

What Determines Consumer Complaining Behavior?

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Consumer “voice” matters for markets

- Internet has magnified the effect of consumer voice
- Lots of evidence that user reviews affect demand
- Consumer voice can affect:
 - ▶ Consumer: Measure of Product Quality
 - ▶ Platform/Retailer: Which Products to Display / Stock
 - ▶ Manufacturer: How to Improve Products

But: whose voice do we hear?

- Little is known about the characteristics of reviewers
- Likely large self-selection
- Self-selection could affect:
 - ▶ Which products are reviewed
 - ▶ How quality is assessed

Examples of Self-Selection

- Franchise Hotels
 - ▶ Which hotels provide good service when consumers vary in complaint propensity?

- Consumer Review Fairness Act
 - ▶ What happens when firms penalize complaints?

Identification Problem Without Consumer Experience Data

- Higher rates of consumer complaints could reflect:
 - ▶ Higher Propensity to Complain
 - ▶ Worse Consumer Experience
- Typically difficult to disentangle these two stories

I separate the two using a set of legal cases

- Victim Datasets matched to Consumer Sentinel Network complaints
- Linked to demographics at zip code level
- Do policymakers learn about problems affecting all communities?

Main Takeways

- Substantial Selection in Complaints
 - ▶ Areas with more minorities complain less
 - ▶ Areas with more college graduates complain more

- Controlling for consumer experience important
 - ▶ Compared to population, heavily black areas complain more!

Related Literature

- Customer Reviews

- ▶ Strategic Behavior (Mayzlin et al. (2014))
- ▶ Optimal Ranking (Dai et al. (2014))
- ▶ Review/Reviewer Characteristics on Demand (Hu et al. (2008); Ghose and Ipeirotis (2011))

- Customer Satisfaction

- ▶ Foundation from Hirschman (1970)
- ▶ Large literature (Oster (1980), Singh (1989), Garrett and Tomanoff (2010), Ayres et al. (2013))
- ▶ But small samples and no control for consumer experience

Consumer Demographics

- Consumer Zip Code matched to ACS 2008-2012 Demographics
 - ▶ Race: **Percent Black**, **Percent Hispanic**, Percent Asian
 - ▶ Culture: **Percent College Graduates**, Degree of Urbanization
 - ▶ Cost of Time: Median Household Income, Unemployment Rate, Median Age, Household Size

- All demographics discretized

For four cases, I can compare victims to complaints

Case	Number of Victims	Number of Complaints
Case B	12,311,307	4,271
Ideal Financial	2,010,169	1,403
Platinum Trust	69,576	510
WinFixer	304,493	1,062

Complaint rates are correlated with victim rates

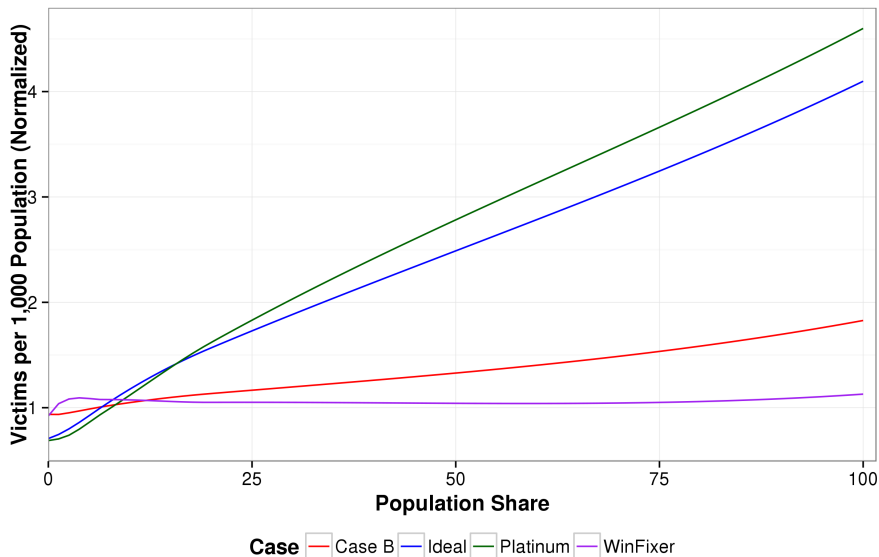
$$\log(E(\text{complaint rate})_z) = \alpha(\text{victim rate})_z$$

Complaint rates are correlated with victim rates

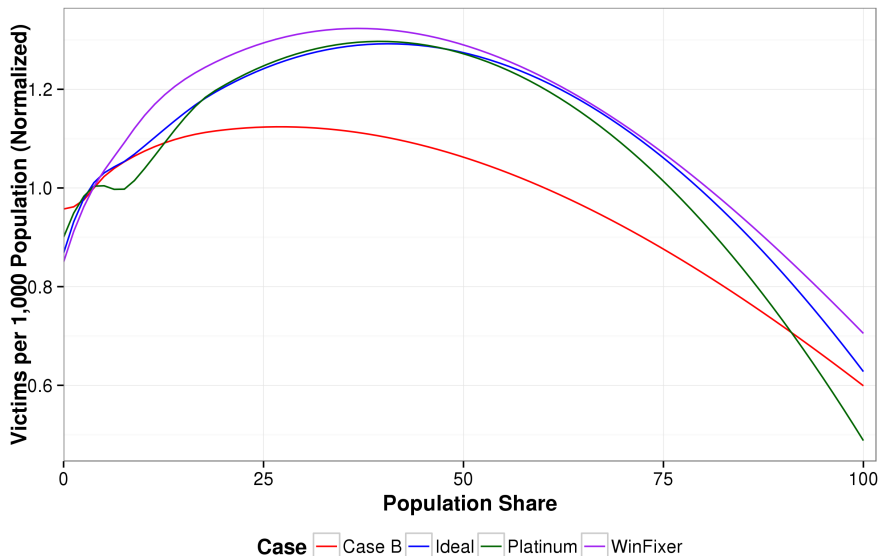
$$\log(E(\text{complaint rate})_z) = \alpha(\text{victim rate})_z$$

Case	Effect
Case B	0.125 (0.033)
Ideal Financial	0.151 (0.026)
Platinum Trust	0.155 (0.023)
WinFixer	0.173 (0.036)

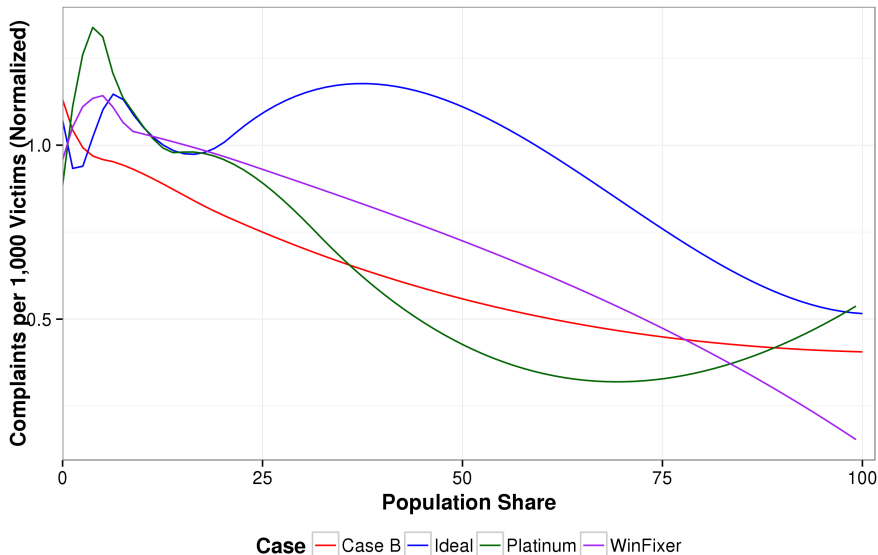
Victim rates vary widely by case (% Black) ...



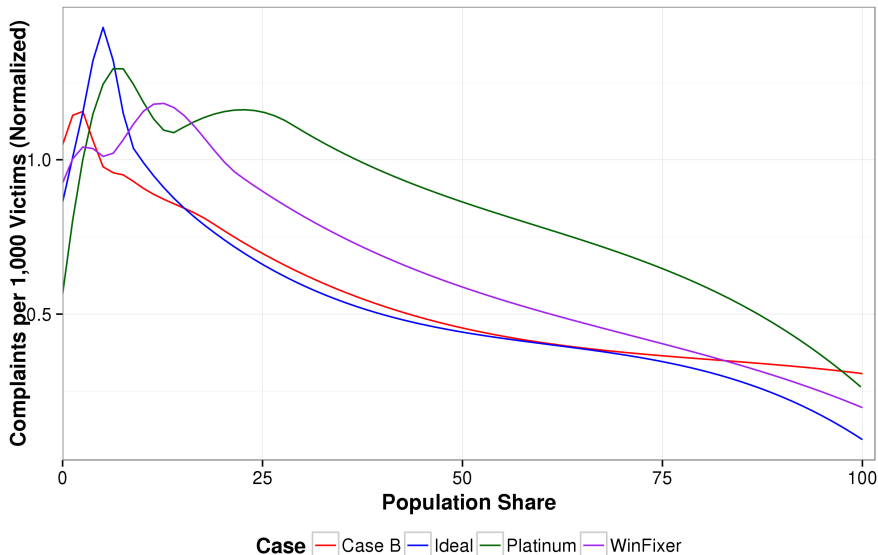
Victim rates vary widely by case (% Hispanic) ...



... but complaint rates lower in minority areas (% Black)



... but complaint rates lower in minority areas (% Hispanic)

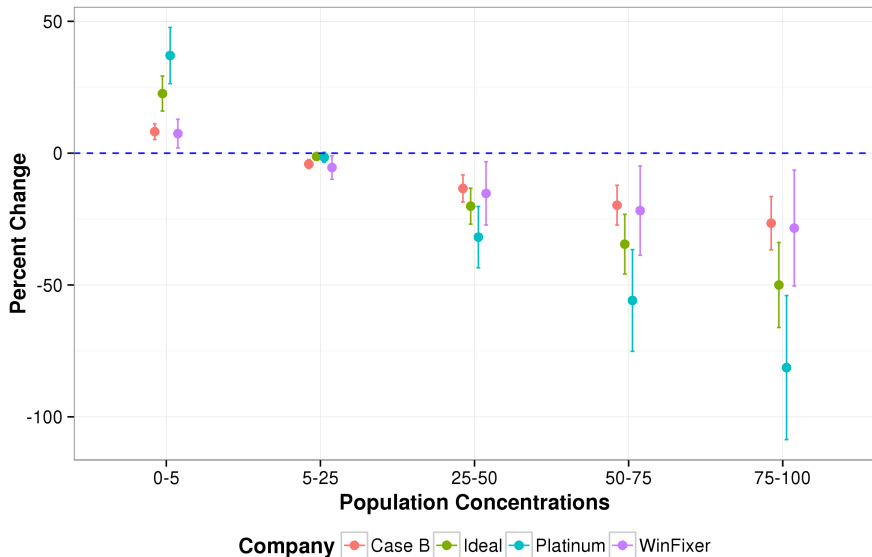


I examine selection using ordered logit on individual data

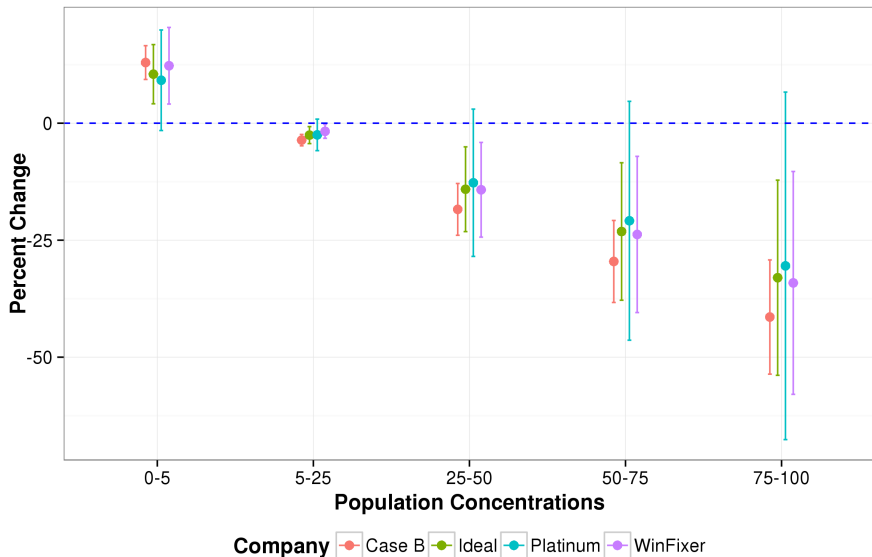
$$y_{sz}^* = \alpha 1\{complaint\} + \beta D_{sz} + \eta \log(Population)$$

- y_{sz}^* : Latent variable for demographic category
- $1\{complaint\}$: Indicator that complaint
- D_{sz} : Controls for all other demographics

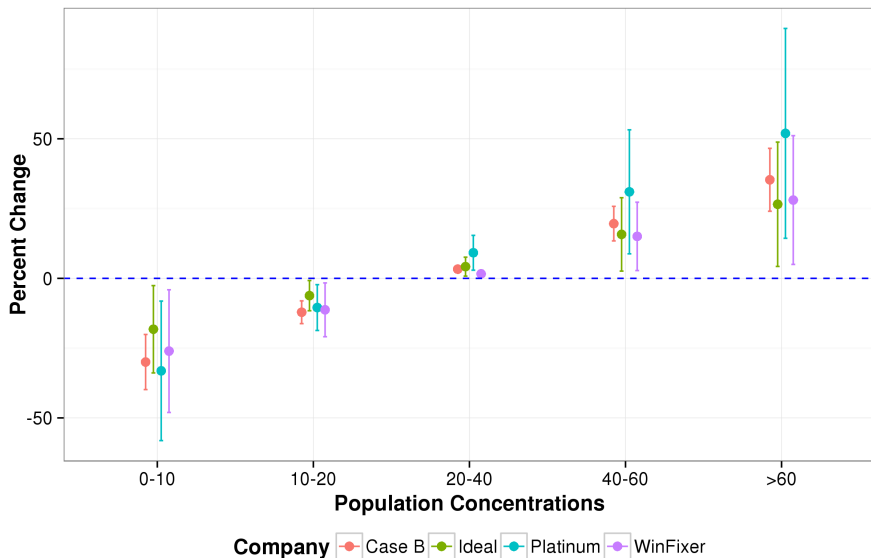
Lower complaint rates in black areas



Lower complaint rates in Hispanic areas



... but higher complaint rates in college educated areas

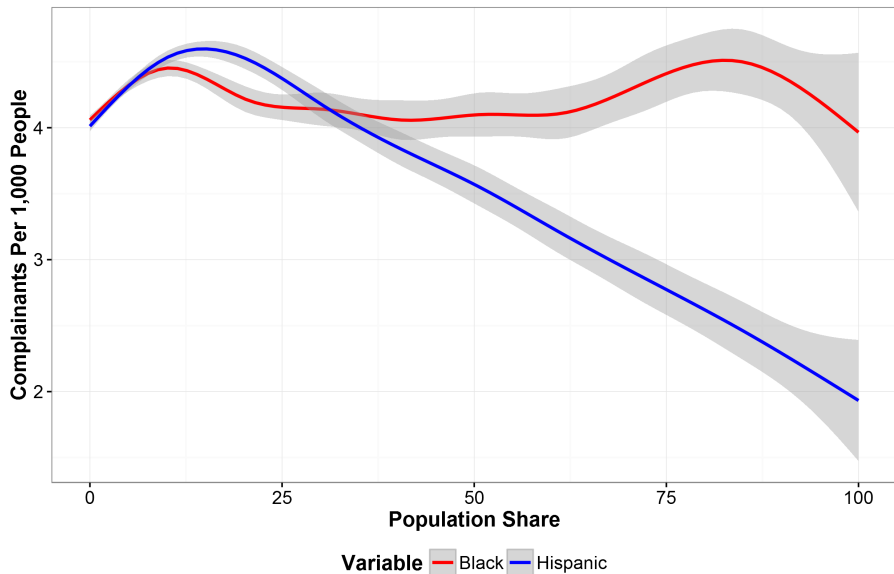


Very different patterns when do not control for customer experience

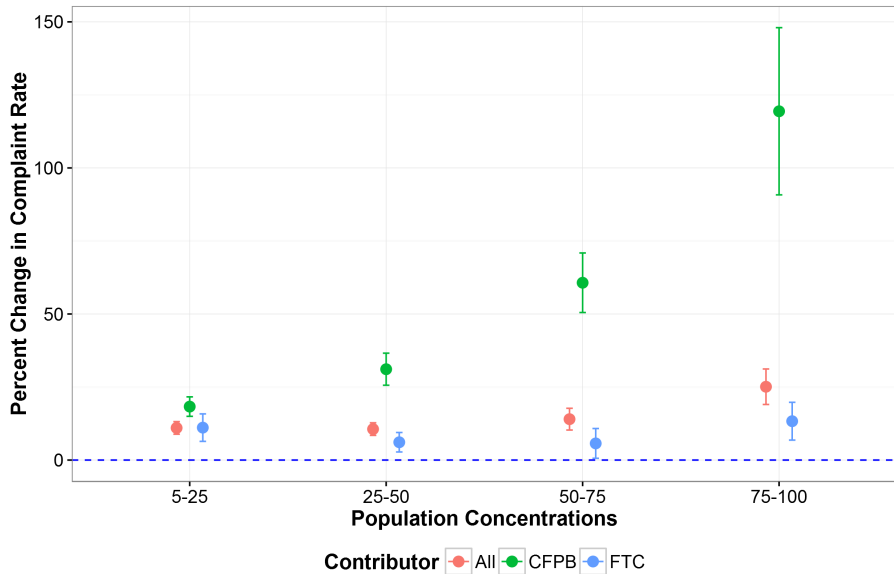
- Examine how per capita complaint rate for Consumer Sentinel varies with demographics
- Data from 2012 - 2015, excluding identity theft
- Specification:

$$\log(E(y_{szt})) = \beta D_{sz} + \eta \log Population + \gamma_t + \delta_s$$

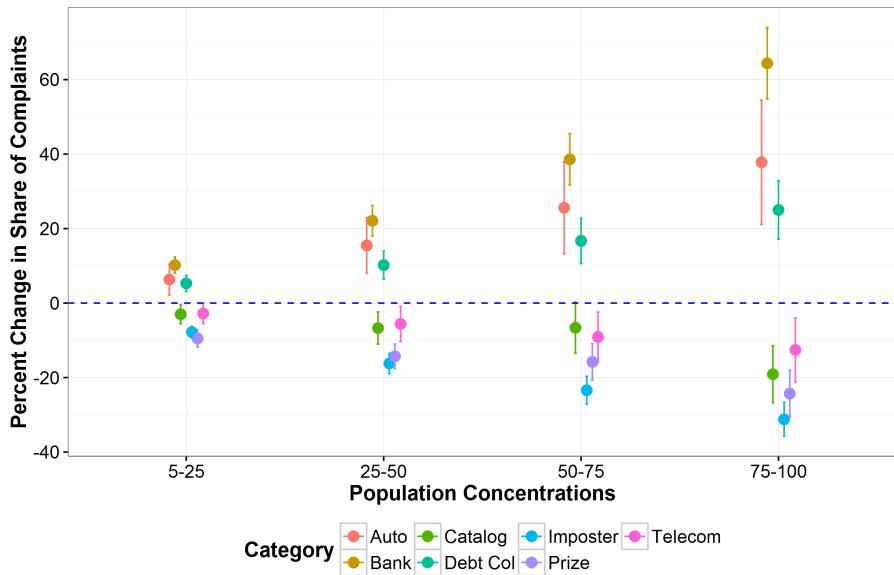
Per capita complaint rates roughly constant with % Black



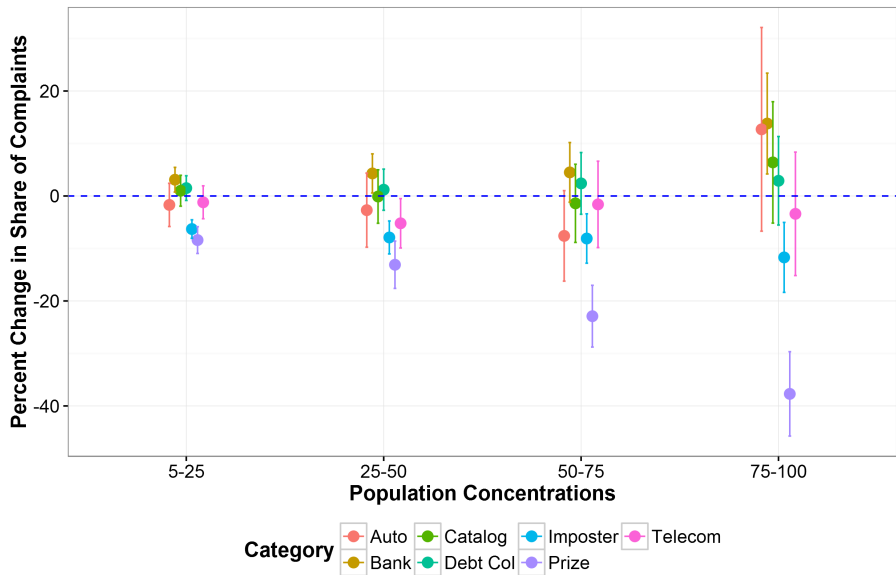
Per capita complaint rates slightly rising with % Black



Minority areas complain about different issues (% Black)



Minority areas complain about different issues (% Hispanic)



How can we account for selection?

- Policy answer - Outreach
 - ▶ Contact groups that typically complain less
 - ▶ FTC: Outreach events
 - ▶ Marketer: Surveys / Incentives?

- Statistical answer - Weighting
 - ▶ Overweight complaints from groups that complain less
 - ▶ But: Need data on consumer experience to construct weights