Abstract: Among the limited ways for small service providers to balance demand and supply, launching temporary consumer offer may be attractive. However, relatively little work has empirically examined whether and how such offers pay off service providers. In this paper, using a comprehensive dataset from two leading deal platforms in China, we empirically study a new business model: the online deal. Service providers, who face predictable demand swings and capacity constraints, launch online deals for customers to prepay online and redeem later in store. Using a structural model, we show that online deals effectively facilitate demand-supply coordination through two levers, the discount and, more interestingly, the advance sales period. To our knowledge, using the advance sales period as revenue management tool has not been studied in the literature. Tailored to demand fluctuations and the service provider's operating margin, the advance sales period and the discount serve two separable operational roles to achieve profit maximization – adjusting demand mean and reducing variance-related costs. Furthermore, our model estimates enable us to quantify the operational value of the online deal. Via counterfactual analyses, we show that by using these two levers instead of solely a discount, 82.1% of the service providers see a mean profit improvement of 23.6%. The additional lever, advance sales period, helping to mitigate the extreme discounts is likely where the profit boosts come from.

Bio: Simin Li is a doctoral candidate at the Kellogg School of Management, Northwestern University. Her research interests lie in empirical operations management. She is particularly interested in studying the operational challenges and innovations in service industries and how consumers respond to various service designs. One of her current work empirically studies how small service providers using an innovative online deal to conduct revenue management during holiday demand swings. In another work, she studies how capacity expansion affects consumer choices in a healthcare setting. Before starting her Ph.D. at Kellogg, she worked as a data scientist at Microsoft.