Product Assortment Competition with the Decoy Effect

Abstract:

Consider a consumer choice setting A with a low-profit product and a high-profit product, and a choice setting B with these same products as well as an apparently irrelevant product that is clearly inferior to the high-profit product. It has been widely observed that a larger fraction of people choose the high-profit product in setting B than in setting A. This is the decoy effect. Sellers often exploit the decoy effect by including decoys in their assortments. We study product assortment competition in a duopoly with decoys among candidate products, and where one seller’s decoy also affects the attractiveness of the other seller's high profit product. We characterize conditions under which different Nash equilibria exist. Under some conditions there exist multiple equilibria, and then we use dynamical systems models to study the evolution of the competition under simple learning schemes to differentiate the equilibria based on their stability.

This is joint work with Xinchang Wang, a Ph.D. student at Georgia Tech.