

The Influence of Assortment Organization on Product Comparisons and Choice

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Abstract

Organization of product assortments in retail outlets affects consumer perceptions of the assortment and their purchase behavior. Previous research has largely relied on consumer self-report measures and observed purchase behavior, but the underlying mechanism is still to be unraveled. We use observational data (head movements) to examine how the organization affects consumers' "scanning" and particularly the extent to which they make direct comparisons between the items in the assortment. This paper explores how structuring assortments according to natural categories or according to a less salient attribute affects (1) consumer scanning behavior, (2) their assortment perceptions, and (3) purchase behavior from the assortment. Results show that head movements are a more precise measure for direct product comparisons than self-reported measures. Furthermore, organization of organic food products directly next to the non-organic variants leads to more direct comparisons and fewer purchases of organic products, but improved evaluations of assortment organization.

Keywords

Assortment organization, head movements, organic food products

1 Introduction

Assortment organization can influence consumer purchases from the assortment, as well as their perception of the assortment. Previous research has shown that these effects can be substantial, profoundly impacting sales and profit levels [3]. Although it is clear that assortment organization influences consumer purchases, it is not at all obvious which presentation format is best. In fact, several display improvements examined by Drèze et al. [3] actually decreased sales levels.

Items from an assortment can be grouped or structured in different ways. This structure can follow the natural categories that people define, but can also be based on a less salient product attribute. Both types of assortment organization have advantages and disadvantages, which will be examined in this paper. Our application is in the field of organic food products. We focus on two distinct ways to present the assortment: (1) according to product type (natural groups), and (2) according to the organic nature of the products (a less salient attribute).

2 Assortment organization

Products have many attributes that could potentially be used to organize them. Thus, food products could be organized based on price, flavor, size, brand, and so on. The options may seem daunting, but often there is a dominant organization, which most people use. In categorization theory this is called a natural category, and it is the level at which consumers naturally organize items [7]. For products, this is the product type level [9]. Vegetables, for instance, contain as natural categories such product types as onions, carrots, and leek. Retailers can choose to apply this natural product

grouping, or to base the organization on a less salient attribute. They could organize a vegetable assortment based on local production, organic nature, or even based on flavor, depending on the attribute they want to emphasize.

2.1 Impact on assortment perception and choice

Presentation format can influence how information is acquired, and consumers have a tendency to process information according to the graphical organization of displays [2, 6, 8]. This implies that organizing assortments according to a specific attribute increases the salience of that attribute. For instance, Areni, Duhan, and Kiecker [1] show that organizing wines by region makes it easier for consumers to use wine region in their decision-making. Products which score favorably on the organizing attribute (e.g., organic nature of the products) may consequently be chosen more often.

Processing is also affected because direct comparisons between alternatives are easier when the physical distance between them is low. The number of direct product comparisons between alternatives should therefore increase with decreasing physical distance. When assortment organization is not based on the natural product types, the resulting physical distance between alternatives complicates their direct comparison. Impressions of quality and price may be affected. More specifically, consumers may not notice it when alternatives in one subgroup are priced higher or are of similar quality as similar alternatives in another subgroup.

Assortment organization can also affect the time and effort required for choice [4]. An organization that is unexpected and not in line with how consumers themselves categorize the products internally is generally liked less [5]. As most stores organize products according to product type and this is consumers' basic categorization as well, evaluations of the display should be highest for this organization and decision effort and time lowest.

In sum, we expect that organizing an assortment according to a less salient attribute (i.e., organic versus non-organic) (1) increases the purchase amount of the alternatives that are preferred on the organizing attribute (organic products), (2) decreases direct comparisons between products of the same type, (3) improves subgroup perceptions on unfavorable attributes that covary with the organization (price, as organic products are priced higher), (4) improves perceptions on favorable attributes that do not covary (quality, as organic and non-organic products in our application are identical), (5) increases decision effort, and (6) decreases display evaluation, compared to an organization according to product types.

3 The experiment

3.1 Method

Forty-four students participated in a 2-group design. Nine participants indicated that they had made the decision for or against organic products beforehand, as they bought organic products very often or never. They were excluded from further analyses, leaving 35 participants.

In a university-related farm, participants entered a 'farm store' selling carrots, leek, onions, apples, eggs, and potatoes, in both organic and non-organic form. These were organized either based on organic versus non-organic items, or based on product type with organic and non-organic variants adjacent. Organic and non-organic products were physically identical, and only varied in the information that accompanied them. Prices were provided and higher for organic than for non-organic products.

Equipped with a head movement camera (inserted in a pair of glasses), participants chose from the assortment, as shown in Figure 2. A fixed camera provided an overview of the layout. Advantages of observation with two cameras include that it (1) is unobtrusive, capturing the visual field of participants without restricting maneuverability, (2) provides information on direct product comparisons, and (3) allows for precise coding using both video streams.

Following a think-aloud protocol and product choices, participants reported the amount of product comparisons they made between organic and non-organic alternatives (three items, $\alpha = .88$), quality perceptions (three items, $\alpha = .89$), price perceptions (five items, $\alpha = .80$), search effort (three items, $\alpha = .79$), and evaluation of the display (three items, $\alpha = .96$), all on 7-point scales. Head movements were analyzed and quantified with *Observer 5.0*.



Figure 2. The experimental setup.

3.2 Results

As expected, participants bought more organic products when these were placed separately (denoted by *O*) than when the assortment was organized according to product type (denoted by *T*) ($M_O = 2.17$, $M_T = 1.29$; $t(33) = 2.19$, $p < .05$). In addition, quality perceptions for the organic products were higher ($M_O = 5.98$, $M_T = 5.20$; $t(33) = 2.23$, $p < .05$). We did not find the expected difference in price perceptions ($p > .05$). An organization according to organic versus non-organic products was also met with increased stated search effort ($M_O = 4.31$, $M_T = 2.47$; $t(33) = 4.21$, $p < .001$), increased time spent scrutinizing the products ($M_O = 121.7$, $M_T = 87.0$; $t(28) = 1.99$, $p < .05$), and decreased evaluation of the display ($M_O = 3.24$, $M_T = 5.25$; $t(33) = -4.27$, $p < .001$), all as expected.

We also expected differences in product comparison processes. No such differences were found in the self-reported comparisons ($t(33) = 1.24$, $p > .05$). Yet, analyses of the video data clearly supported our expectation, with many more direct comparisons between organic and non-organic variants when these were adjacent ($M_O = 8.5$, $M_T = 28.8$; $t(28) = 4.43$, $p < .001$). Participants were apparently unaware of the degree to which they had made these product comparisons.

4 Discussion

This study has shown that placing organic products separately leads to fewer direct comparisons with the non-organic alternative, and increases the number of organic products that are bought. At the same time, consumers like this presentation format less. This poses a dilemma for

retailers who want to promote organic products. Displaying these products separately can induce consumers to buy more of them, but can also lead to dissatisfaction with the organization, which could drive consumers away from the store.

The practical implications of this study go beyond the application of organic food products. Displaying specific items from a larger set either separately or adjacent to a direct alternative is an issue that occurs frequently. Consider the placement of health food items or specific brands (e.g., the Zonnatura brand is placed separately from related product categories in many Dutch supermarkets), but also whether to organize holiday packages according to destination or target group.

Our study also has implications for the measurement of product comparison processes. Self-reported measures appear less appropriate, whereas head movements offer a more precise measure of direct product comparisons.

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