Influencing Product Competition through Shelf Design

Abstract:
Arranging products on a retail shelf can directly influence consumer purchases by making products easy to find, and also indirectly by influencing the competitive set of products that a consumer considers. In this research we show that when products are placed closer together competition between the products increases. Thus shelf design can encourage consumers to purchase products that would not have previously been purchased. The motivation for the result is that consumer search is costly and consumers focus their search on local neighborhoods that are influenced by shelf position. Since search is costly, consumers may not exhaust all possibilities which means that position could be an important determinant of consideration. To formally model this behavior we create a sequential consideration model. To begin the search consumers are influenced by colors, favorite brand or the closest shelf edge, where few products can be considered. Then consumers shift their focus to neighboring products, in a sequential fashion, increasing the set of products considered, to finally making the purchase decision. By doing this, the shelf generate spatially induced consideration sets. Using this approach we find that demand is greatly impacted by shelf position and retailers can create plan-o-grams that can shift demand from one product to another. Our focus on using shelf design to stimulate competition contrasts with past research on shelf design that has focused mainly on cost minimization. Preliminary data using shelf-experiments from Dominick’s retail stores shows that re-arranging the products on the shelf can increase profits by up to 15%.

Keywords: Choice Models, Consideration Sets, Consumer Search, Shelf Design, Plan-o-grams