance the capability of mobile networks profoundly and help build a "networked society". Since the success of the technology depends on the level of consumers' acceptance which makes it is essential to understand the consumers' response to technology innovation. Massive research related to consumer adoption of 3G, 4G mobile services, and 5G has never been tested before. Social media changes the way consumers find information, and evaluate products before and after purchase. In this study, we choose WeChat users who are also 4G and 5G service users in mainland of China as our research subjects. For the result, we analyse questionnaires from 856 participants. The obtained result confirms that SMM activities help the company stimuli UTAUT, CBBE and purchase intention. The mediator function in this relationship has been verified as well. Keywords: social media marketing, 5G, customer-based brand equity, technology adoption presenting author: Wenjin Huo

Saturday, 10:30AM

SB12

Trinity - Level 2
Innovation: New Product Adoption
Contributed Sessions

2 The Role of Uncertainty on the Adoption of Innovations: Evidence from the Helium Network

Octavian Ciupitu[1], Hernan Bruno[2], [1]University of Cologne, Köln, Germany; [2]University of Cologne, Köln, Germany. Contact: octavian.ciupitu@wiso.uni-koeln.de
One of the main factors affecting the adoption of new products is user uncertainty. Users must experience the product to learn about the resulting "match value" of a

new innovation for their specific situation. User uncertainty before adoption is difficult to observe and therefore hard to quantify and characterize. In most cases, the uncertainty about the benefits of the innovation is user-specific and highly dependent on the situation. In this paper, we study the uncertainty about product adoption in a setting where the benefits of the innovation are visible and can be linked directly to a monetary reward. The Helium Network is a decentralized, blockchain-based project with the goal of providing low-power wireless infrastructure with widespread network coverage for connected devices such as rental vehicles (e.g., e-scooters) or other Internet-of-Things sensors using hotspots deployed across cities. Helium hotspots are purchased, owned and operated by individuals who receive Helium tokens ($HNT) in exchange for providing this connection - these tokens can then be traded for traditional currencies on cryptocurrency exchanges. We observe the location and time of adoption for each hotspot in the network. We model the adoption process as a function of the location, the network effects and the variables capturing the economic incentive. In particular, we are interested in the dependence of the adoption probability on the uncertainty associated to the value of the token (e.g., as measured using a GARCH model). Using a zero-inflated Poisson model, we show that benefit uncertainty in a given region plays an important role in the speed of adoption. We discuss this relationship in terms of other contextual variables. This is the first study to address the precise quantification of uncertainty in adoption decision-making.

Saturday, 10:30AM

SB12

Trinity - Level 2
Innovation: New Product Adoption
Contributed Sessions

3 The Predictive Utility of Language Complexity on New Product Adoption

Fue Zeng[1], Yunjia Chi[2], Zheng Gong[3], [1]Wuhan University in China, Wuhan, China; [2]College of Economics and Management of Huazhong Agricultural University, Wuhan, China; [3]Economics and Management School of Wuhan University, Wuhan, China. Contact: yihuagongsx@163.com

The language used in product descriptions varies in complexity. However, the effect of language complexity on product adoption, especially new product adoption, is unclear. We focus on new products because consumers usually pay more attention to their descriptions. Therefore, the language complexity of a new product is more likely to influence consumers' decision-making. Research on processing fluency suggests that people perceive simple and common language as more positive than complex and technical language. In this sense, consumers may prefer new products with descriptions using simple (vs. complex) language. But this study proposes and demonstrates that the effect may be reversed depending on new product types. Across four studies, including one field experiment, we show that while a simple language facilitates hedonic new product adoption, a complex language better promotes utilitarian new product adoption. Moreover, the current research shows that the interaction effect of the new product types and language complexity on purchase intention is mediated by consumers' attention salience. This study extends the research on language complexity to the context of new product adoptions and further reveal the psychological mechanism behind the behavior. This research provides important implications for managers to use complex (vs. simple) descriptions of utilitarian (vs. hedonic) products.

Saturday, 10:30AM

SB13

Escorial - Level 2
Marketing Strategy: Segmentation
Contributed Sessions

Session Chair
Nino Hardt, SKIM, Berlin, Germany.

Saturday, 10:30AM

SB13

Escorial - Level 2
Marketing Strategy: Segmentation
Contributed Sessions

1 Uncovering Consumer Heterogeneity in Big Data: A Hybrid Marketing Science-Deep Learning Approach

Seung-Wook Kim[1], Gary J. Russell[2], [1]University of Iowa, Iowa City, IA, [2]University of Iowa, Iowa City, IA

In the age of Big Data, large retailers collect massive amounts of information about consumer behavior. However, efficiently analyzing these massive datasets to illuminate market segmentation is challenging in practice. Most of the traditional choice models developed to capture unobserved consumer heterogeneity incur extremely large computational times that make model calibration difficult in a Big Data context. A more promising approach is to utilize machine learning methods, but the problem is that machine learning models are not based on marketing science theory and often produce results that are not interpretable by managers. Given these challenges, this paper describes an approach to the calibration of a choice model with unobserved consumer heterogeneity in a Big Data context. Our proposed Autoencoder-Latent Class Model (ALCM) commences with utilizing autoencoder to create parsimonious latent representations of a large volume of consumers based on their different shopping patterns. We then use the latent representation with stratified sampling to produce a high-quality sample of the original data. The choice model is then fit to this high-quality sample. We apply the ACLM procedure to an analysis of market segmentation in the carbonated soft drink industry using a large dataset from the states of California and Texas. Compared to the traditional model using raw data, our proposed model uncovers the structure of market segmentation and predicts consumer segmentation with 86% accuracy and a 95% decrease in computational time. We argue that the modeling approach offers new opportunities for large retailers and researchers who have encountered challenges in fitting conventional marketing science models in a Big Data context.

Saturday, 10:30AM

SB13

Escorial - Level 2
Marketing Strategy: Segmentation
Contributed Sessions

2 Competitive Market Structure Analysis Employing a New Model Based Approach for Simultaneous Segmentation and Positioning

Qi Zhao, Duncan K.H. Fong, Wayne S. DeSarbo, Penn State University, State College, PA

The Segmentation-Targeting-Positioning analysis provides competitive advantages for managers in creating customized positioning strategies for targeting specific segments. The authors propose a new model-based approach for Segmentation-Targeting-Positioning analysis. Specifically, one component of the proposed model extends the current Bayesian vector multidimensional scaling approaches by introducing overlapping segmentation via a new type of mixture distribution that allows a single consumer to belong to multiple segments simultaneously. Another component involves a novel Bayesian factor model that permits a direct interpretation of the derived configuration even when the number of attributes is excessive. The components are interrelated and the authors adopt innovative Bayesian techniques to determine concurrently the joint space dimensionality and the number of market segments directly from the analysis. A synthetic data illustration demonstrates that their model performs better in recovering true parameters and making predictions than traditional benchmark models. In an empirical application regarding purchase intentions towards sport utility vehicles, the proposed approach provides an intuitive interpretation of the derived configuration while uncovering heterogeneity in consumer preferences. Compared with the benchmark models, the proposed approach offers more consistent estimates of joint space dimensionality and number of market segments, provides more accurate consumer preference prediction, and suggests more effective positioning and repositioning strategies.

Saturday, 10:30AM

SB13

Escorial - Level 2
Marketing Strategy: Segmentation
Contributed Sessions

3 Knowing Consumers' Preferences is Not Enough. Comparing Profitability from Segmentation to Personalization in Tourism: A Simulation Study

Michele Gorgoglione[1], Sahana Sen[2], A. Claudio Garavelli[1], [1]Politecnico di Bari, Bari, Italy; [2]BMCC, City University of New York, New York, NY, Contact: michele.gorgoglione@poliba.it

Internet-based technology allows companies to know consumers preferences with greater accuracy these days. However, choosing the right target remains an issue. Personalization has become very popular in the digital age but addressing the needs of every single consumer may be costly. On the other hand, using a broader market segment can be a more affordable strategy but the needs of many consumers will remain unaddressed. Although scholars know well that setting the right target raises a cost-benefit trade-off, we found that little research has been done on this topic. We did a simulation analysis in the tourism industry using a case study of a company that markets several tourism services and shared the data on their cost structure with us. We simulated the preferences of a set of consumers and built two types of utility functions to estimate their purchases. We calculated costs and sales when the company serves four different targets: the aggregated market, few large segments, many micro-segments, or deploys a personalization approach. We compared the profitability of these four segmentation strategies in different conditions. We varied the consumers' attitudes, the price of services, and the possibility of leveraging economies of scale. Our findings show that the best strategy depends on consumers' attitudes. When consumers buy only what is most aligned with their strongest preferences, personalization is the most profitable strategy. If we relax this constraint, then micro-segmentation yields the maximum returns. The more price decreases, the more micro-segmentation increases its profitability. Finally, when the possibility of leveraging economies of scale decreases, personalization loses most of its profitability.

Saturday, 10:30AM

SB13

Escorial - Level 2
Marketing Strategy: Segmentation
Contributed Sessions

4 Market Segmentation Using Semantic Embeddings

Nino Hardt[1], Qiurui Chen[2], [1]SKIM, Berlin, Germany; [2]SKIM, Rotterdam, Netherlands. Contact: n.hardt@skimgroup.com

Market segmentation is the process of dividing a target market into subgroups of customers that share characteristics that are relevant for the use of marketing instruments. The standard approach to segmentation has been largely unchanged for over two decades. It comprises collecting survey responses to a set of questions, typically in fixed-point rating scale form, applying dimension reduction and some form of cluster analysis. We develop a novel approach and show that large language models are effective in improving segmentation by producing more intuitive cluster results. We apply sentence embeddings from GPT-3 to segmentation items which helps control for the conceptual overlap between items and works well with density-based cluster algorithms. Using data from several segmentation studies, we show that our novel approach based on semantic embeddings is applicable to existing studies, easy to use and results in cluster solutions that are more intuitive.

Saturday, 10:30AM

SB14

Alhambra - Level 2
Marketing and Society: Sustainability
Contributed Sessions

Session Chair
Qiaowei Shen, Peking University, Beijing, China.

Saturday, 10:30AM

SB14

Alhambra - Level 2
Marketing and Society: Sustainability
Contributed Sessions

1 From Transcripts to Trajectories a Data-Driven Framework for Studying Academic Pathways

Jai Malik, Elizabeth Bruch, Fred M. Feinberg, University of Michigan, Ann Arbor, MI, Contact: jaimalik@umich.edu

Undergraduate students in US universities choose courses every semester before graduating with a specific major. Because these choices impact graduation time, specialization, course-load, and have economic implications for both universities and students, understanding them benefits both parties. Digitized transcript data offer great potential to understand student pathways, but are difficult to model: the course-taking space is enormous (thousands of courses at a typical university), while the number taken by a student is comparatively small (< 40). Although raw transcript data can inform course-taking sequences indicative of particular academic trajectories, modeling approaches to reveal and assess them - and how they vary across socioeconomic and other groupings - are presently lacking. To address these challenges, we present a conceptually appealing, data-driven framework for translating transcript data into information on student pathways. Our framework delivers information about student movements through the space of possible majors and allows for temporal dynamics, heterogeneity, and the possibility of different experiences for students from different demographic backgrounds. The fully nonparametric, three-level hierarchical model leverages the richness of these data, with each level tuned to different information about trajectories, demographics, major types, and their interrelations. Specifically, it extracts the diverse pathways students take within- and across-majors, providing novel insights into differential experiences across gender, ethnicity, and economic background in STEM versus non-STEM fields. Moreover, the framework can be applied "out of the box" in other settings with repeated observations of individual behavior in a structured, goal-oriented environment.

Saturday, 10:30AM

SB14

Alhambra - Level 2
Marketing and Society: Sustainability
Contributed Sessions

2 Beyond the Plastics: The Effects of Plastic Bag Bans on Consumer Shopping Behaviors

Man Xie[1], Sungsik Park[2], Jinhong Xie[3], [1]Arizona State University, Phoenix, AZ, [2]University of South Carolina, Columbia, SC, [3]University of Florida, Gainesville, FL, Contact: man.xie@asu.edu

In the past decade, the number of public policies intended to phase out plastic bags has almost tripled worldwide. While research has studied the direct impacts of plastic bag policies on plastic bag consumption, little is known about its effects beyond that. Using a natural experiment, we investigate the indirect effects of the plastic bag ban on consumers' daily shopping behaviors. Our empirical analyses show that consumers significantly reduce their total in-store shopping spending due to the policy change, while the effect cannot be solely explained by channel substitution, e.g., purchasing more from the online channel. We also show a significant reduction in consumers' shopping frequency because of the plastic bag policy change. Our findings suggest that introducing the plastic bag ban can effectively change consumers' daily shopping behaviors in dimensions that are not directly regulated by the policy. By showing the likely favorable environmental impacts of the plastic bag ban through changing unregulated consumer behaviors, our research provides implications on policy evaluation, consumer education, and marketing strategies under the policy change.

Saturday, 10:30AM

SB14

Alhambra - Level 2
Marketing and Society: Sustainability
Contributed Sessions

3 School Shootings and Community Nutrition

Muzeeb Shaik[1], Siri Paruchuri[2], Mike Palazzolo[3], Adithya Pattabhiramaiah[4], Shrihari (Hari) Sridhar[5], [1]Indiana University, Bloomington, IN, [2]College Station Hgh school, college Station, TX, [3]UC- dAvis, Davis, CA, [4]Georgia Tech, Atlanta, GA, [5]Texa A&M University, College Station, TX, Contact: shaikmu@iu.edu

In recent years, school shootings are occurring more frequently, occupying public discourse and media coverage. In 2022 alone, 51 school shootings occurred that resulted in injuries or deaths. Researchers have studied the long-term and short-term effects of school shootings on individuals and communities, but little is known about the impact of these traumatic events on the consumption behaviors of affected communities. To address this gap in knowledge, we combined data on school shootings with retail data on household purchases and nutritional labels to examine the effect of school shootings on the healthfulness of household food purchases in affected communities. Specifically, we compared the Healthy Eating Index (HEI), a measure of the healthfulness of household food purchases, in zip codes where a school shooting occurred (treatment area) to the HEI in other zip codes within a five-mile radius of the shooting (reference areas), both before and after the shooting. Our results indicate that local exposure to school shootings correlates with the healthfulness of household food purchases in the following four weeks. We also explored how these effects differ based on whether the shooting resulted in fatalities, whether the household has school-aged children, and the race of the household.

Saturday, 10:30AM

SB14

Alhambra - Level 2
Marketing and Society: Sustainability
Contributed Sessions

4 Optimizing Policy Design—Evidence from a Large-Scale Staged Fiscal Stimulus Program in the Field

Qiao Liu[1], Qiaowei Shen[2], Tenghui Wang[3], Zhenghua Li[4], Shu Chen[4], [1]Guanghua School of Management, Peking University, Beijing, China; [2]Guanghua School of Management, Peking University, Beijing, China; [3]Guanghua School of Management, Peking University, Beijing, China; [4]Research Institute, Ant Financial, Beijing, China. Contact: qshen@gsm.pku.edu.cn

Using iterative experiments to uncover causal links between critical policy details and outcomes helps to optimize policy design. This paper studies a large-scale staged fiscal stimulus program conducted during the COVID-19 pandemic, in which a provincial government in China disbursed digital coupons to 8.4 million individual accounts in consecutive waves and updated the program design each time. We find that ruling out unproductive program features leads to a pattern of increasing treatment effects over the waves and that program design matters more than the size of the fiscal stimulus in boosting spending. Our results show that (i) general coupons with no constraints on where the vouchers can be redeemed are more effective than specialized coupons in stimulating consumption in the targeted sectors; (ii) coupon packets with fewer denominations and shorter redemption windows tend to be more effective; and (iii) low-income residents and non-local residents are equally or even more responsive to the coupon program than other groups. Our results illustrate that generating variations in iterative policy experiments, combined with a timely assessment of individuals' responses to marginal incentives, optimizes program design.

Saturday, 10:30AM

SB15

Michaelangelo - Level 2

Healthcare: General II

Contributed Sessions

Session Chair

Richard Staelin, Duke University, Durham, NC

Saturday, 10:30AM

SB15

Michaelangelo - Level 2

Healthcare: General II

Contributed Sessions

1 Promoting Healthy Diet at a Large Chain Restaurant

Weijia (Daisy) Dai[1], Ginger Jin[2], Ben Zou[1], [1]Purdue University, West Lafayette, IN, [2]University of Maryland, College Park, MD

In the US, many public health and social problems, such as obesity, are linked to unhealthy diets. The public health literature focuses on the social determinants of health that contribute to health disparities and inequities, and studies have found that obesity and nutrition intake demonstrates similar gradient in income and education. In this paper, we examine the nutritional inequality generated from consumer choices of entrees in a restaurant setting where consumers need to trade off food item characteristics against its price. Using proprietary point-of-sales data from a large national restaurant chain whose locations cover neighborhoods varying considerably in SES, we show that consumers in more disadvantaged neighborhoods consume less healthy and higher-calorie entrees and are more sensitive to price promotions. We estimate a random coefficient discrete choice model, taking advantage of frequent national price discounts on a variety of items varying in calorie content and healthfulness as exogenous shocks to prices. We find that consumer price sensitivity differs by demographics as well as by the calorie content and the healthfulness of the item. In particular, the average price elasticities of demand for consumers in the bottom decile of neighborhoods in terms of education and income is about 50% higher than consumers in the top decile neighborhood. Our findings highlight the socio-economic gradient in price sensitivity, especially when it comes to the choice of healthy food in chain restaurants. We conduct counterfactual exercises to examine the sets of price policies that could alleviate or remove the consumption inequality in the healthfulness of food choices. We find that reducing prices for the most healthy items is much more effective than removing differences in prices and offerings across neighborhoods in reducing nutritional inequality among neighborhoods.

Saturday, 10:30AM

SB15

Michaelangelo - Level 2

Healthcare: General II

Contributed Sessions

2 Effect of Wealth Shocks on Individuals' Health-Related Behavior: Evidence from the Great Recession

Bhavna Phogaat, Ramkumar Janakiraman, University of South Carolina, Columbia, SC, Contact: bhavna.phogaat@grad.moore.sc.edu

Do wealth shocks affect the health-related behavior of individuals? Although prior research has attempted to answer this question, much focus has been on the psychological distress experienced by individuals based on self-reported data. Leveraging the onset of the Great Recession 2008 economic crisis as a natural experiment and a novel dataset on individuals' actual fitness center visits, we examine the causal effect of wealth shocks on the health-related behaviors of individuals. We estimate the wealth effects using within variation of wealth at the zip code level and account for endogeneity using instrumental variables approach. Our results show that perceived wealth shock has a negative effect on health behaviors. We find that the effect is more pronounced for pre-retirement adults and for those living in zip codes that experienced an increase in unemployment level. Our findings are relevant to both public health experts in managing public health campaigns during bad economic times.

Saturday, 10:30AM

SB15

Michaelangelo - Level 2

Healthcare: General II

Contributed Sessions

3 Hospitals' Clinical Performance and Online Text Reviews

Nah Lee[1], Rick Staelin[2], [1]SKK GSB, Seoul, Korea, Republic of; [2]Duke University, Durham, NC, Contact: nah.lee@skku.edu

Despite the recent increase in the availability of online hospital reviews and emerging evidence of their influence on patients' choice of providers, little is known about how the content of these reviews affects healthcare providers' subsequent delivery of care. To address this research question, we analyze Google hospital reviews for about 3k U.S. hospitals from 2012 to 2019 and investigate how the clinical quality of care for this large set of hospitals have changed after the online reviews are posted. Specifically, we classify the review content along the type of topics discussed (clinical topic vs. non-clinical, i.e., experiential, topic), and create a longitudinal dataset from the review content along with two other hospital-level databases to estimate the marginal effect of patient review content on subsequent clinical performance. This allows us to take first differences, thereby controlling for numerous (unobserved) fixed effects such as managerial expertise, location, size, etc. We find the valence of clinical information found in the patient reviews interacted with the financial health of the hospital to be strongly associated with subsequent clinical performance. Additionally, the inconsistency of the messages in the negative reviews about clinical topics also interacts with the financial health of the hospital. We offer insights on the moderating role of capital in the association between review content and subsequent clinical quality of the hospital. Our exploratory empirical analysis sheds light on how the information from the reviews can be useful for the hospital administrators in predicting the subsequent clinical performance, and possibly understanding organizational reactions to online feedback.

Saturday, 10:30AM

SB16

Raphael - Level 2

Location-Based Marketing: Spatial Proximity and Geo-fencing

Contributed Sessions

Session Chair

Meng Ji, 1</sup

Saturday, 10:30AM

SB16

Raphael - Level 2

Location-Based Marketing: Spatial Proximity and Geo-fencing

Contributed Sessions

1 The "Driving" Force Behind Geo-Fencing: The Impact of Consumer Mobility and Store Flux on Store Visits and In-Store Coupon Redemptions

Sanjana Surange, Venkatesh Shankar, Texas A&M University, College Station, TX, Contact: ssurange@mays.tamu.edu

Advertisers constantly seek a better understanding of how consumers' geo-location and activities in the spatio-temporal dimension impact consumers' likelihood to visit a physical store, respond to a coupon promotion, and make a purchase. Prior research has studied real-time human mobility in the contexts of telecom network expansion, traffic management, urban planning, and healthcare. However, research on consumer driving trajectories and their impact on the probability of a store visit and coupon redemption is sparse. We analyze the impact of consumer mobility and store flux (density of consumer driving trajectories in a store vicinity) on store visit and in-store coupon redemption. Using a unique dataset comprising over 32,699 users of a popular mobile app for safe driving, we address important research questions: How does real-time consumer mobility and store flux impact store visit and coupon redemption? How can consumer mobility be used to segment consumers? Can consumer mobility and store flux predict store visits and coupon redemptions better than consumer demographics and past consumer behavior? We propose a framework to define consumer mobility and store flux and use unsupervised learning to identify consumer segments based on their mobility profiles. We then use sequential deep learning/long short-term memory (LSTM) models to analyze consumer driving trajectories and store flux to predict consumer visits to a store and coupon redemption. Our results show that consumers can be segmented on their mobility into three different consumer lifestyles, focused shoppers, window shoppers, and occasional shoppers, who exhibit different store visit and coupon redemption patterns. Our results also show that consumer driving trajectories and store flux better predict store visit and in-store coupon redemption than demographics or consumer response to geo-fenced ads.

Saturday, 10:30AM

SB16

Raphael - Level 2

Location-Based Marketing: Spatial Proximity and Geo-fencing

Contributed Sessions

2 Consumer Impatience, Technological Innovation, and Market Structure

Chaewon Seol[1], Federico Rossi[1], Sara Valentini[2], Elisa Montaguti[3], [1]Purdue University, West Lafayette, IN, [2]Bocconi University, Milano, Italy; [3]University of Bologna, Bologna Italy, Italy.

As online shopping grows, consumer impatience, i.e. individuals' desire to receive the products they purchased as quick as possible becomes a key factor in purchase decisions. In this research, we show that consumer impatience significantly affects market structure. Using online purchase data from food delivery, we demonstrate that consumers prefer to purchase delivery food mainly from nearby sellers. Preference for local suppliers is particularly noticeable when consumers change addresses and stop purchasing at their supplier previously chosen. We estimate a demand model, where consumers choose suppliers based on quality, price and delivery time, and find that 10% decrease in delivery time is worth about �3.248% decrease in the average order's price. Counterfactual analysis reveals that a new technology improving delivery time would dramatically change market structure: a few high-quality suppliers would capture most of the market share, running other suppliers out of business. We also explain how consumer impatience provides opportunities for the platform collecting orders to increase profits.

Saturday, 10:30AM

SB16

Raphael - Level 2

Location-Based Marketing: Spatial Proximity and Geo-fencing

Contributed Sessions

3 Spatial Proximity, Consumer Online Purchase and Platform Marketing Strategies

Meng Ji[1], Jingcun Cao[2], Shyam Gopinath[1], Shibo Li[1], [1]Indiana University Bloomington, Bloomington, IN, [2]The University of Hong Kong, Hong Kong, Hong Kong. Contact: jimen@iu.edu

Spatial proximity defined as the geographic closeness of consumers plays a significant role in their purchase behaviors. However, existing literature mainly focuses on its effect on new product adoption while largely ignoring other behaviors such as purchase quantity and inter-purchase timing. Further, the impact of consumer spatial proximity on supply-side marketing strategies, and its dynamics and heterogeneous impact remain understudied. Based on social identity theory, we examine these gaps using a unique dataset from a leading e-commerce platform in Hong Kong. Our study shows that consumer-to-consumer (C-C) spatial proximity has a significant impact on consumer online purchases (when and how much to buy) and the platform's marketing strategies (price and promotion), and such effects are increasing over time. Further, significant heterogeneity exists across consumers and product categories with different levels of social identity. We show that the platform can increase its revenue by more than $200,000 annually by using C-C proximity-based price and promotion strategies for one category (personal care and health) alone. This study provides novel findings on the impact of spatial proximity on both demand and supply sides and its dynamics and heterogeneity, and offers important theoretical and managerial implications for marketing researchers and managers.

Keywords: spatial proximity, social identity theory, consumer purchase, online platform

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Channels: Multi-Channel II

Contributed Sessions

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Irene Nahm, 1</sup

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Contributed Sessions

1 Reaping the Bitter Harvest of Channel Integration

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With greater attention to omnichannel marketing, many firms have increased their focus on integrating multiple channels of distribution. While commentaries point to the benefits of integrating in terms of generating greater value-added products and services for consumers, others talk about the strategic value of integrated channels - mostly in terms of the lock-in effect, which is relevant for consumer search and switch behaviors, and the potential for leveraging complementarities in the firm's resources. Nevertheless, channel integrations can also come with considerable transactional (in)efficiencies and costs, which not only comprise greater monitoring and associated ex-post adaptations when arm's length transactions are internalized, but also include measurement and attribution costs that appear when diverse operational groups are combined under a new organizational mandate. While these ideas of the trade-off between the value generated from channel integration versus the transaction costs have been assessed in the literature in fragmented ways, we combine them in a single empirical study to examine the efficacy of a firm's channel integration and explore factors that moderate the "channel integration-financial outcomes" relationship. Using a unique manually created dataset of 82 national retailing chains in U.S., for the 2008-2019 period, our empirical study shows that, on average, a firm's channel integration negatively affects its financial outcomes. Whereas a firm's store network mutes the negative effect, its capital intensity (e.g., level of fixed assets) and industry turbulence enhance the positive impact. Addressing a gap in the extant literature, our results show how transactions costs chip away at the efficacy of channel integration.

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2 The Role of Metaverse in Reshaping the Retail Channel Structure and Strategy

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The metaverse has the potential to reshape the retail industry significantly and is estimated to reach an $800 billion market size in the next few years. Two examples of such impact are virtual goods and digital real estate. While specific services and solutions are still in production, many retailers are already purchasing spaces and setting up stores in this virtual world. Thus, it is crucial to develop a better understanding of the general impact of this technology on retailers and their channel structure and strategy. Current literature investigates metaverse retailing from different perspectives throughout the last two decades, including service quality and promotion strategy. However, these studies are limited in both scope and scale.

In this study, I focus on the advantages and disadvantages of metaverse retailing and its impact on the realignment of multichannel structure and the retailer's optimal strategy. More specifically, I develop a stylized analytical model where two retailers compete for consumers with heterogeneous channel preferences and purchase behavior. I contrast the optimal channel structure and pricing before and after the introduction of metaverse as a retail channel and compare numerous scenarios with different consumers' shopping behavior and channel preference. I find a significant reshaping in channel structure, market share, and pricing with the inclusion of the metaverse. Moreover, counterintuitively, this reshape can be asymmetric for symmetric retailers where one retailer invests in metaverse retailing while the other ignores the channel. My results contribute to this

re-emerging literature by investigating the fundamental role of the metaverse in multi-channel retailing and provide insight for managers on how to react optimally in this changing environment.

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3 How to Effectively Manage B2b Customers Across Digital and Sales Force Channels

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Business-to-business (B2B) companies increasingly disintermediate their sales process by transitioning part of their customer's business from the traditional outside sales force channel to the digital channel. Digital channels allow customers to make transactions at their convenience. A potential consequence is that salespeople can spend less time on simplistic transactions (e.g., straight rebuys) and more time on activities not affected by digitization, including consultative selling efforts (e.g., cross-selling). For managers, it is essential to understand which personal selling strategies complement a customer's adoption of a digital channel. The authors exploit a natural experiment conducted by a multibillion-dollar *Fortune* 500 company that introduced a digital channel to its customers alongside its established sales force channel to examine the causal effect of a customer's digital channel transition on the profitability of subsequent transactions. Using the causal forest method, the authors find that the effect of a customer's digital channel transition strongly depends on salespeople's use of cross-selling strategies (specifically, a greater focus on selling new key products and generic brands and a lesser focus on selling secondary products). Furthermore, the findings suggest that salespeople in different performance groups (laggards, core performers, stars) should employ varying selling strategies when interacting with digitally transitioned customers.

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Savannah Shi, Santa Clara University, Santa Clara, CA

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1 Investigating the Effect of Educational Metaverse Platform on Students' Reading Behaviors

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Despite a growing interest in metaverse platforms and their potential to change the way consumers interact with products and services, the extent to which they alter consumer behavior remains under-explored in marketing literature. To address this gap, this study aims to empirically examine the effect of educational metaverse platforms on students' book-reading behavior compared to traditional, non-interactive library service. Our hypothesis is that the metaverse platform can increase students' reading completion rates and deepen their engagement and comprehension of the book. This is aligned with the notion that immersive experiences and increased control in a virtual environment can fulfill consumers' needs for autonomy and competence, resulting in higher engagement. Given that the metaverse platform provides individuals with opportunities to interact with the world and engage with others, potentially influencing their self-concept, we examine whether the impact of the metaverse varies based on factors such as the congruence between the metaverse context and the book's content.

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2 Prominent Platform and Simultaneous Search

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Consumers deflect limited attention to the prominent platform when they collect product information. This research examines how asymmetric attention on platforms alters retailers' price competition. We develop a simultaneous model where consumers search differentiated products and decide the amount of collected information. Our results indicate that more attention can expand the demands of retailers on the prominent platform and intensify price competition among them. We find that (1) a lower search cost can increase or decrease retail prices on the prominent platform. (2) Prices on the prominent platform can be higher or lower than on the non-prominent platform. (3) The prominent platform may have a lower profit than the non-prominent platform.

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3 Crowdfunding Platform Design and Fair Funding Opportunities for Non-Profit Organizations

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The advent of crowdfunding has introduced a fresh option for non-profit organizations to acquire funding through the collective effort of a large number of people. Many public-school teachers resort to these crowdfunding platforms to fund their classroom projects. These charitable donation platforms enable public schools to get resources that they may not be able to afford otherwise, and allow donors to have a direct impact on education in their community. The design of crowdfunding platforms plays a critical role in prioritizing fair funding opportunities for public schools. The goal of this research is to examine the impact of default ranking design on the crowdfunding results of public schools. We collect data from Donorschoose.org, a U.S.-based nonprofit organization that allows individuals to donate directly to classroom projects initiated by teachers. This crowdfunding platform went through a design change during the observed period. Specifically, in the default ranking of the funding projects, a new ranking criterion, "project urgency" is added. The urgency measure is a combination of the poverty level (of the school district), the cost of the project (i.e., funding request), and the days remaining for the project closure. Our initial analyses revealed intriguing patterns in the donors' intention and project success rate when the platform introduced the new ranking criterion. In addition, the project initiators adapt their behavior based on the feedback received. The findings of this research shed light on the effective design of crowdfunding platforms so that they will benefit the communities in need.