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Impact of Healthy Alternatives on Consumer Choice: A Balancing Act

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Abstract

While consumer screening of nutritional information as well as general health concerns have been on the rise, whether such concerns are reflected in purchasing behavior is not quite as certain. We postulate this disconnect between health concerns (more specifically concerns with fat, salt and sugar elements) and consumption behavior to stem from balancing behaviors exhibited by consumers. We address this issue through three core questions: (1) Are there certain segments of consumers who, given a focal health element, balance their purchases between healthy and regular versions of products across categories? (2) Is this balancing behavior consistent across different elements of health concern? And, (3) is a consumer's stated health orientation consistent with actual purchase behavior? We estimate a multi-category product choice model nested within an augmented latent class structure using scanner panel data and supplemented with survey based constructs obtained from the same consumers. We find evidence of significant balancing behavior across segments and also across different health elements. We show that our findings have significant implications for retail and manufacturer strategy as well as for public policy.

Keywords: Multi-category analysis; Consumption behavior; Augmented latent class model; Nutrition content; Health marketing

Consumer concern with health and nutrition issues has never been stronger. This concern is partly the result of information streaming from manufacturers, retailers, government agencies and health professionals, all of whom have a stake in promoting a healthy lifestyle. For example, the FDA (Food and Drug Administration) has implemented policies such as the 2006 Transfat Labeling Act and the 2008 Labeling Education and Nutritional Act (LEAN Act) as a means of regulating the information that manufacturers of consumer packaged goods must provide to consumers. Manufacturers are also reformulating their products with more nutritious ingredients (Megerian 2007) while retailers are featuring healthy products more prominently (Fulton 2010). A health survey conducted by the Food and Marketing Institute (FMI) reports that 32% of consumers now more than ever are switching to healthier product options including low sodium and low calorie alternatives (FMI 2012). Furthermore, 78% of consumers confirm reading nutrition labels while over 40% are willing to spend more on healthy products.

Whether such concern is reflected in actual consumer purchase behavior is not quite clear. Some studies find that the overall attitude towards nutrition changed after the labeling acts went into effect (Kozup, Creyer, and Burton 2003), while others show that the impact has been limited or negligible (Balasubramanian and Cole 2002; Moorman 1996). The latter finding is credible given reports of dramatic increases in obesity in the United States over the past 20 years with rates exceeding 25% in most states (Centers for Disease Control 2008).

Indeed, there may be several reasons for this inconsistency. Firstly, consumers may have different objectives regarding their purchases within a set of categories. For example, if certain product decisions are based on a specific health related element, such as sugar, one may consider categories such as cereal and ice cream in the same decision context. Consumers may 'treat' themselves to a regular product in one category while buying a healthy product in another. Thus, Moss (2013) reports that milk consumption has dropped by almost 75% over the years to avoid fat, while cheese consumption has simultaneously increased.

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Secondly, a household may well be conscious of one health related element (such as salt) while being quite indifferent to another (such as sugar; see Prasad, Strijnev, and Zhang 2008). Finally, there could be inconsistencies between consumers' stated and actual purchase behaviors (Berning, Chouinard, and McCluskey 2011).

In order to address these issues, we formulate a heterogeneous multicategory model of choice in an augmented latent class framework, allowing consumer purchases to be correlated across categories. Our unique data set includes household scanner panel purchase data to which we append consumer survey data on attitudes and perceptions.

We find, briefly, that there are indeed segments of consumers that balance their purchasing over a set of categories with respect to a given health element. These segments, however, do not do so to the same extent nor do they do so consistently across all the health elements. Furthermore, we find that consumers' stated preferences and attitudes toward healthy choice may not always be reflected in their actual behavior. Such an understanding of consumption behavior with regards to the growing health trend has direct implications for the development of managerial strategy and public policy that actually helps to encourage and positively impact healthy consumption.

The rest of the paper is organized as follows. In the next section, we briefly review the relevant literature. We then describe our modeling approach followed by a description of the data used to estimate our models. Subsequently, we present the results of our analyses followed by a discussion of the managerial implications. We conclude with directions for future research.

Theoretical Framework

The concept of compensatory or balancing behavior has been well established in the marketing literature ever since the seminal work by Fishbein and Ajzen (1975). It has been offered as the underlying theory in a variety of contexts with balancing behavior posited over different elements (Gilbride and Allenby 2004; Hoyer 1984; Johnson, Meyer, and Ghose 1989; Wright 1975). For example, in the multiattribute choice context, a product's poor evaluation on one attribute can be balanced by its strong evaluation on another attribute (Johnson, Meyer, and Ghose 1989; Keeney 1993; Payne, Bettman, and Johnson 1993). In the market efficiency context, balancing behaviors originate from consumer beliefs of value derived from options within a choice set. In this context, balancing behavior is observed not over attributes within a product, but across products within a choice set, so that beliefs of low and high value derived through different options in the same choice set balance each other out (Chernev and Carpenter 2001). Finally, in the context of product choice, consumers may perceive that the negative evaluations of an attribute in an option can be offset by positive evaluations for the same attribute from another option within the same choice set (Chernev and Carpenter 2007). Once again, the balancing here is observed across attributes, but unlike the multiattribute context in our first example, these attributes originate in different products to balance the choice set.

It should be noted that in all prior applications, consumers aim to maximize evaluations of products or attributes across (or within) a set of products. Thus, 'poor' evaluations are compensated for by 'good' evaluations. We build on such prior findings and extend this research to the context of negatively perceived attributes – that is, attributes that, when present, generally contribute negatively to the valuation of a product. That is, we posit that consumers also exhibit such balancing behavior across a set of products when limiting the consumption of a negatively perceived attribute. We study this balancing behavior through consumer consumption for healthy products/alternatives across categories. Depending on the consumer's individual health orientation, then, a healthy choice in some categories may compensate for a less healthy choice in another category. We thus go beyond prior literature that studies an overall household level of health consciousness (see, for example, Prasad, Strijnev, and Zhang 2008) to study the balancing behavior that we posit across categories. Our study thus acknowledges the attraction of some negatively perceived attributes and the consumer's awareness of the need to minimize these, resulting in the balancing or compensatory behavior across the specific categories carrying this attribute. We thus propose our first research question with respect to *balancing behavior*: When choosing healthy products, do certain segments of consumers balance consumption of a common health element across a set of categories carrying that element?

Studies such as Moorman (1996) and Balasubramanian and Cole (2002) having studied the effects of the *Nutrition Labeling and Education Act* (NLEA) introduced by the FDA on consumer search for nutritional information, find that the act impacts only certain motivated consumers. These motivated segments then become more sensitive to certain nutrients after the implementation of the act. This consciousness may thus prevail only for some specific elements (Moorman et al. 2004) so that a household may well be extremely conscious of, for example, the sugar in their consumption but is indifferent to the amount of salt they consume.

Furthermore, prior research has shown that segment size, price sensitivities and demographic characteristics of consumers have an impact on the consumption of healthy products (Ma, Ailawadi, and Grewal 2013). Given this, we contend that such heterogeneity results not only in a variation of healthy consumption across households but also in the degree to which it is observed across different elements for a given household. Our second research question on *heterogeneous behavior* can thus be posed as the following: Is the balancing behavior heterogeneous for households across the different elements of health concern?

Note that our access to the stated preference data allows us to better incorporate and thus understand the nature of individual consumer heterogeneity (Horsky, Misra, and Nelson 2006). Furthermore, it also allows us to determine the specific element towards which the household is sensitive while the revealed (purchase) data allows us to evaluate the degree to which this sensitivity transfers to other elements. (Note that some prior research such as Balasubramanian and Cole 2002, also used scanner-panel data, but given their aggregate level focus, the incorporation of individual level heterogeneity and the tie in of demographics was not feasible.)