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| Operations Management and Statistics  **In-person** **Seminar RT 1060\***  Thurs., Apr. 4**,** 2024 @ **10:30 am** EST |
| Familiarity-Based Dynamic Pricing with Hierarchical Bayes Estimation of Consumer Choice  Hongmin Li, Professor of Supply Chain Management Carey School, Arizona State University  *All students and faculty welcome.*  ***\*Held in RT 1060 -*** *Hybrid portion hosted in* ***MS Teams*** *–* [*Click here to join the meeting*](https://teams.microsoft.com/l/meetup-join/19%3a9e1bc373e7134fd38f6c04608201b7de%40thread.tacv2/1708977198561?context=%7b%22Tid%22%3a%2278aac226-2f03-4b4d-9037-b46d56c55210%22%2c%22Oid%22%3a%227a3454cf-31a5-4115-a675-2a342cd1bcd8%22%7d)***.*** |

**Abstract |** Past consumption affects customers’ familiarity with a product and influences their preference for future consumption of the product. This effect is heterogeneous among individuals. For some customers, a higher familiarity increases their appetite for consumption; for others, the opposite may hold true. More generally, individuals’ preferences may be nonmonotonic with respect to familiarity and exhibit various patterns. Accounting for heterogeneous familiarity-based utility patterns can help a firm identify opportunities for profit growth by designing a pricing strategy that is longitudinally optimal as a customer’s familiarity changes with his/her consumption. Meanwhile, the prevalence of customer management programs has made consumer transactional data readily accessible. This creates opportunities for the firm to tailor pricing decisions to each customer’s specific familiarity-based utility pattern via, for example, personalized coupons. A major hurdle, however, is the complexity of deciphering the diverse familiarity-based utility patterns embedded in the transactional data and integrating this information with the price optimization model. In this paper, we present a value-passing dynamic pricing strategy that is optimal under a familiarity-based multinomial logit (MNL) choice model. In this context, we develop several flexible variants of the pricing model that dramatically reduce the complexity of integrating diverse utility patterns into optimal pricing decisions. Employing a hierarchical Bayes estimation approach, we demonstrate how this data-driven dynamic pricing strategy improves a firm’s bottom line. This is a joint work with Binghan Kou and Yuqi Yang.

**Bio |** [Hongmin Li](https://isearch.asu.edu/profile/1098151) is a Professor of Supply Chain Management at Arizona State University's W. P. Carey School of Business, where she has been since 2007. She earned her PhD in operations management from Sloan School of Management at the Massachusetts Institute of Technology. Her research focuses on supply chain decisions within technology and pharmaceutical industries, emphasizing operations strategies such as demand forecasting, revenue management, capacity planning, and production and inventory control. Her research delves into product line design and pricing decisions, with a focus on customer choices, as well as exploring transaction schemes among various parties in the pharmaceutical industry.Professor Li's significant contributions have earned her accolades, including the 2022 W. P. Carey Dean’s Mid‑Career Research Award and leading a winning project with Intel in the 2017 MSOM Practice-Based Research Competition. Beyond research, she actively organizes conferences and heads committees to enhance teaching and industry engagement.

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