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Napoleon Martin* (nmartin2@student.savannahstate.edu), 3219 College St., Department of Mathematics, Savannah, GA 31404, and **Hyunkyun Oh**. *A price-decision and order-making mechanism for a retail beverage store during sales dealer's promotion period.*

This research explores a price-decision and order-making mechanism for various sizes bottles of the same brand beverage during an intermediate sales dealer's promotion event. Considering the price elasticity on demand (PED) in liquor from other literature, and particular sale circumstances of the store, such as the effect of advertisement and high density of similar stores, a mathematical model is constructed on the tracked sales data. Then optimization techniques are employed to realize the maximum profits in two options: 1) Applying the dealer's promotion benefit to only one kind of product 2) Applying the benefit to all kinds of products. In each case the optimal selling price, profits, volume of order, as well as best time to place order again, are delivered, and hence the resultant information can increase a store operation efficiency. Although the mechanism is constructed focusing only on one store, the developed whole structure can be applied immediately to other stores as well. (Received September 25, 2018)