

When Emergencies Arise: An Experimental Study of Supply Chain Recourse

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Abstract

This study experimentally investigates retailers' ordering behavior under the recourse option in a dyadic supply chain setting with a supplier and a retailer in both monopolistic and duopolistic markets. We first derive the normative best response function for duopoly newsvendors like retailers with the recourse option and subsequently implement between-subjects experiments to compare the monopoly and duopoly treatments, as well as duopoly markets operating under low- versus high-profit margins. In the duopoly context, we model two identical newsvendors offering the same perishable product in a common market. The results reveal systematic deviations from equilibrium, characterized by a pull-to-center tendency. Furthermore, the presence of the recourse option induces significantly higher ordering in duopoly markets compared to monopoly markets. Evidence of asymmetric ordering patterns across profit margins is also observed. To account for these behaviors, we use a statistical model that successfully explains all the primary experimental observations. Overall, the findings highlight the necessity of incorporating both individual and strategic behavioral factors into supply chain models and provide insights for enhancing supply chain resilience, particularly in the face of costly emergency orders.

Keywords

Supply chain resilience, Behavioral Operations, Competitive Newsvendor, Recourse Option

Biographies

Mohd Mujahid Khan is a PhD student in the Department of Management Sciences at Indian Institute of Technology Kanpur. He has contributed a book chapter to the Springer Nature series and has published in the Journal of Operations Management, a leading UTD24 and FT50 journal.

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