

MKT927: INTRO TO QUANTITATIVE MARKETING

Prof. Andrey Fradkin

Lecture 10: Big Tech: Policy and Society

TODAY'S AGENDA

- Discuss major issues in Big Tech's effects on policy and society.
- Rajkumar et al. (2022).
- Vertical Integration and Consumer Choice.
- Discussions: Levy (2021), Braghieri et al. (2022).
- Meetings about final project.

BIG TECH: SOCIETAL POWER

- Brandeisian view of Big Tech. Similar to historical arguments about large trusts (railroads, oil, etc.).
- CEOs of Facebook, Google, Amazon, Apple, etc. are now among the most powerful people in the world. Changes in policies regarding distribution, content, etc. have significant societal implications.
- No unified policy in the US to regulate Big Tech, and no consensus on how to do it.
- Nonetheless, dissatisfaction with Big Tech is widespread across the aisle.

EUROPEAN REGULATORY INNOVATION

- GDPR: Focus on privacy, consent, and data protection.
- Digital Markets Act: Focus on market power and competition. Denotes large platforms as “gatekeepers” and creates special rules for them.
- Digital Services Act: Focus on content moderation and user safety.

SECTION 230 OF THE COMMUNICATIONS DECENCY ACT

No provider or user of an interactive computer service shall be treated as the publisher or speaker of any information provided by another information content provider.

This law protects Big Tech companies from being sued for the content posted by their users in the US.

BIG TECH: MARKET POWER

Attempts to use existing antitrust tools to regulate Big Tech.

- Original case: USA vs Microsoft (1998).
- Current cases:
 - USA vs Google (2020). Suit against Google for monopolizing the market for general search engine services.
 - USA vs Google (2023). Suit against Google for monopolizing the display advertising market.
 - Epic Games vs Apple (2021). Suit against Apple for monopolizing the market for in-app payments. Similar to the case against Google.
 - FTC vs Amazon (2023). Suit against Amazon for monopolizing the market for general online retail services.

BIG TECH: EFFECTS ON POLITICAL BEHAVIOR

- Important non-economics work: “The Revolt of the Public and the Crisis of Authority in the New Millennium” by Gurri (2018), “The Filter Bubble” by Praiser (2011).
- Important precedent: The effects of TV news on political behavior. Martin and Yurukoglu (2017), DellaVigna and Kaplan (2007).
- Important precedent: “What Drives Media Slant” by Gentzkow and Shapiro (2010).

EFFECTS ON POLITICAL BEHAVIOR: IS THERE EVEN AN ALGORITHMIC FILTER BUBBLE?

- Bakshy et al. (2015). Use Facebook internal data to show political exposure is mostly driven by friends on Facebook. Against the algorithmic filter bubble hypothesis.
- Boxell et al. (2018). Argue that polarization online is the same as offline.
- Guess et al. (2023), moving to a chronological vs algorithmic feed increases exposure to political and extreme views.

BIG TECH: EFFECTS ON MENTAL HEALTH, EDUCATION, AND SOCIETY

- Mental health: Alcott et al. (2022), “Digital addiction”. Braghieri et al. (2022) later today. Bursztyn et al. (2025), “The social media trap.”
- Education: Not an expert here, but Haidt’s book “The Anxious Generation” is a good place to start for ideas. Although it cites weak studies.
- Dating and marriage: Hitsch et al. (2010), more recent work by Buyukeren et al. (2024).

RAJKUMAR ET AL. (2022)

- Research question: how important are ‘weak ties’ in finding a job?
- This is a classic social science topic made famous by the work of sociologist Mark Granovetter (1973).
- Rajkumar et al. (2022) use a randomized experiment on LinkedIn to estimate the effect of weak ties on job finding using a causal design.

- Framing of the paper is social science as **SCIENCE**.
- They use a randomized experiment on LinkedIn to estimate the effect of weak ties on job finding using a causal design.
- Idea is to exogenously vary the frequency of weak ties in the People You May Know module.
- Critically can measure job finding at the individual by firm level.

THOUGHTS ON THE PAPER

- Key finding: “Moderate” ties are more useful for job finding.
- Thoughts?

VERTICAL INTEGRATION AND CONSUMER CHOICE

FARRONATO, FRADKIN, AND MACKAY

MOTIVATION

Do the presence of vertically-integrated products from “intermediaries” benefit or harm consumers? Four mechanisms:

- Provide greater variety
- Increase or decrease search intensity
- Affect cross-platform or cross-retailer behavior
- Competitive effects on equilibrium prices of other products

In the context of Amazon:

- What are the above effects of Amazon-owned brands (private labels)?
- Do Amazon brands displace other products that consumers prefer?
- *What data could we use to assess these questions?*

THIS PAPER

We run a field experiment to assess the (short-run) impact of Amazon brands on consumers

- Web extension that, in our main treatment, hides Amazon brands from shoppers
- We provide reduced-form experimental evidence about effects of Amazon brands on substitution patterns, search, and cross-platform traffic
- We supplement observed behavior with corroborating survey evidence

STUDY DESIGN

Recruited over 1200 participants for an IRB-approved study of online shopping

- Selected frequent Amazon shoppers in the U.S., over 18, who use Chrome

Participants installed a custom browser extension that we developed

- Tracks detailed clickstream and html data
- Prompts users to complete tasks
- Can manipulate users' browsing experiences

Experimental design: Participants were randomized into three groups

- Control: no change for what the participant sees
- Hide Amazon: Amazon brands are hidden
- Hide Random: A random set of products were hidden

Control

Results

Click each product page for other buying options.

Amazon Basics 24 Count AA & AAA High-Performance Batteries Value Pack - 12 Double-A Battery with Long...
24 Count (Pack of 1)
★★★★★ - 4,771
50K+ bought in past month

FREE delivery Sat, Sep 29 - Oct 2 on \$25 of items shipped by Amazon
Or fastest delivery **Fri, Sep 29**

Amazon Brand

Duracell Coppertop AA Batteries with Power Boost Ingredients, 20 Count Pack Double-A Battery with Long...
20 Count (Pack of 1)
★★★★★ - 108,402
100K+ bought in past month

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★★★★★ - 24,769
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48 Count (Pack of 1)
★★★★★ - 143,722
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36 Count (Pack of 1)
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Treatment

Results

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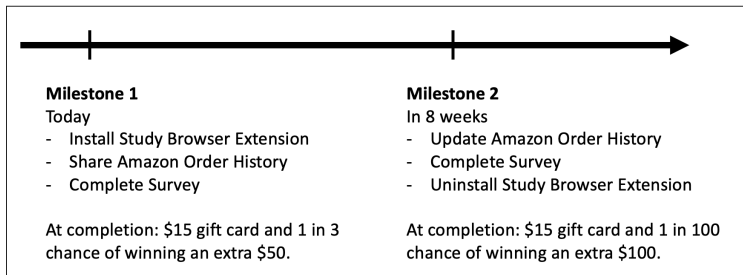
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DATA COLLECTION

We collected detailed clickstream and html data for all participants for

1. Incentivized shopping task (first survey)
2. Organic shopping behavior for an 8-week period

Participants also shared Amazon order histories and answered survey questions



INCENTIVIZED SHOPPING TASK

We asked users to select six products

- One for each category of personal care, electronics, apparel, household items, paper products, and health
- Participants select subcategory (e.g., toothpaste)
- Participants add items to a special wishlist

Incentive: 1 in 3 chance of receiving one item and gift card. Total value: \$50

Please select one product that you would like to purchase in each of the following categories:

Personal Care (Select one):

Nail clippers

Toothpaste

Deodorant

Comb / brush

Electronics (Select one):

Monitor cable (HDMI, USB-c)

Batteries

Extension cord

Phone charger

TREATMENT EFFECT REGRESSIONS

Treatment Effect Regressions

	Amazon Brand (1)	Price (2)	Reviews (3)	Stars (4)	Major Brand (5)	Prime Eligible (6)	Sponsored (7)
Hide Amazon	-0.076*** (0.007)	-0.758 (0.402)	-9,049.732*** (1,669.677)	0.030 (0.015)	0.044*** (0.013)	-0.006 (0.021)	-0.028 (0.018)
R ²	0.085	0.109	0.111	0.077	0.296	0.116	0.032
Observations	5,200	5,120	5,135	5,193	4,789	4,734	3,482
Mean of Y	0.092	21.083	27930.659	4.538	0.36	0.603	0.416
Category fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Counterfactual Welfare Effects

Scenario	CS (\$)	% Change in CS	% Change in Prices	Inside Share
Baseline	3.12	—	—	0.488
Remove Amazon	3.00	-3.80	0.61	0.475
Remove Amazon (No Price Adj.)	3.03	-2.96	0.00	0.478
Remove Random	3.05	-2.29	0.00	0.480

Removing Amazon brands would reduce consumer surplus by 3.8 percent

- Equilibrium price increases reduce CS by 0.8 percent
- Price effects are larger for higher-ranked products
- Small shift toward the outside option
- Random removal has about 60 percent of the impact

Results mask substantial heterogeneity across categories

DISCUSSION

- Use of experiment to study market power.
- Importance of model to interpret the results.
- Price response does not seem to be that important.
- What other counterfactuals would be interesting?

NEXT TIME

- Skim “Situational Awareness” by Aschenbrenner et al. (2024).
- Read “General purpose technologies ’Engines of growth” by Bresnahan and Trajtenberg (1995).
- Read “Prediction Policy Problems” by Kleinberg et al. (2015).
- Intro to Vafa et al. (2024).