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Store Brand Quality and Retailer's Product Line Design

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Abstract

This study analyzes a retailer's store brand quality decision in vertically differentiated product categories. We analyze a game theoretic model composed of one or two national brand manufacturers and a retailer, who strategically chooses the quality level(s) of its store brand(s) relative to the well-established national brand position(s) to maximize its category profit. Our analysis reveals that the nature of a retailer's store brand quality positioning is quite different from the manufacturer's national brand positioning decision, and that the best position for a store brand is not "as close to a national brand as possible" as previous studies suggest. Instead, the optimal quality position of each store brand is remarkably sensitive to the distribution of consumers' willingness-to-pay. In particular, the relative proportions of quality sensitive consumers and price sensitive consumers determine the balance of three key strategic forces — the market expansion force, the retail margin force, and the consumer profitability force, leading to different optimal product line designs for store brands across different category environments. Interestingly, against multiple incumbent national brands, the retailer's optimal product line design includes a store brand positioned at the highest quality level in the category only if most consumers are moderately quality conscious. We also analyze the implications of national brands' brand equity for retailers' store brand strategy.

Keywords: Store brands; Distribution channels; Product positioning; Game theory

Introduction

Store brands have grown noticeably in both quantity and quality. The Private Label Manufacturers Association (PLMA) reports that sales of store brands reached $62.5 billion and accounted for 22.9% of unit volume in U.S. supermarkets in 2015, and that store brand dollar sales in supermarkets, drug chains, and mass merchandisers grew by almost 5% since 2013. To fully exploit their higher percentage margins, lower procurement costs, and store loyalty building effect (Corstjens and Lal 2000), retailers continue to investment in quality, merchandising, and space for store brands, offering more innovative, value-added products that find wide consumer acceptance despite their premium prices (PLMA 2013). Consequently, an increasing number of consumers perceive that some store brands have higher quality than national brands (Hale 2011), and find some store brands (e.g., Target's Archer Farms Triple Berry instant oatmeal) priced higher than leading national brands (e.g., Quaker Oats instant oatmeal) (Karp 2012). In addition, more retailers now carry a line of multiple store brands with different price and quality levels in a product category. Examples include Wal-Mart's Sam's Choice (premium) and Great Value (regular) frozen pizzas and the three-tiered composition of a value store brand, a national brand equivalent, and a premium store brand (Tarnowski 2007) as often observed in many European supermarkets (Kumar and Steenkamp 2006).

The growing importance and complexity of store brand management beg for deeper understanding of optimal decisions on store brand quality and product line design. By investigating this issue using a game theoretic model, our study seeks to contribute to the literature by addressing five aspects in previous studies. First, the issue of vertical positioning and product line design have been studied mainly from a manufacturer's point of view (e.g., Desai 2001; Moorthy 1984, 1988; Shi, Liu, and Petruzzi 2013; Vandenbosch and Weinberg 1995; Villas-Boas 1998; Xu 2009), assuming no active product positioning by retailers. In contrast, with the rapid growth of store brands discussed above, optimal product-quality decision and product line design are no longer exclusive concerns of manufacturers. However, it is unclear to what extent the findings of the existing literature, with

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its manufacturer focus, provide applicable strategic guidelines for retailers. In this study, we explicitly compare a manufacturer's national brand (NB) positioning problem and a retailer's store brand (SB) quality positioning problem to demonstrate their differences, and show how SB quality positioning is shaped by three underlying strategic forces: *the market expansion force*, *the consumer profitability force*, and *the retail margin force*.

Second, the majority of previous studies of SB positioning primarily focus on horizontal positioning of SBs, offering valuable insights into how to match SB features with consumer tastes (Choi and Coughlan 2006; Du, Lee, and Staelin 2005; Sayman, Hoch, and Raju 2002; Scott Morton and Zettelmeyer 2004; Sayman and Raju 2004). For instance, Choi and Coughlan (2006) analyzed the case where a retailer carrying two NBs introduces one SB as the lowest quality product in the product category. They find that the retailer's optimal SB positioning strategy along the horizontal dimension (i.e., features) may involve either minimum or maximum differentiation from the NBs, depending on the degree of differentiation among the NBs. In addition, their investigation of vertical positioning of the SB concludes that a retailer should choose the highest possible quality position for its SB, which means minimum quality differentiation from the low-quality NB. This finding is intuitive given their adoption of the standard assumptions of inferior SB quality relative to that of the NBs and zero production cost.[1] It also adds more evidence to the majority of the previous studies suggesting that the optimal SB positioning strategy is to imitate an NB as closely as possible, although such a conclusion cannot explain the variations of the SB quality positions observed in the real world. In contrast, we relax the above mentioned assumptions, and obtain new results that provide deeper insights into the observed variation of vertical positioning strategies of SBs.

Third, despite the simple strategic guidelines found in the majority of the previous studies, abundant empirical evidence indicates significant variations of SB positioning practices in the real world. For instance, Sayman, Hoch, and Raju (2002) analysis of 75 product categories revealed that their recommended strategy of emulating the leading NB was followed in less than 1/3 of the categories. Similarly, Scott Morton and Zettelmeyer (2004) surveyed two stores and found that only 15–20% of SBs matched a major NB in size, shape, color, so forth. In addition, our own observations from multiple retail stores exhibit different SB positioning strategies across retailers and across product categories. For instance, a well-known mass-merchandiser, targeting more quality conscious consumers, has been observed in the Northeastern United States to position its high quality SB mayonnaise at a higher price position than leading NBs such as Kraft and Hellmann's, whereas another competing mass-merchandiser catering to more price sensitive consumers has its SB mayonnaise positioned as the lowest-priced item in the category. Similar differences were found across competing retailers in the same region in other product categories such as sliced American cheese and sliced bacon.

Moreover, different SB positioning strategies are often observed across product categories in the same store. For example, one U.S. supermarket chain offers an SB applesauce as the most expensive item in the category, but positions its SB sliced bacon as a cheaper brand than leading NBs. Other categories (e.g., dish-washing liquid and apple juice) have SBs priced higher than some NBs but lower than top-tier NBs, as observed in multiple retailers. All of these point to the strong possibility that there is no "one-size-fits-all" SB positioning strategy that is optimal in all situations. Instead, we capture different market environments by incorporating four different distributions of consumers' willingness-to-pay for quality, and demonstrate that the relative proportions of quality conscious consumers and price sensitive consumers have substantial influence on optimal SB positioning strategy.

Fourth, we note that the majority of leading NBs in frequently purchased consumer product categories have well-established positioning in consumers' minds, and are distributed by multiple retailers with varying target market characteristics. Moreover, the NB manufacturers may enjoy benefits, such as economies of scale in production and marketing, from maintaining their long established brand positions. Consequently, the NB manufacturers are more likely to be locked in the current position and thus unlikely to reposition existing NBs in response to each new SB's entry (Chintagunta, Bonfrer, and Song 2002; Halstead and Ward 1995; Pauwels and Srinivasan 2004) or to consider forthcoming SB positioning when deciding their own NB positions.[2] Therefore, our model assumes that the incumbent NBs' optimal quality levels are pre-determined endogenously, but neither with the foresight of nor as a reaction to SB entries. This modeling approach differentiates our study from previous studies that assume vertical positions of NBs to be exogenous (Choi and Coughlan 2006; Sayman, Hoch, and Raju 2002; Scott Morton and Zettelmeyer 2004), and allows us to demonstrate interesting effects of the pre-committed NB quality levels on the vertical positioning of SBs. In particular, we find that a retailer introducing a line of multiple SBs should position the top-tier SB at a higher quality level than all incumbent NBs, when a large proportion of consumers exhibit moderate levels of willingness-to-pay for quality (i.e., an inverted-U shaped distribution). However, such a strategy is not optimal, if the proportion of highly quality conscious consumers is large, because the strongly attractive position at a high quality level is already taken by an incumbent NB. These seemingly counter-intuitive results reflect a retailer's strategic SB positioning behavior that takes into account not only the buyer characteristics but also the positions of competing brands in the category.

Our study complements more recent studies that consider NB manufacturers' strategic options in the presence of SBs. Nasser, Turcic, and Narasimhan (2013) analyze NB manufacturers' defensive strategies including quality positioning of an

[1] Du, Lee, and Staelin (2005) assume that an SB's quality can be higher or lower than that of a low-tier NB but is always lower than that of a top-tier NB.

[2] In an interview with the authors, one executive at a well-known CPG manufacturer said, ". . .. Thus, it would be schizophrenic for a national brand manufacturer to attempt to position its brand in response to or anticipation of each store brand introduction."

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