

This is the peer reviewed version of the following article: Kumar, S., Wang, Y. & Chen, H.A. (2023) Behavioral pricing in the platform economy. *Decision Sciences*, 54(4), 432–433, which has been published in final form at <https://doi.org/10.1111/deci.12608>. This article may be used for non-commercial purposes in accordance with Wiley Terms and Conditions for Use of Self-Archived Versions. This article may not be enhanced, enriched or otherwise transformed into a derivative work, without express permission from Wiley or by statutory rights under applicable legislation. Copyright notices must not be removed, obscured or modified. The article must be linked to Wiley's version of record on Wiley Online Library and any embedding, framing or otherwise making available the article or pages thereof by third parties from platforms, services and websites other than Wiley Online Library must be prohibited.

## Behavioral Pricing in the Platform Economy

Subodha Kumar, Temple University, [subodha@temple.edu](mailto:subodha@temple.edu)

Yulan Wang<sup>1</sup>, Faculty of Business, The Hong Kong Polytechnic University, [yulan.wang@polyu.edu.hk](mailto:yulan.wang@polyu.edu.hk)

Haipeng (Allan) Chen, University of Kentucky, [allanchen@uky.edu](mailto:allanchen@uky.edu)

Behavioral pricing is one of the most common practices adopted by firms in daily operations. Customers and clients are charged different prices based on factors such as their demographic features (e.g., gender, age, income, household zip code, etc.), time sensitivity, membership status, frequency, location, accessible channel, and size. With the emergence and rapid growth of the platform economy, firms are provided with granular levels of data to integrate behavioral insights into their pricing and inventory decisions. The evolution of online platforms is also engendering new social and moral-hazard issues, with pricing at the center of many of these issues. For example, e-commerce platforms such as Pinduoduo provide discounts to consumers during the checkout stage if they invite friends from social networking platforms to “bargain” for their purchase. Price discrimination via big data and subsidy-fueled but capital-draining platforms (e.g., ofo, TrustBuddy, and Ezubao) may impact consumers’ choices, exacerbate social injustice, and create environment- and sustainability-related damages. Furthermore, online platforms may amplify problems of traditional offline markets, such as infringement, counterfeiting, and propaganda, due to intensified competition and the resultant aggressive pricing. All these require academics and practitioners to have a better understanding of new, unique, and challenging behavioral pricing issues arising in the platform economy.

Motivated by the growing prevalence of behavioral pricing and platform economy, we organize this

---

<sup>1</sup> Corresponding author. This work was supported by the National Natural Science Foundation of China (71971184) and the Research Grants Council of Hong Kong (RGC Reference Number: 15505019).

special section of the *Decision Sciences Journal*, focusing on studies on the impact of the platform economy on behavioral pricing. In the following, we introduce the featured papers.

In the on-demand ride-hailing platform, surging pricing has been implemented in the period of limited supply (e.g., rush hour) to reduce the imbalance between the insufficient labor supply from self-regulated drivers and soaring rider demands in peak hours, via increasing the wage paid to the drivers (to incentivize more self-regulated drivers to join the platform to work) and the price charged to the riders. Such surge pricing is often automated and triggered by the pre-set pricing algorithm. Knowing that drivers tend to collude to cheat the automated pricing solution by strategically signing off the platform to create an artificial supply shortage, triggering a surge-pricing-induced higher wage for their own benefits. Although such collusive driver behavior has been observed by ride-hailing platforms, its implications have not been well understood. To that end, Tripathy, Bai, and Heese develop a game-theoretical model in which the market-condition-dependent prices and wages are pre-determined by the platform through its algorithm, and they are common knowledge. The riders are sensitive to both price and waiting time, while the drivers are heterogenous in their reservation wage and exhibit collusive driver behavior. That is, the drivers jointly determine the optimal number of drivers to sign in to the platform. The authors then derive the steady-state system performance. Interestingly, the authors find that driver collusion may benefit the platform. When driver collusion is harmful, the authors further propose two instruments to mitigate drivers' incentive to collude: a bonus payment policy that encourages driver participation and a freeze period policy that locks out those drivers signing off the app for a certain period.

Gopalakrishnan, Zhang, and Zhang first provide empirical evidence about the existence of the local social network effect, i.e., product purchase decisions from peers in a user's social network influencing a user's demand, with the data from an online video-sharing social platform. The authors then construct a game theoretical model to examine how the distribution of customers' social network degrees affects an online seller's optimal multi-product pricing decision. Under a random utility maximization framework, a customer's choice behavior is characterized by a Bayesian Nash game. The authors show that the optimal pricing strategy for the seller is a mark-up policy, under which the seller price-discriminates the customers based on their network degrees. The authors interestingly show that a larger network effect does not necessarily drive up the price. The authors further conduct a numerical experiment to examine the value of incorporating customer network information and price discrimination. They show that price discrimination is more valuable when the distribution of customer network degree is more spread out.

We believe that the featured papers in this special section demonstrate the advances and novelty of behavioral pricing in the context of the platform economy. In fact, it is evident that behavioral pricing is a powerful and flexible model suitable for a variety of platform economy contexts (e.g., resource sharing, social media, e-commerce, cloud, crowdsourcing, crowdfunding, and online delivery) using analytical, behavioral, or empirical approaches. We expect to see more platform-economy-based behavioral pricing studies in operations management, marketing, and information systems in the coming years.

Before closing, we would like to take this opportunity to show our appreciation to Xenophon Koufteros and Srinivas Talluri, the Editors-in-Chief of the *Decision Sciences Journal*, for supporting us in organizing this

important special section. We also thank all the associate editors, reviewers, and authors for their hard work in making this special section a success.