Paying For a Chance to Save Money: Participation Fees in Name-Your-Own-Price Selling

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We report results of an incentive-compatible experiment that tests the economic-theoretical prediction that name-your-own-price retailers, such as Priceline, should benefit from charging upfront participation fees. As predicted, such fees are profitable. We propose and estimate behaviorally enriched models (involving risk-aversion and myopia) of the observed consumer entry and bidding behavior.

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EXTENDED ABSTRACT

Name-your-own-price (NYOP) selling continues to thrive in the marketplace, both on Priceline.com for hotels and flights, and on several newer websites that sell diverse products ranging from restaurant vouchers (chiching.com) to designer handbags (nyopoly.com).

NYOP retailer's problem and current theoretical solution

What can NYOP retailers do to increase their profit? One idea, based on a recent development in marketing theory, is to charge an upfront non-refundable participation fee: using game-theoretic analytical modeling, Spann, Zeithammer, and Häubl (2010 and 2015, hereafter SZH) predict that a NYOP retailer facing risk-neutral consumers should benefit from charging an upfront non-refundable participation fee. Similar to a two-part tariff, this strategy turns some low-valuation consumers away, but collects enough money from high-valuation consumers to more than make up for the reduced volume of sales.

Experimental design and data

This study is the first controlled laboratory test of the profitability of participation fees in the NYOP setting discussed in the previous paragraph. We test the real-world viability of such participation fees using an incentive-compatible experiment on 96 subjects under the experimental economics paradigm. The products are virtual tokens with induced value, allowing us to abstract from specific product categories and vary and control consumer valuation (Smith, 1976). Subjects are assigned the role of consumers and bid against computerized retailers called "stores" in a session involving multiple periods. The data provides us both with a direct managerially relevant test of the profitability of participation fees, and with a rich dataset on which we can estimate and test (at the individual level) behaviorally enriched models of entry and bidding in NYOP settings. Such behaviorally enriched models bridge the gap between existing economic theory and actual consumer behavior. The estimation of behaviorally enriched models creates a connection between auction econometrics and psychological theories of consumer behavior.

Possible extensions of the existing theory

Actual consumers may have an apriori decision rule (Amir and Ariely 2007) against paying such non-refundable fees – a preference we call fee aversion. Risk-averse consumers may have a lower willingness to pay such fees as a result of the risk involved in bidding (Shapiro 2011). Both types of aversion may diminish or even reverse the benefit of participation fees suggested by the existing theory. We extend the economic theory to risk-averse consumers, and design our laboratory experiment to explicitly test for both fee aversion (by comparing very small fees to zero fees) and risk aversion (by collecting bidding data at different levels of consumer valuation).

Summary of results

Confirming the main prediction of SZH, retailers charging participation fees make more profit than retailers charging no fees. One reason participation fees are profitable for our simulated retailer is that we find no evidence of fee-aversion: a retailer charging no fees does not attract fewer consumers and ends up making more money than a retailer charging a very small economically negligible fee. Consistent with risk-aversion, the optimal fee level is lower and the observed consumer bids are higher than the level that would be optimal under consumer risk-neutrality. However, risk-aversion is not sufficient to completely explain our data: we find that for intermediate fee levels, the retailer makes a higher expected profit than predicted by the model with arbitrarily heterogeneous risk-aversion. At least two behavioral phenomena contribute to this discrepancy: First, the consumers who can afford the outside posted price bid too high to be consistent with any level of risk-aversion. Second, our consumers enter more often than even risk-neutral consumers should when they cannot afford the outside option, but they enter less when they can afford the outside option.

Behaviorally-enriched model with partial myopia of outside options and mental assigning a part of the fee as payment for entertainment

To capture the two phenomena introduced in the previous paragraph, we propose and estimate (at the individual level) a behaviorally enriched model of consumer preferences. Our proposed model is enriched in two ways: first, we allow each bidder to be partially myopic regarding the option value of buying from the posted-price retailer should her bid be rejected. Second, we allow each bidder to discount the disutility of the participation fee to capture the idea that bidding in NYOP has some entertainment value. While the enriched model fits the data better than a model with only risk-aversion, it does not capture the observed entry-pattern well. As a result, even the enriched model cannot explain the pattern of NYOP retailer profits we find. To further enrich the model, we invoke cumulative prospect theory with a probability-weighting function (Tversky and Kahneman 1992).

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