The Competitive Newsvendor Game with Overestimated Demand

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Abstract : The tradition competitive newsvendor game assumes decision makers are rational. However, there are behavioral biases when people make decisions, such as loss aversion, mental accounting and overconfidence. Overestimation of a subject's own performance is one type of overconfidence. The objective of this research is to analyze the impact of the overestimated demand in the newsvendor competitive game with two players. This study builds a competitive newsvendor game model where newsvendors have private information of their demands, which is overestimated. At the same time, demands of each newsvendor forecasted by a third party institution are available. This research shows that the overestimation leads to demand steal effect, which reduces the competitor's order quantity. However, the overall supply of the product increases due to overestimation. This study illustrates the boundary condition for the overestimated newsvendor to have the equilibrium order drop due to the demand steal effect from the other newsvendor. A newsvendor who has higher critical fractile will see its equilibrium order decrease with the drop of estimation level from the other newsvendor.