

Social Learning and Market Structure: The Case of Airbnb

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Research question. Market failure: positive externalities from product reviews

- Under-provision of reviews may reduce efficient matches
- May also reduce entry incentives by new sellers
- How do such informational frictions affect market structure?

Approach. Analyze this question using Airbnb data in Manhattan over 2014-2019

- Dynamic game of entry/pricing by hosts
- Demand depends on prices and reviews/ratings
- Estimate an OE and simulate CF under subsidy to unreviewed listings

Findings.

- \$32 subsidy maximizes total welfare (hosts, guests, platform)
- Mainly through raising entry, and lowering prices, not so much through changing the distribution of reviews

Comments. important question, rich data, many strengths.

- widespread problem for digital platforms
- many instruments used in practice: subsidies (e.g., ad credit), recommendation algorithm
- interesting approach to deal with dimensionality problem (OE)

Pricing.

- Are sellers pricing optimally? Are price patterns in the data consistent with model predictions?
- All else equal, one would expect new sellers to internalize positive spillovers on future demand (through reviews) and price lower.
- Interesting to know the equilibrium pricing function $P_t(x)$
- How does this function compare to prices in the data? (Table 2)

Short v. Long run welfare effects. Entry costs are front-loaded

- Fixed costs (electricity, insurance, maintenance, etc.) are normalized to zero
- In practice, FC end up in the entry costs (so shifted to the short-run effect)
- This might matter when interpreting short-run and long-run effects

Model Assumptions.

- Hosts learn their listing type upon entry: could be relaxed at the cost of larger strategy space
- Hosts do not know their quality: might overstate welfare gains from entry if marginal entrant has below-average quality?
- Akerberg and Rysman (2005): welfare effect of new product entry overstated under logit: could include the correction they propose

Other comments.

- Estimation strategy: two-step estimator would be less computationally intensive? (recover $(P_t(x), \lambda, \chi(x))$ from data, and minimize distance between estimated and predicted strategies)
- ΔCS : how much is explained by market expansion (drawing consumers from the outside option)? how much is due to increased listing variety?
- CF: is there a fee structure under which subsidies are beneficial to Airbnb? What is driving the result that Airbnb never benefits? (marginal revenue v. marginal cost of the subsidy)