

Yifei Wang

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Education

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|------------------------|---|
| 2018 - 2024 (expected) | Massachusetts Institute of Technology (Cambridge, MA, USA)
Sloan School of Management
Ph.D., Quantitative Marketing
Committee: Catherine Tucker (Chair), Duncan Simester, Birger Wernerfelt |
| 2018 - 2021 | Massachusetts Institute of Technology (Cambridge, MA, USA)
Sloan School of Management
M.S., Management Research |
| 2014 - 2018 | Shanghai Jiao Tong University (Shanghai, China)
Antai College of Economics and Management
B.B.A., Accountancy
Recipient of the Outstanding Graduate of Shanghai |

Research

Research Interests

Substantive: Privacy, Fairness, Platforms, Search, Marketing Analytics.

Methodology: Field Experiments, Causal Inference, Machine Learning.

Working Papers

Competition and Privacy
Job Market Paper

The Effect of Subsidizing Digital Educational Content: Evidence from a Field Experiment
with Jingcun Cao and Catherine Tucker. *R&R at Management Science*

Does IT Lead to More Equal Treatment? An Empirical Study of the Effect of Smartphone Use on Customer Complaint Resolution
with Catherine Tucker and Shuyi Yu. *R&R at Information Systems Research*

Search Correlations and Harbingers of Failure
with Duncan Simester. In preparation for submission to *Journal of Marketing Research*

Work in Progress

The Failures of Network Effects: Evidence from A Social Media Platform
with Catherine Tucker.

Privacy Spillovers: Fragmented Identities and Cross-Device Tracking
with Catherine Tucker.

Teaching

I am excited to teach a wide range of marketing courses at all levels, including but not limited to: Introduction to Marketing (core), Marketing Analytics, Market Research, Causal Inference/Experimentation in Marketing, Pricing, Platforms and Networks, Marketing for International and Emerging Markets.

Teaching Experiences

Teaching Assistant, MIT Sloan School of Management

Pricing (MBA), Fall 2021

(Evaluation 6.6/7, the highest TA rating of the course over the past 9 years of available MIT record)

Pricing (EMBA), Winter 2019

Graduate Mentor, MIT Sloan School of Management

Undergraduate Research Opportunities Program, Summer 2020 & Winter 2021

(Mentored a total of 24 undergraduate students on 'Data, IT and Healthcare Challenges in Reporting Accurate Data in the COVID-19 Pandemic')

Grants, Honors, and Awards

Massachusetts Institute of Technology

ISMS Doctoral Consortium Fellow, 2022, 2023

NBER Economics of Privacy Tutorial Fellow, 2022

MIT Sloan School of Management Fellowship, 2018-2023

Shanghai Jiao Tong University

The National Scholarship of China, 2015

(the most prestigious scholarship awarded to Chinese undergraduates)

SJTU Academic Excellence Scholarship, 2016, 2017

China Scholarship Council Outstanding Undergraduate Scholarship, 2016

Tsung-Dao Lee Chinese Undergraduate Research Scholarship, 2017
(ranked 1st in the selection process of SJTU)

Hongyi Research Scholarship, 2017
(selected as one of the 8 recipients out of all SJTU students for research potential)

Hainan Airlines Scholarship, 2017

Merit Student of SJTU, 2018

Outstanding Graduate of Shanghai, 2018

Skills and Interests

Tools: R, Python, STATA, SAS, XML, \LaTeX

Languages: Mandarin Chinese (native), English (fluent)

Interests: Stand-up comedy (viewer and performer), Classical singing (soprano), Musicals, Reading, Debate and public speaking

Ph.D. Coursework

Microeconomic Theory I	Parag Pathak
Microeconomic Theory II (Game Theory)	Glenn Ellison
Microeconomic Theory III (Decision Theory)	Drew Fudenberg
Microeconomic Theory IV (Mechanism Design)	Alexander Wolitzky
Industrial Organization I	Glenn Ellison, Nikhil Agarwal
Industrial Organization II	Nancy Rose, Michael Whinston
Developmental Economics: Micro Issues	Jishnu Das, Benjamin Olken
Statistical Method in Economics	Anna Mikusheva
Econometrics	Brigham Frandsen, Whitney Newey
Causal Inference	Daniel Hidalgo
Applied Econometrics	Josh Angrist
Nonlinear Econometric Analysis	Alberto Abadie, Whitney Newey
Bayesian Data Analytics (Harvard)	Jun Liu
Applied Machine Learning	Leslie Kaelbling
PhD Seminar on Consumer Behavior	Drazen Prelec, Dave Rand
Experimental Design and Analysis	Dean Eckles
PhD Seminar on Theoretical Modeling	Tony Ke
PhD Seminar on Data Products	Juanjuan Zhang
PhD Seminar on Measurement Issues	John Hauser
PhD Seminar on Causal Inference	Dean Eckles
PhD Seminar on Rationality	Rahul Bhui
PhD Seminar on Maker Space	Juanjuan Zhang

Abstracts of Working Papers

Competition and Privacy (Job Market Paper)

The question of whether competition enhances or impedes a firm's commitment to protecting consumer privacy has been debated in competition policy circles. This paper studies how a shift in competition affects the nature and type of data a firm collects which could intrude on consumers' privacy. I study this question in the context of Android app markets in China, and measure privacy by examining apps' permission requests. I investigate a 2017 regulation that reduced competition in censored app categories by prohibiting censorship-circumvention tools commonly used to access apps banned by the government.

This regulation made banned apps less accessible and reduced competition faced by permitted apps in censored categories, but did not affect apps in uncensored categories. I use a synthetic differences-in-differences approach to examine the number of permissions requested by permitted apps in censored categories compared to apps in uncensored categories before and after the regulatory change. By analyzing over 300,000 historical app installation packages, I show that reducing competition led to a significant increase in the number of permissions requested by apps. Empirically, this increase in privacy-invasive behavior is due to treated apps' efforts to improve consumer engagement and monetize attention. It does not reflect additional use of data for ad-targeting or incorporating additional functions into their products.

The Effect of Subsidizing Digital Educational Content: Evidence from a Field Experiment

with Jingcun Cao and Catherine Tucker (*R&R at Management Science*)

The unequal distribution of educational resources has been a major concern of both educators and policymakers around the world. The rise of the digital education industry brings new hope to the problem, but how exactly it affects existing education inequality remains largely unknown. Using data from a unique field experiment by an eBook app, we investigate the effects on K–12 children of improving access to digital educational resources. In particular, our analysis traces out both the short-run and long-run treatment effects of providing children with free access to digital reading resources, and how these effects vary across children with different socioeconomic backgrounds.

We find that providing children with free access to digital reading materials leads to a dramatic and immediate increase in reading time (491%) for treated children, and that the immediate effect is much larger for children from less developed regions with fewer educational resources. However, children's reading activities decline quickly after the start of their free access. Surprisingly, the decline is much faster for children from less developed regions, despite their strong initial reaction to the treatment. Further evidence suggests that children from more developed regions benefit more from the free access in the long run. Our mechanism analysis further reveals a nuanced complementarity between digital and non-digital education and suggests that the long-run difference in reading patterns likely reflects differing levels of parental involvement in the education of children with different socioeconomic status. We discuss the managerial and policy implications of our study.

Does IT Lead to More Equal Treatment? An Empirical Study of the Effect of Smartphone Use on Customer Complaint Resolution

with Catherine Tucker and Shuyi Yu. (*R&R at Information Systems Research*)

This paper explores how digitization affects inequalities in the customer complaints process that reflect the education of the consumer. We analyze 364,189 customer complaints received by the City of Boston and estimate a Cox proportional hazards model of the complaint resolution time. We find that complaints that originate from areas with high levels of education are more likely to be resolved quickly. We then ask whether digital technologies, particularly the use of mobile apps to submit complaints, reduce or increase this disparity in complaint resolution. Since the adoption of digital devices is endogenous to wealth and education, we instrument for the usage of mobile apps with granular geographic data on a proxy for cellular signal strength. In particular, we use a discrete-time approximation of the proportional hazards model to overcome the challenge of using instrumental variables in non-linear models, and adopt a more flexible Lasso-based IV selection procedure to allow for heterogeneity in the first stage.

We present evidence that not only does our instrument affect the ability to use the mobile application, but also, due to the unusual topography and history of Boston, strength of local cellphone signal is not strongly correlated with the demographics of the local neighborhood. We find that dedicated mobile app

technologies that automate the complaints process can help mitigate the advantage conferred by education. This suggests that mobile applications can partially eliminate the disparity between educated and uneducated people in how their complaints are resolved. We present suggestive evidence that this is because mobile devices and the standardization of communication they require eliminate potential differences in treatment of cases that arise due to differences in communication skills. This result suggests that using newer forms of automated digital communication tools enhances equality in customer service.

Search Correlations and Harbingers of Failure

with Duncan Simester. (*In preparation for submission to Journal of Marketing Research*)

Recent research has documented that there exist customers who systematically buy new products that fail. More generally, these "harbingers" tend to purchase products that are different from other customers. The effect extends across multiple categories, and even multiple retailers. Although this effect is well-documented, it is unclear why choosing an unpopular product in one category would predict similar choices in other categories, especially when the categories are very separate. In this paper we argue that one latent characteristic that could contribute to the effect is a customer's willingness to engage in search. We empirically show that the amount of search a customer engages in is correlated across seemingly unrelated tasks. Given weak assumptions on customers' prior beliefs (essentially that the priors are accurate on average), we prove theoretically that this is sufficient to explain the harbinger effect.

The paper includes both theoretical and empirical components. The theoretical component studies the relationship between search and whether customers make choices that are different from other customers. While it is straightforward to show that more search increases the likelihood customers will find their preferred products, it is less clear how search affects the probability they will purchase flops. We model the relationship between search and market share, and show that a weak assumption about the accuracy of customers' prior beliefs is sufficient to ensure that more search increases the probability that a customer will purchase a high market share product. In our empirical analysis, we investigate both the key assumption and a key finding from our theoretical analysis. First, we provide evidence that search is correlated across decision contexts. Second, we show that customers that search less in one purchasing context are more likely to purchase flops in a second purchasing context. Finally, we use store traffic as a proxy of search cost and investigate the causal effect between barriers to search and purchasing flop products.

References

Catherine Tucker (Chair)

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Duncan Simester

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