ASSORTMENT VARIETY: TOO MUCH OF A GOOD THING?

Barbara E. Kahn, Evan Weingarten and Claudia Townsend

ABSTRACT

Purpose – *The purpose of this chapter is to examine the connection between actual variety (the number of stock-keeping units (SKUs)) and amount of useable variety that the consumer perceives. The optimal combination for a retailer is to offer an assortment that maximizes the perceived assortment variety while minimizing the perceived inter-item complexity. Both measures are a function of the actual variety offered in an assortment but other factors such as attribute structure of the individual items, assortment organization, and individual differences can alter the way the actual variety is perceived.*

Design/methodology/approach – *The main methodology used in the chapter is a comprehensive, critical literature review of the empirical research on the topic.*

Findings – *We find that while assortments with a large number of SKUs are desirable for attracting consumers to the category, too large assortments can result in consumer frustration and confusion. On the*

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other hand, when assortments are small, the perceived variety or attention to the category may be limited.

Value/originality – *Our review shows ways a retailer can adapt to these challenges. First, we show that assortments are viewed in stages. In the first stage, high perceptions of variety are beneficial. When assortments are small, increasing perceived variety can be accomplished by increasing the number of subcategories within the assortment, adding in packaging cues, or using other emotional affective descriptors to further define options within the assortment. In the second or choice stage, too much variety can increase perceived complexity. Perceived complexity at this stage can be reduced by simplifying the complexity of the individual items within the assortment by increasing alignability of attributes, using a simplifying external organizational structure for the assortment, or helping consumers learn their preference.*

Keywords: Assortment; variety; retailing; consumer perceptions

INTRODUCTION

There are few more critical decisions that a retailer must make than determining which items or stock-keeping units (SKUs) to include in their product assortment. Studies of retailing shopping behavior have found that assortment variety is the third most important factor in choosing a physical store (behind location and price) (Arnold, Oum, & Tigert, 1983; Louviere & Gaeth, 1987). In online environments, where location effects can be largely mitigated, price and variety become even more important.

The assortment decision is multi-dimensional – affecting most business functions – because it requires trying to optimize consumer benefits while also respecting costs and profitability requirements, space or real estate (either physical or virtual) availability, operational and logistical issues including minimizing stock-outs, and customer service considerations (including policies about returns). The decision gets even more complicated when considering how assortments might vary depending upon whether the options are displayed online, on a mobile phone, or in a brick and mortar environment. Regional and even global considerations requiring differing cultural values and perspectives, and social media platforms add yet other dimensions.

Consumers' Perceptions

In this chapter, we focus on the product assortment decision from the consumer's perspective; specifically we look at consumers' perceptions of an assortment and factors that influence those perceptions. We make a distinction between the actual variety of an assortment, that is, the number of distinct SKUs in an assortment, and how those SKUs are processed and perceived by consumers. To understand how perceptions of the assortment differ from the actual variety, we need to recognize that the choice process is staged, and that assortments are likewise evaluated in stages.

Perceived Variety

The first stage, or the orientation stage (Russo & LeClerc, 1994), is where the consumer takes in the assortment as a whole. At this stage, we suggest that a critical component that makes an assortment more attractive is its perceived variety, or the amount of diversity that the consumers believe the assortment offers. Kahn and Wansink (2004) offer a scale that measures this construct that consists of the following four items[1]:

1. This assortment gives me a lot of variety for me to enjoy.
2. This assortment gives me at least one option I like.
3. This assortment offers more ways to enjoy it.
4. How much variety do you think there is in this assortment?

All else being equal, assortments that offer more perceived variety are preferred (Ratner & Kahn, 2002). Hoch, Bradlow, and Wansink (1999) point out that perceptions of high variety are particularly important when consumers "tastes are not well-defined or are changing. Higher perceived variety offers consumers an opportunity to learn about the different available options as well as maintain flexibility (Kahn & Lehmann, 1991). If consumers anticipate making choices over time, having more variety in an assortment is beneficial (Kahn, 1995; McAlister, 1982). Finally, as the second scale item reflects, greater perceived variety suggests a higher likelihood of preference matching.

Perceived Complexity

Whereas perceived variety at the assortment level is positive, it can become a liability if it results in confusion or decreased satisfaction due to choice overload when consumers are trying to choose from the assortment (Iyengar & Lepper, 2000). In this second stage of the choice process, where consumers are evaluating options (Henderson & Hollingworth, 1999), too

much variety can result in perceived confusion or complexity. Townsend and Kahn (2012) offer the following scale as a measure of perceived complexity at the item choice level:

1. This assortment is too complex to consider.
2. It is difficult to keep track of all of the various options in the assortment.
3. There are too many options in this assortment.

All else being equal, perceived complexity at the item choice level is a negative influence on decision making and can lead to lower overall satisfaction, delay in choosing or opting not to choose at all (Huffman & Kahn, 1998). In situations in which consumers need to justify their decisions, larger assortments can be seen as negative (Scheibehenne, Greifeneder, & Todd, 2010). Or similarly if consumers' do not have prior preferences, rather than seeing variety as an opportunity as mentioned above, they may feel overwhelmed by large assortments (Chernev, 2003).

The optimal combination for a retailer then is to offer an assortment that maximizes perceived *assortment* variety while minimizing perceived *inter-item* complexity. Both measures are a function of the actual variety offered in an assortment, but other factors such as the attribute structure of the individual options (Chernev, 2005; Gourville & Soman, 2005), the way options are organized within an assortment (Hoch et al., 1999; Kahn & Wansink, 2004), the way product information is organized (Huffman & Kahn, 1998), the relative symmetry in the frequencies of items (entropy) (Young & Wasserman, 2001), the proximity of similar items to each other (Hoch et al., 1999), or individual differences (Morales, Kahn, McAlister, & Broniarczyk, 2005) can alter the way the actual variety is perceived at either stage of the choice process.

For retailers, when issues of too much variety or too much choice first surface, an initial logical response is to cut SKUs. We first review several studies of reduced SKUs where we show that if done strategically, reduction in actual variety can increase sales (Boatwright & Nunes, 2001; Food Marketing Institute Study, 1993). Although reduction in SKUs is one way to deal with complex assortments, there are many instances where retailers are reluctant to cut SKUs. In these cases, we argue that the actual variety of an assortment is not as important as the perceived variety of the assortment. Consequently, we review research that identifies various factors that can optimize consumers' perceptions while holding actual variety constant. Specifically, we consider situations where: (1) actual variety in the assortment results in large perceived variety but also large perceived complexity, and (2) actual variety results in too little perceived variety.

We therefore consider ways that retailers can maintain the amount of actual variety that they choose to offer while, in the first case minimizing, the perceived complexity of large assortments or, in the second case, maximizing the perceived variety of small assortments.

REDUCING ACTUAL VARIETY

When actual variety becomes overwhelming or too costly to maintain, cutting SKUs may appear to be an obvious solution. An oft-cited example that examined this question is the famous "jam study" conducted by Iyengar and Lepper (2000). Sheena Iyengar, then a doctoral student at Stanford, tells the story of her fascination with Draegers in Palo Alto. Draegers was a gourmet food store that offered dozens of mustards, olive oils, and fancy balsamic vinegars among many other things. Much as she loved the store, she often left empty-handed. She concluded from this that there were too many options, and conducted a study to show the ill effects of too much variety. In her study, she set up a sampling table in the Draegers store and on alternate days stocked it with either 6 or 24 jam jars, each a different flavor. She then had research assistants who were disguised as Draegers employees count the number of people who came to each table to sample a jam, and the number of people who used a $1-off coupon to purchase one of the jams.

She found that more shoppers (60%) approached the table when it had 24 options as opposed to when it had only 6 jams (40%). However, only 3% of the shoppers at the 24-jam table used the $1 coupon, whereas 30% of the shoppers who had approached the table with only 6 jams used the coupon. Therefore, more sales were made at the table with fewer options (30% of 40%, or 12%) than at the table with more options (3% of 60% or 1.8%). The authors concluded that too much choice could have negative consequences: people were delaying making a choice or opting out of choice altogether, and were less satisfied with their decisions.

Cutting SKUs Can Result in Lost Sales

In spite of these experimental results, indiscriminant pruning of SKUs can result in lost sales. Borle, Boatwright, Kadane, Nunes, and Shmueli (2005) investigated the impact on customer retention resulting from a large-scale one-time assortment reduction across each and every category of an online

grocery/delivery service. The extent of the assortment reduction varied from 24% to 91% of items within a category. The results were disappointing: overall store sales declined. There were decreases in both store visits and amount purchased per visit, with the former resulting in greater sales losses than the latter. Studying the results more deeply revealed that the less-frequently purchased categories were more adversely affected by the reduction in assortment than other categories.[2]

In recent years, other retailers have suffered the same consequences from assortment reduction as identified by Borle et al. (2005). In 2009, Walmart removed thousands of often-marginal SKUs from its shelves to reduce clutter and complexity and to improve supply chain efficiencies. However, after years of sales declines at U.S. stores, the company announced in 2011 that it was bringing back approximately 8,500 items that had been removed. Walmart was so concerned that it may have lost customers from the assortment cuts that it featured in-store displays noting "It's Back" on items that were returned to the shelves.

But is it always the case that reducing actual variety reduces sales? Obviously, not as Iyengar and Lepper's (2000) "jam study" suggests. In fact, several stores carrying large assortments have been able to strategically remove SKUs resulting in no change in sales and, in some cases, even a sales increase.

Cutting SKUs But Increasing Sales

In 1993, the Food Marketing Institute (FMI) conducted one of the first experiments that showed increases in sales from strategic assortment cuts. The experimenters found that reducing the number of low-selling SKUs in supermarkets by as much as 54% could result in no loss of sales, or in some cases actually a sales increase. The intuition behind these results is that removing redundant or unimportant SKUs decreases confusion in the category.

The FMI studies suggested that it is important to determine which types of SKUs were detrimental to the overall assortment so that these items could be cut. Boatwright and Nunes (2001) determined that in frequently purchased categories, reducing the number of low-selling SKUs could increase sales across 42 categories studied. They discovered that purchase behavior differed by the type of SKU that was cut. Whereas consumers showed divergent reactions to reductions in product size options, they reacted positively to reductions in SKUs that were perceived to be

redundant or not related to their favorite brands and flavors. In other words, whereas it might be perceived as negative to cut an entire brand or an entire size, cutting some combination of sizes or brands helps reduce the "clutter" on the shelf.

Part of the reason for these divergent results in the effectiveness of cutting SKUs on resulting sales is because of the viability of the specific SKUs that were cut. If SKUs are cut that few people purchase, are redundant, or are easily substitutable, overall sales should not decline. Further retailers need to be careful not to cut SKUs that will cause customers to leave their store and shop elsewhere.

Broniarczyk, Hoyer, and McAlister (1998) ran a few experiments to help understand the FMI (1993) results of the effectiveness of cutting SKUs for increasing sales. They suggested that consumers used heuristic cues to judge assortment variety and as long as these cues remained intact, consumers would not notice the SKU reductions. The heuristic cues that they found matter are (1) category space needs to remain constant – if the physical space devoted to the category is diminished, then consumers notice, and (2) if only low-preference items are reduced then consumers do not notice (with the caveat that if someone's favorite is deleted, even if it is generally a low-preferred item, then that consumer will see a diminished assortment).

Perceptions *of Variety Can Differ From Actual Variety*

The Broniarczyk et al. (1998) results suggest that perceptions of variety can stay the same even if actual variety is reduced. This idea that perceptions of variety are different than actual variety was very much the point of a series of experiments conducted by Kahn and Wansink (2004).

Ironically, at approximately the same time that Iyengar and Lepper were running their jam studies on the west coast, Kahn and Wansink (2004) were running jelly bean experiments on the east coast using assortments than had either 6 or 24 flavors. There were several differences between the studies in spite of the coincidence of number of options offered being the same. In the Kahn and Wansink studies, children and adults were allowed to take as many jelly beans as they desired (no purchase required). In this setting, the assortment with 24 flavors resulted in far more jelly beans being selected (14 on average) as opposed to the assortment with 6 flavors where only 5.9 jelly beans were selected on average. So, in this case more variety increased consumption, which is consistent with insights from nutritionists (more

choices make us eat more), economists (variety is preferred to more of the same), and statisticians (higher likelihood of finding something we like).

The jelly bean experiment, though, was not designed to show that more actual variety increased consumption, but rather to show that perceived variety was the important consideration, not actual variety. The full design contained four cells. In addition to varying the number of flavors of jelly beans between conditions, the study also varied whether the assortments were presented in an organized or disorganized fashion. When there were 24 options offered, participants chose more when the assortment was organized (14 as much above) but they chose far fewer (only 8.7 on average) when the assortment of flavors was scrambled. The opposite occurred when there were only six flavors; more were chosen in the scrambled as opposed to the organized condition. Further analyses proved that the organization differences affected the perceived variety and that it was not the actual variety, but rather the perceived variety inherent in the assortments that predicted the quantities chosen.

We next consider additional factors that influence assortment variety perceptions even while holding actual number of SKUs constant. We consider these factors in two contexts: (1) when retailers need to decrease perceptions of complexity and (2) when retailers need to increase perceptions of variety, in both cases while holding actual variety constant.

STRATEGIES FOR DECREASING PERCEPTIONS OF COMPLEXITY WHILE HOLDING ACTUAL VARIETY CONSTANT

The Iyengar and Lepper (2000) experiment suggests that high variety assortments are attractive (more participants approached the table with more jams that with fewer jams), but can also result in higher levels of choice deferral. We suggest that this contradiction in the appeal of high variety assortments results because consumers evaluate the assortment in two stages: the assortment stage and the choice stage. At the assortment stage, perceived variety is attractive. However, when customers move to the choice stage, the complexity of the individual items and the difficulty in comparing one item to another becomes a factor. Whereas perceived variety is addressed at the assortment level, when all of the options are assessed as a whole, measures of perceived similarity or perceived complexity are assessed at the choice level from comparisons made between items.

Large assortments can be perceived negatively for two reasons at the choice stage. First, large assortments can set high expectations about the likelihood of finding the perfect option. Heitmann, Herrmann, and Kaiser (2007) found that large assortments set the stage for higher anticipated regret (about the options not chosen) and higher anticipated evaluation costs. Similarly, Diehl and Poynor (2010) suggest that when an assortment is large, consumers' expectations for meeting their own preferences are increased. However, if the exact right match is not subsequently found then satisfaction is decreased. Further, just the knowledge that an option comes from a large assortment (as opposed to a smaller assortment) can result in decreased satisfaction with the (same) option.

Second, large choice sets can be perceived negatively at the choice stage if making a final choice seems difficult or complex. In this situation, high actual variety, which results in high perceived variety at the assortment level, can result in high perceived complexity at the inter-item level. The degree of perceived complexity can vary depending upon several aspects of the assortment. First, perceived complexity should vary not only as a function of number of options in an assortment (the actual variety of the assortment) but also as a function of the complexity or attribute structure of the items within the assortment. Second, perceived complexity varies as a function of consumers' preference structure and how well it is satisfied by the assortment. If consumers do not have clear preferences, the manner in which a retailer helps them learn their preferences can affect perceptions of complexity. Finally, perceived complexity of an assortment can vary as a function of the external structure imposed on the assortment.

Item Complexity Within the Assortment

Whether increasing perceptions of variety has a positive (attractive) or negative (overwhelming) effect on consumer behavior largely depends on the size of the assortment and the complexity of the items within the assortment. Hoch et al. (1999) show that perceived variety of an assortment varies as a function of the multiattribute structure of the options within the assortment, the more the options differ from each other (up to a point), the higher the perceived variety of the assortment. The spatial location of these items, whether similar items are close to each other or are far apart, can also affect perceived variety. Greifeneder, Scheibehenne, and Kleber (2010) found these multi-attribute differences among items within the assortment affected perceptions as a function of the size of the overall assortment.

When choice sets were large, and the alternatives were differentiated on many attributes, the choice sets could seem complex and overwhelming. However, if the alternatives were differentiated only on a few attributes, even large choice sets were usually not overwhelming. By offering a large assortment but highlighting differences on only a select number of attributes retailers can assure they offer enough variety to attract consumers without overwhelming them with complexity.

External Factors Influencing Item Complexity

This conclusion seems to contradict the findings of Iyengar and Lepper (2000) who found choice overload with jams, a product category differing only on one attribute, that of flavor. However, Greifeneder et al. (2010) suggest that the complexity found in that experiment might be due to the complexity in the market at the time of the experiment, suggesting more broadly that other context factors might affect perceptions of variety and complexity. Consistently, Menon and Kahn (1995) found that stimulation that occurs from the environmental context interacts with the stimulation experienced from the choice process. Boyd and Bahn (2009) offer one more moderator for how consumers view large assortments. They found that when consumers perceive higher risk inherent in a choice (i.e., a stricter return policy for example), higher variety assortments were preferred because they offer a greater sense of confidence in choice and because consumers use more systematic processing to make this choice. Retailers are, therefore, cautioned to consider not just the complexity offered in their products, but to ensure that the environment is simple and not to add unnecessary interference.

Attribute Properties and Complexity

Beyond just the number of attributes highlighted or on which the options differ, the structure of these attributes, and ease with which consumers can compare one item to another, affect the difficulty in making a choice, and hence the perceived difficulty in dealing with the variety. One factor that has been shown to dramatically affect perceptions of complexity is the alignability of attributes.

Gourville and Soman (2005) define an "alignable" assortment as one in which the options within the assortment differ along a single dimension where choosing requires only within-attribute tradeoffs, for example, paying more money for a lighter or more powerful product. Size is an alignable attribute. Nonalignable assortments cannot be placed on a single dimension

and are defined as those that demand between-attribute tradeoffs such as choosing among colors or special features.

Since nonalignable attributes require more cognitive effort, as well as allow for more regret about the non-chosen options, assortments containing those types of items result in more negative reactions including less satisfaction, lower willingness-to-pay, and more time required to choose (Herrmann, Heitmann, Morgan, Henneberg, & Landwehr, 2009). To eliminate the negative consequences of the nonalignable assortments, Herrmann et al. (2009) suggest that the information be presented in a simple fashion, thus helping to align the nonalignable attributes, a difficult but not impossible task. For example, the retailer Gap tries to make a nonalignable attribute like the cut of a jean more alignable by showing how one relates to the other by exposing the dimensionality underlying the cut. Another way to make nonalignable attributes, such as flavor, more alignable is by putting them on a similar scale that is alignable, such as healthiness or calorie count.

Another aspect that affects the perceived complexity of assortments that are comprised of options with nonalignable attributes is whether those attributes are perceived to be complementarity or not (Chernev, 2005). Attributes are defined as complementary if adding them together would yield a superior product, such as cavity prevention or teeth whitening. Noncomplementary attributes, such as flavor or color, would not result in a superior combination as one attribute level is a replacement for the other. Chernev (2005) finds that the degree to which the attributes complement and reinforce each other (vs. those that do not necessarily complement each other) affects likelihood of choice deferral. He argues that choice is deferred more often when attributes are complementary rather than noncomplementary. The reason is that when attributes are complementary the features are perceived to be equally important, but when the attributes are non complementary, some of the features are perceived to be more important than others, making it easier to choose.

Consumers' Preferences for Items within the Assortment

Broniarczyk et al. (1998) and Kahn and Lehmann (1991) show that assortments, regardless of the amount of variety offered, are preferred if they include consumers' most preferred items. The actual variety is irrelevant if it is easy to just choose one's favorites. In some sense the variety of the assortment fades into the background and the issue becomes

how easy it is to get to the ones you want. This suggests that if the retailer can help consumers learn their preferences then they will be able to deal more effectively with large variety assortments.

Huffman and Kahn (1998) studied effective ways for retailers to help consumers learn their preferences from high variety assortments. They found when assortments are large because assortments contain many options that vary on many dimensions, consumers can better appreciate the variety if information that describes the various options is presented on an attribute basis rather than by alternative. For example, if consumers are choosing the best customized sofa, they will experience less perceived complexity, more satisfaction with the choice process, and be more willing to make a choice if the information is broken down by attribute, for example, arm style, number of pillows, covering material, etc. and they are then shown the various levels per attribute, than if they are shown a complete sofa with various choice options highlighted.

The attribute style of presentation is frequently offered online, where drop-down menus allow consumers to sort through the various attribute levels and indicate preferences, and then a completed alternative is created. Furniture stores, on the other hand, frequently show a exemplar sample sofas or living arrangement, and ask consumers to figure out their preferences by indicating changes to the showroom model. One way then for brick and mortar stores to diminish perceived complexity with these high variety assortments is to offer in-store technology that can be used to illustrate the options on an attribute basis.

In addition, a moderate level of consumer involvement in indicating preferences is optimal. Huffman and Kahn (1998) examine three levels of customer involvement in the preference formation process. In the first level, consumers are merely shown the attributes and the various levels available. For example, consumers would be shown the various leg styles that they can consider. In the second level, consumers are asked to formulate preferences about various attribute levels, that is, which covering do you prefer? In the third level, consumers are asked not only to indicate preference levels on attributes, but to also make trade-offs as to which attributes are more important. Then they are asked to make decisions based on the most important attributes. The results show the first level is not involving enough, whereas the third level, involving trade-offs and more systematic processing, is too taxing.

Even if consumers do not have a particular favorite item, the level of quality of the alternatives in a choice set can influence a consumer's preference for high-variety versus low-variety assortments. Chernev and

Hamilton (2009) show that if consumers do not have a specific favorite but understand that the average quality of the items within an assortment can vary from retailer to retailer, then the size of the assortment matters in a counter-intuitive fashion. If the average quality of the items within the assortment is high, consumers prefer smaller assortments. Thus the relationship between assortment size and option attractiveness is concave, such that the marginal impact of assortment size on choice decreases as the attractiveness of the options increases. This effect is even stronger when the choice task gets harder (e.g., more attributes per alternative, thus making the decision process more complex).

Another aspect that affects whether or not large assortments are likely to be seen as complex is how many items a consumer is likely to buy at one purchase occasion. All else being equal, the more items a consumer is likely to purchase at a single purchase occasion or the more likely that a consumer is looking to seek variety over a time horizon, the more likely variety is seen as positive. Simonson and Winer (1992) showed when consumers purchase more at one time, they choose more variety, and thus higher variety assortments have an advantage.

Chernev (2008) shows that when consumers are uncertain about their preferences, they prefer assortments in which the number of available options matches the desirable purchase quantity. So, for example, if a consumer had decided to buy five flavors of yogurt, she would have a preference for an assortment that offered five flavors. This preference exists because the match between the number of needed options and the number of alternatives available makes cognitive processing and decision making easier. This is easily true when the number of flavors matches the goal quantity size. However, this idea can be generalized for larger assortments as well if the assortment can be partitioned into groups of equally preferred items. If for example, a consumer has five equally preferred flavors from a large assortment and the goal is to buy five items, then that match makes choice easier and thus presumably the variety offered is positive. On the other hand, if there is a mismatch between the number of options desired and some easy-to assign choice rule, then too much variety can be become overwhelming. These purchase quantity goals can be influenced by the retailer through promotion strategies (e.g., buy three get a fourth at half price) or through loyalty programs.

Although the results were not tested specifically with regard to assortments, Berger, Draganska, and Simonson (2007) found an interesting result about branded product lines that might be relevant. They found that given a purchase is going to be made, brands that had more variety in their

line, were perceived as having great category expertise or core competency, which in turn increased perceived quality and likelihood to purchase. The implication is that if a brand has finer distinctions in their line (as indicated by a wider variety), they have invested in learning the details of the category, which is costly, and thus they have more to lose if buyers are subsequently disappointed by the quality. Thus in this case, it is suggested that variety is a signal for quality. This signal of expertise then would only hold in assortments where all the items are related to each other (e.g., all Thai food) and would not hold for assortments with mixed product types (e.g., mixture of Thai and Chinese food).

External Structure and Organization Imposed on an Assortment

External structure, such as whether the assortment is organized or disorganized, whether and how it is split into sub categories, and how the options are aligned has been shown to affect perceptions of variety and complexity. We review this literature and consider how retailers can use this knowledge to decrease complexity perceptions without reducing perceptions of variety.

Organization and Processing

Hoch et al. (1999) suggest that organizational structure and processing style (either holistically (scanning the display broadly, as a whole) or analytically (assessing pairwise judgments between objects, or considering the underlying dimensions of an object within the assortment)) can affect perceived variety. They find that if assortments are processed analytically, then organized displays offer more variety, however, if processing is holistic, then random displays are seen to have more variety. The findings by Hoch et al. (1999) provide another reason for the results found in the Kahn and Wansink (2004) study discussed earlier. In that study, when the assortment was small (six flavors) and could be processed holistically, the scrambled condition offered more perceived variety and thus participants chose more. In the larger assortment, 24 flavors, the assortment was likely processed more analytically, and thus the organized assortment offered more perceived variety and participants chose more.

Organization and Structural Congruency

One easy way to think about organizing the items within an assortment, especially online where assortments can be easily sorted, is to organize the

shelf according to the way consumers categorize the products in their own minds. Morales et al. (2005) find that for familiar categories, congruency between a consumer's internal categorization structure and the external store layout leads to higher perceptions of variety and higher satisfaction with product choices. For example, if consumers think about wines by grape varieties and the store organizes wines by brand name, consumers will experience less satisfaction with the choice process and take more time to process. Eye-tracking research has found that when consumers can easily find an item within an assortment they experience positive affect, which makes them more likely to enjoy the shopping process.

Morales et al. (2005) suggest a caveat to this matching process however. If consumers are able to sort through an assortment very quickly and get to their desired option, they will be less likely to appreciate the assortment variety. Although they will be able to purchase their desired option, they will show less enthusiasm for the overall assortment, and clearly are less likely to purchase unplanned items. Thus sorting filters that allow consumers to easily get to the objects they want, but that are not a perfect match with shopping goals such that they allow consumers to view some of the assortment are probably better for retailers as they can stimulate more browsing.

Poynor and Wood (2010) found similar results to the Morales et al. (2005) findings, but through a different mechanism. Rather than relying on internal categorization structures, Poyner and Wood (2010) show that consumers learn the structure of a category by exposure to it. Then when they are reexposed to the category, if the categorization scheme remains as they expect (congruent), low knowledge consumers are more satisfied than when the scheme is unexpected (incongruent). This is not true, though, for consumers who have high knowledge about the category. In this case, the unexpected categorization knocks them out of complacency and they benefit more from and are more satisfied with the shopping experience.

Partitioning

Another type of structure that can be imposed on an assortment is a partitioning, or subcategorization, structure. Fox, Ratner, and Lieb (2005) show that partitioning of the choice set can affect choices and satisfaction. If a choice set is partitioned into subcategories this categorization can affect both what is chosen and how much is chosen from each category. People have a tendency to match their choice patterns to the categorization structure. In one of their studies for example, they asked participants to choose five candies from an assortment that offer four different types of

candies – however the candies were shown to them in three bowls. Two of the three bowls had just one kind of candy, whereas the third bowl had a mixture of the other two types. Participants' choice sets on average contained more of the candies that were in the uniform flavor bowls than those that were in the mixed bowls suggesting that the way the candies were grouped or partitioned in the choice set affected their final choice. This finding suggests that one way to help diminish the complexity of a large choice set is to partition in it in such a way that helps consumers achieve their own choice goals. Partitions that run counter to consumers' goal may increase complexity. Of course the environment can shape consumers' goals as well, for example, buy three get a fourth free.

Horizontal versus Vertical Alignment

Graphic elements can be used to cause the consumer to scan the assortment either horizontally or vertically. Deng, Kahn, Unnava, and Lee (2012) have found that this factor, whether the consumer scans horizontally or vertically, can affect perceptions of assortment variety and subsequently option preferences and choices. During the first stage of choice, at the assortment level, viewing the assortment horizontally leads to more perceived variety than viewing the assortment vertically. This is true because our eyes are positioned horizontally on our faces and this leads to binocular vision, which results in horizontal fields being processed more easily. This perceptual fluency for horizontal fields allows more information to be gleaned quickly, and that results in greater perceptions of variety and more options deemed acceptable and therefore considered. However, at the inter-item choice level, horizontal alignment leads to equal-quality preferences whereas vertical alignment leads to differential-quality preferences. Therefore, at the item choice level, choosing a single option is easier when the scanning is vertical, but choosing multiple acceptable items is easier when the scanning horizontal.

Visual/verbal

A final external structural factor that affects both perceived variety and perceived complexity is whether the assortment is depicted visually or verbally. This factor is particularly relevant for viewing online assortments. Townsend and Kahn (2012) find, holding all product information constant, that assortments that are described using images are perceived to have more variety than assortments that are described verbally. This higher perceived variety at the assortment level makes visual assortments more attractive and more preferred. However, at the inter-item choice level, visual depiction

leads to higher levels of perceived complexity than verbal depiction when assortments are large. This higher level of perceived complexity results due to several reasons. First, visual depictions allow for interactions to be easily recognized (Veryzer & Hutchinson, 1998) which increases complexity. Verbal depictions of items are processed in a piecemeal fashion that does not lend itself easily to considering interactions. Second, verbal depictions require more time to process than visual depictions. When assortments are large and complex, this additional time spent lowers the perceived complexity. Finally, Townsend and Kahn (2012) use an eye tracking study to show that verbal assortments are processed more systematically, more like reading, than are visual assortments, which are viewed in a scattershot way. The more systematically the assortment is processed, the more information can be gathered and fewer options are skipped over. This lessens the perceived complexity.

All of these methods discussed are tools that the retailer can use to reduce the perceived complexity that might result from large assortments. Another problem that retailers may face though is that smaller assortments may not attract enough attention because they do not seem to offer enough choice. In this case, retailers may want tools to increase the perceived variety of the smaller assortments. We consider these strategies in this final section.

HOLDING ACTUAL VARIETY CONSTANT AND INCREASING PERCEIVED VARIETY

While smaller assortments are usually less complex than larger assortments, thus making decision making easier, they may not offer enough variety to attract the consumer. In this case, the retailer may want to consider strategies that increase the stimulation, attention, and excitement that a larger assortment can generate. One increasingly popular way to attract attention to small assortments is to offer an expert or highly curated collection. Steve Jobs with Apple stores and Mickey Drexler with J.Crew have famously simplified their assortments, while upping the design and "cool" factor. Similarly, One Kings Lane, an online retailer specializing in home furnishing, attracts consumers through their curated assortments. Although this method can be effective, it does depend on the creativity of the designing merchant, and the match between the designer's taste and the consumers' preferences.

Other strategies that increase the perceived variety of an assortment and that do not depend on a specific merchant's magic include the mere

categorization effect, the effect of packaging cues, display ''tricks,'' and creative labeling. Each of these is described below.

Mere Categorization Effect

Mogilner et al. (2008) show that the mere presence of categories can positively increase satisfaction with an assortment for consumers who are unfamiliar with a category. They show that the more categories that are present, the higher the perceived variety of the assortment, which in turns allows for the perception that there are more likely to be options that meet one's needs. These categories can even be vague or not particularly descriptive and the effect will still hold. They label this the ''mere categorization effect.'' This effect does not hold for consumers who are familiar with the assortment.

Similarly to the mere categorization effect, priming categorization mindsets can also affect the perceived variety of a subsequently viewed assortment. Ülkümen, Chakravarti, and Morwitz (2010) show that when consumers are exposed to assortments that are either broadly or narrowly categorized, those categorizations can influence subsequent perceptions of other assortments. Ülkümen et al. (2010) explain that a broad categorization includes fewer groups, say red and white for wine, while a narrow categorization includes more groups such as White Italian, White French, etc. When consumers are primed with broad categorization they base their subsequent judgments on fewer pieces of information whereas consumers exposed to narrow assortments employ multiple pieces of information. Although not explicitly tested in the research, their results seem to indicate that priming narrow categorization would result in consumers seeing more but smaller item groupings and thus perceiving more variety in the assortment.

Changing Perceived Variety Through Packaging Cues

Packaging design is not only able to change perceptions of the product within the package, but if designed as a collection of items within an assortment, it can also affect assortment perceptions. Roehm and Roehm (2009) show that when packages within an assortment have less uniformity (different label color, shape, and font) as opposed to more uniform packaging (only different label colors), consumers rate the packages as more

novel, more complex, and more arousing. In their studies, these more arousing packaging cues result in less variety seeking behavior. In other words, consumers are more likely to pick a favorite and stick with it across purchase occasions. These results suggest that more arousing, differentiated packaging should increase the perceived variety of an assortment, but also limits the perceived acceptability of other options. Although not tested in this research, packaging cues are also likely to be very effective at creating categories within the assortment. As mentioned above, the mere presence of categories can also increase perceived variety.

Another manner in which the design of the packaging for an assortment may influence perceptions of variety is through the relative use of images versus text. As mentioned above, presenting information in images rather than words allows for more easy identification of attribute interactions (Veryzer & Hutchinson, 1998). When consumers are able to recognize not just the various attributes on which options vary, but also the interactions of these attributes, this increases perceptions of variety (Townsend & Kahn, 2012. While their studies did not speak to this issue directly, the studies by Townsend and Kahn (2012) suggest that packaging that is more visual and less verbal in describing the products will help a small assortment appear to have greater variety.

Related to packaging cues but not quite the same thing is the use of display "tricks" to increase perceptions of variety. For example, sometimes retailers, gyms, or restaurants give the illusion of more variety by using mirrors effectively or by using display cases with false bottoms (Schwartz, 2004). As mentioned earlier, along this lines, Broniarczyk et al. (1998) found that perceived variety was a function of the total space devoted to the category. Thus perceived variety of an assortment can be increased without changing the number of alternatives offered by just increasing the physical space allotted to the category.

Color Names/Labels

Another way to increase the perceived variety of small assortments is to describe the options within the assortment with interesting-sounding colors and flavor names. There are numerous ways to do this. Recently, several paint companies have experimented with increasing the attention to their paints by upping the emotional content of the paint names. The Valspar paint company has tried to capture consumers' attention by distinguishing their color names with a story, or by using names that evoke a memory or an

emotion. For example, rather than name a paint brown, they have anointed it as a "weekend in the country." Benjamin Moore has a color called "Old World Romance."

Ace Hardware has taken this naming convention to a new level by associating their paint colors not only with fanciful names, but also with a "soul paint." Each color in Ace premium line of paints is associated with a specific human model who embodies the paint color both in clothing and in flesh tone.

Miller and Kahn (2005) show that consumers respond to fanciful color or flavor names for several reasons. For ambiguous names that do not provide any descriptive value, such as the flavor "frost," or the nail polish color "dork," consumers respond positively because they expect marketing messages to convey useful information. If the message is not informative or does not conform to expectations, consumers search for the reason for the deviation. This additional search and processing results in additional positive attributions about the product, increases the perceived variety of the assortment and can yield positive purchase intentions.

If the name is not obvious at first, such as "weekend in the country," but the puzzle can be resolved with further thought, "Ah, a weekend in the country may involve mud, hence the color brown," the consumer experiences a positive feeling for solving the incongruity. This positive feeling leads to positive assessments of the assortment variety. Hence, embellishing product descriptors is another way to add perceived variety to small assortments.

CONCLUSION

Creating attractive product assortments is a key strategic goal for most retailers. However, managing customers' perceptions about an assortment can be tricky. While assortments with a large number of SKUs may be desirable for attracting consumers to the category, and may result in higher perceptions of variety, they may also become frustrating and confusing when consumers are trying to choose a single item. On the other hand, when assortments are small, and it is not confusing or difficult to choose among the limited selection, the perceived variety or attention to the category may be limited and less enticing.

In this chapter we have shown ways a retailer can adapt to these challenges. First, we have postulated that assortments are viewed in stages. In the first stage, the assortment is viewed as a whole, and here it is desirable

to have high perceptions of variety. Once attracted to the category, consumers soon proceed to the second stage and it is here they compare alternatives within the category. At this level, too much actual variety may increase perceptions of complexity.

The obvious first strategy for large assortments is to consider cutting SKUs. Cutting SKUs can be effective if done strategically. The key is to cut low preference items, cut redundancy, and eliminate clutter. However, sometimes, reducing SKUs results in loss sales. In this case, it is preferable to reduce perceived complexity due to a large number of SKUs by managing other aspects of the assortment.

Holding actual variety constant, perceived complexity can be reduced through several options. One way to reduce perceived complexity is to deal with the complexity of the individual items within the assortment. For example, nonalignable attributes can be more difficult to process. Attempts to increase the alignability of alternatives within an assortment, for example by lining them up on a single dimension – put different flavors of soup on a single healthy, nutrition or calorie scale – can help consumers deal with the complexity. Other ways to reduce perceived complexity is by helping consumers learn their preferences, or by using external structural considerations on the assortment.

On the other side, small assortments can be less exciting and consumers may not be attracted at all. Here the goal is to increase perceived variety. Increasing the number of categories or subcategories within the assortment can increase perceived variety of assortments. Or, it is possible to alter packaging cues, which can heighten the associations between items and increase overall variety. Finally, embellishing color names or other descriptors can also increase perceived variety. AU :5

UNCITED REFERENCES

Allenby, Arora, and Ginter (1998); Boatwright, Borle, and Kadane (2003).

NOTES

1. Most researchers use at least a subset of these measures for their construct of perceived variety with the exception of Mogilner, Rudnick, and Iyengar (2008) who add an item that measures similarity of the options within the assortment (reverse scored).

2. The authors observed though that sales did not decline in every category and in fact, in some categories, purchase frequency increased.

REFERENCES

Allenby, G. M., Arora, N., & Ginter, J. L. (1998). On the heterogeneity of demand. *Journal of Marketing Research*, *35*(August), 384–388.

Arnold, S. J., Oum, T. H., & Tigert, D. J. (1983). Determinant attributes in retail patronage: Seasonal, temporal, regional and international comparisons. *Journal of Marketing Research*, *20*(May), 149–157.

Berger, J., Draganska, M., & Simonson, I. (2007). The influence of product variety on brand perception and choice. *Marketing Science*, *26*(4), 460–472.

Boatwright, P., Borle, S., & Kadane, J. B. (2003). A model of the joint distribution of purchase quantity and timing. *Journal of American Statistical Association*, *98*, 564–572.

Boatwright, P., & Nunes, J. C. (2001). Reducing assortment: An attribute-based approach. *Journal of Marketing*, *65*(July), 50–63.

Borle, S., Boatwright, P., Kadane, J. B., Nunes, J. C., & Shmueli, G. (2005). The effect of product assortment changes on customer retention. *Marketing Science*, *24*(4), 616–622.

Boyd, D. E., & Bahn, K. D. (2009). When do large product assortments benefit consumers? An information-processing perspective. *Journal of Retailing*, *85*(3), 288–297.

Broniarczyk, S. M., Hoyer, W. D., & McAlister, L. (1998). Consumers' perceptions of the assortment offered in a grocery category: The impact of item reduction. *Journal of Marketing Research*, *35*(May), 166–176.

Chernev, A. (2003). When more is less and less is more: The role of ideal point availability and assortment in consumer choice. *Journal of Consumer Research*, *30*(September), 170–183.

Chernev, A. (2005). Feature complementarity and assortment in choice. *Journal of Consumer Research*, *31*(March), 748–759.

Chernev, A. (2008). The role of purchase quantity in assortment choice: The quantity-matching heuristic. *Journal of Marketing Research*, *45*(April), 171–181.

Chernev, A., & Hamilton, R. (2009). Assortment size and option attractiveness in consumer choice among retailers. *Journal of Marketing Research*, *46*(June), 410–420.

Deng, X., Kahn, B. E., Unnava R., & Lee, H. (2012). *A "wide" variety: The effects of horizontal vs. vertical product display on perceived assortment variety*. Working Paper. AU :6

Diehl, K., & Poynor, C. (2010). Great expectations?! Assortment size, expectations, and satisfaction. *Journal of Marketing Research*, *47*(April), 312–322.

Food Marketing Institute. (1993). *Variety or duplication: A process to know where you stand.* Prepared by Willard Bishop Consulting and Information Resources, Inc., in cooperation with Frito-Lay.

Fox, C. R., Ratner, R. K., & Lieb., D. S. (2005). How subjective grouping of options influences choice and allocation: Diversification bias and the phenomenon of partition dependence. *Journal of Experimental Psychology: General*, *134*(4), 538–551.

Gourville, J. T., & Soman, D. (2005). Overchoice and assortment type: When and why variety backfires. *Marketing Science*, *24*(3), 382–395.

Greifeneder, R., Scheibehenne, B., & Kleber, N. (2010). Less may be more when choosing is difficult: Choice complexity and too much choice. *Acta Psychologica*, *133*, 45–50.

Heitmann, M., Herrmann, A., & Kaiser, C. (2007). The effect of product variety on purchase probability. *Review of Managerial Science*, *1*(2), 111–131.

Henderson, J. M., & Hollingworth, A. (1999). The role of fixation position in detecting scene changes across saccades. *Psychological Science*, *10*, 438–443.

Herrmann, A., Heitmann, M., Morgan, R., Henneberg, S. C., & Landwehr, J. (2009). Consumer decision making and variety of offerings: The effect of attribute alignability. *Psychology & Marketing*, *26*(4), 333–358.

Hoch, S. J., Bradlow, E. T., & Wansink, B. (1999). The variety of an assortment. *Marketing Science*, *18*(4), 527–546.

Huffman, C., & Kahn, B. E. (1998). Variety for sale: Mass customization or mass confusion? *Journal of Retailing*, *74*(4), 491–513.

Iyengar, S. S., & Lepper, M. R. (2000). When choice is demotivating: Can one desire too much of a good thing? *Journal of Personality and Social Psychology*, *79*(December), 995–1006.

Kahn, B. E. (1995). Consumer variety-seeking among goods and services: An integrative review. *Journal of Retailing and Consumer Services*, *2*(3), 1398.

Kahn, B. E., & Lehmann, D. R. (1991). Modeling choice among assortments. *Journal of Retailing*, *67*(3), 274–299.

Kahn, B. E., & Wansink, B. (2004). The influence of assortment structure on perceived variety and consumption quantities. *Journal of Consumer Research*, *30*(March), 519–533.

Louviere, J. J., & Gaeth, G. (1987). Decomposing the determinants of retail facility choice using the method hierrchical information integration: A supermarket illustration. *Journal of Retailing*, *63*(Spring), 25–49.

Menon, S., & Kahn, B. E. (1995). The impact of context on variety seeking in product choices. *Journal of Consumer Research*, *22*(December), 285–295.

Miller, E. G., & Kahn, B. E. (2005). Shades of meaning: The effect of color and flavor names on consumer choice. *Journal of Consumer Research*, *32*(June), 86–92.

Mogilner, C., Rudnick, T., & Iyengar, S. S. (2008). The mere categorization effect: How the mere presence of categories increases consumers' perceptions of assortment variety and outcome satisfaction. *Journal of Consumer Research*, *35*(August), 202–215.

Morales, A., Kahn, B. E., McAlister, L., & Broniarczyk, S. M. (2005). Perception of assortment variety: The effects of congruency between consumers' internal and retailers' external organization. *Journal of Retailing*, *81*(2), 159–169.

Ratner, R. K., & Kahn, B. E. (2002). The impact of private versus public consumption on variety-seeking behavior. *Journal of Consumer Research*, *29*(September), 246–257.

Roehm, M. L., & Roehm, H. A., Jr. (2009). The relationship between packaging uniformity and variety seeking. *Psychology & Marketing*, *27*(12), 1122–1133.

Russo, J. E., & LeClerc, F. (1994). An eye-fixation analysis of choice processes for consumer nondurables. *Journal of Consumer Research*, *21*(September), 274–290.

Scheibehenne, B., Greifeneder, R., & Todd, P. M. (2010). Can there ever be too many options? Meta-analytic review of choice overload. *Journal of Consumer Research*, *37*(October), 409–425.

Schwartz, B. (2004). *The paradox of choice: Why more is less*. New York, NY: Ecco.

Simonson, I., & Winer, R. S. (1992). The influence of purchase quantity and display format on consumer preference for variety. *Journal of Consumer Research*, *19*(June), 133–138.

Townsend, C., & Kahn, B. E. (2012). *The "visual preference heuristic" and the influence of visual versus verbal depiction on perceived assortment variety*. Association for Consumer Research Annual North American Conference, Vancouver, BC.

Ülkümen, G., Chakravarti, A., & Morwitz, V. G. (2010). Categories create mindsets: The effect of exposure to broad versus narrow categorizations on subsequent, unrelated decisions. *Journal of Marketing Research*, *48*, 659–671.

Veryzer, R. W., & Hutchinson, J. W. (1998). The influence of unity and prototypicality on aesthetic response to new product designs. *Journal of Consumer Research*, *24*(4), 374–385.

Young, M. E., & Wasserman, E. A. (2001). Entropy and variability discrimination. *Journal of Experimental Psychology: Learning, Memory and Cognition*, *27*(1), 278–293.