Research Note

The Variety of an Assortment: An Extension to the Attribute-Based Approach

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Abstract

In recent years, interest in category management has surged, and as a consequence, large retailers now systematically review their product assortments. Variety is a key property of assortments. Assortment variety can determine consumers' store choice and is only gaining in importance with today's increasing numbers of product offerings. To support retailers in managing their assortments, insight is needed into the influence of assortment composition on consumers' variety perceptions, and appropriate measures of assortment variety are required. This paper aims to extend the assortment variety model recently proposed by Hoch et al. (1999) in Marketing Science. It conceptualizes assortment variety from an attribute-based perspective and compares this with the product-based approach of Hoch, Bradlow, and Wansink (HBW). The attribute-based approach offers an alternative viewpoint for assortment variety. Attribute- and product-based approaches reflect basic conceptualizations of assortment variety that assume substantially different perception processes: a consumer comparing products one-by-one versus a consumer examining attributes across products in the assortment. While the product-based approach focuses on the dissimilarity between product pairs in an assortment, the attribute-based approach that we propose focuses on the marginal and joint distributions of the attributes. We conjecture and aim to show that an attribute-based approach suffices to predict consumers' perceptions of assortment variety.

In operationalizing the attribute-based approach, two measures of assortment variety are described and compared to product-based measures. These two measures relate to the dispersion of attribute levels, e.g., if all products have the same color or different colors, and the dissociation between attributes, e.g., if product color and size are unrelated. The ability of product-based and attribute-based measures to predict consumers' perceptions of assortment variety is assessed. The product-based measures (Hamming) tap the dissimilarity of products in an assortment across attributes. The attribute-based measures tap the dispersion of attribute levels across products (Entropy) and the dissociation between product attributes (1–Lambda) in an assortment. In two studies, we examine the correlations between these measures in a well-behaved environment (study 1) and the predictive validity of the measures for perceived variety in a consumer experiment (study 2).

Study 1, using synthetic data, shows that the attribute-based measures tap specific aspects of assortment variety and that the attribute-based measures are less sensitive to the size of assortments than product-based measures are. Whereas HBW focus on assortments of equal size, study 1 indicates that an extension to assortments of unequal size results in summed Hamming measures that correlate highly with assortment size. The latter is important when assortments of different size are compared. Next, we examine how well the measures capture consumers' perceptions of variety.

Study 2, a consumer experiment, shows that the attribute-based measures account best for consumers' perceptions of variety. Attribute-based measures significantly add to the prediction of consumers' perceptions of variety, over and above the product-based measures, while the reverse is not the case. Interestingly, this study also indicates that assortment size may not be a good proxy for perceived assortment variety.

The findings illustrate the value of an attribute-based conceptualization of assortment variety, since these measures (1) correlate only moderately with assortment size and (2) suffice to predict consumers' perceptions of assortment variety. In the final section we briefly discuss how attribute-based and product-based measures can be used in assortment management, and when product- and attribute-based approaches may predict consumers' variety perceptions. We discuss how an attribute-based approach can identify which attribute levels and attribute combinations influence consumers' perceptions of variety most, while a product-based approach can identify influential products. Both approaches have applications in specific situations. For instance, an attribute-based approach can identify influential attributes in an ordered, simultaneous presentation of products, while a product-based approach can assess the impact of sequential presentations of products better. In addition, we indicate how the random-intercept model estimated in study 2 can be further extended to capture the influence of, e.g., consumer characteristics.

(Retailing; Product Assortment; Variety Perception; Variety Measurement)