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Should Variety Seeking Be Measured At the Sku, Brand, Or Category Level? Does It Matter?

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Variety-seeking can occur at the SKU, brand, or category level. Past research focused on brand level variety-seeking. Using data from the snack market we offer a comprehensive picture of individual variety-seeking behavior and study associations in behavior across the three forms of variety-seeking.

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In a two-week period, the average US consumer snacks 32 times on 17 different brands coming from 4.5 different snack categories, e.g. salty, sweet, salsa/dips, fuel, grain and non-macro (fruits, vegetables). She switches among the brands 29 times and among the categories 22 times. Virtually no brand is eaten twice in a row and only 1.5 brands are from the same category. Thus, the US consumer seeks high variety in her snack consumption. Past research has focused on only one form of variety-seeking, usually at the brand level. In this research, we offer a comprehensive view of individual variety-seeking behavior in the snacks market, in which we associate consumer variety-seeking behavior at the SKU, brand, and category levels. We seek to understand the correlations between the different types of variety-seeking and study the effect of demographic, psychographic, environment (location), and consumption factors (needs, time of day/week, activity) on different types of variety-seeking.

Extensive consumer behavior and empirical marketing literature provides a benchmark of variety-seeking models and findings (Khan 1995, McAlister & Pessemier 1982). More recent research shows that variety-seeking is more likely to occur on taste than on brand (Inman 2001) or when consumers derive greater hedonic characteristics from the product category (Van Trijp, Hoyer and Inman 1996). However, past research had several restrictions. It looked at variety-seeking as a trade-off between flavor and brand (Inman 2001, 2008). It analyzed single product categories, e.g. potato chips (Maier et al. 2007) and considered variety-seeking at the brand level. Variety-seeking research that is based on scanner data explains variety-seeking at the household level, not the individual level. Last, it did not explain how variety-seeking changes over time, around holidays or seasons. Our proposed research circumvents these restrictions. We focus on consumption patterns at the individual level, thus, avoid the aggregation bias in studies of household demand. We measure variety-seeking across the entire US snack market, and get a better view on consumers' overall snacking behavior and their consumption trade-offs when switching among brands/categories. The length of our study (2004-2009) allows us to show how variety-seeking evolved and how consumers seek more variety in some categories at the expense of others. Using over 80 variables of consumption, we can explain how variety-seeking changes with time of day (Roehm and Roehm 2004) or week, location, activity, needs, social occasion (Ratner and Kahn 2002).

To analyze variety-seeking in snacking for the whole US population, we rely on an extensive dataset monitoring the entire snacking behavior of 30,000 consumers located across the US. The respondents, chosen randomly, are weighted on six demographic variables that ensure a nationally representative sample. They self-report their snack consumption over 2-week periods and provide demographics and other personal information, such as weight/height, physical activity levels, household size, age, gender, race, marital status, income, etc. At each snack occasion, the panelist also records the consumption details: time of day/week, location, consumed on its own or with food or drinks, in public/private, needs (e.g. good to eat with others, to relax) and the activity the consumer was doing during the consumption (shopping, watching TV, socializing) etc. Each consumer reports the exact brand-flavor consumed by choosing from a list of 900 snacks ranging from leading brands (Pringles, Hersheys, etc) to regional and private label. Using the industry's market structure, these brands are further categorized into 60 subcategories (potato chips, gum, salsa) and 6 snack categories (salty, sweet, accompaniments, fuel, grain, non-macro). Thus, this comprehensive dataset allows us to create a detailed map of the whole US snack market and to understand the overall snack consumption not only at the individual consumer level but also aggregated for the whole US population.

We use several measures of variety-seeking at the brand, subcategory, and category level and employ a model with a linear system of equations to understand and paint a comprehensive picture of overall variety-seeking in US snack consumption. First, we draw on the previous research literature and quantify variety-seeking as 1.) number of unique brands consumed, and 2.) number of switches among the brands consumed. Second, accounting for the brands' dissimilarity, we perform the analysis not only at the brand level, but also at the subcategory and category level, e.g. when a consumer snacks on Lays, Orbit, and Hersheys, we record 3 different brands, 3 subcategories (potato chips, gum, candy) and 2 different snack categories (salty, sweet). Third, due to high correlation among the variety-seeking measures either within or across categories, and endogeneity, we use system of equations analysis to understand what factors explain variety-seeking. We model the different measures of variety-seeking at the brand and category levels, within and across categories as dependent variables, regressed on 80-140 independent variables: demographics, psychographics, situational factors, seasonality, trend in consumption. With high R-squares (60%-80%), the models fit the data well and give a comprehensive understanding of the factors that explain variety-seeking.

Some of the research questions we asked and the partial results we obtained are:

1. The correlation between brand and category level variety-seeking is high but not for all individuals.
2. What consumption factors impact VS?–An interesting finding is that doing sports and shopping/running errands decreases variety-seeking.
3. How do demographics influence VS?–Heavier and older people switch less on brands; Men snack on fewer brands/categories and switch less; Hispanics seek more variety. Less educated consumers are high variety-seekers.
4. Is variety-seeking seasonal?–Overall, variety-seeking does not change throughout the year, but consumers seek more salty variety in the Fall and more non-macro variety in the Summer and Fall. Some holidays also impact variety-seeking positively, e.g. Valentine, Halloween for sweets.

The research seeks to understand the big picture idea "Should variety-seeking be studied at the category, brand or SKU level?" How do different measures of variety-seeking change if the analysis is done at different levels of variety-seeking? What is the magnitude of correlation between the different types of variety-seeking? This is the first research study that offers a comprehensive map of brand and within-across category variety-seeking for snacks for the whole US population.

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Leaky Preferences: Fluency Effects in Perception and Choice

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Keys and Schwartz (2007) have argued that "psychological processes that affect decisions may be said also to "leak" into one's experience." Perhaps analogously, the ease of certain computational tasks may leak into one's perception of the content that is being processed. That is, certain stimuli or environmental features may be preferred *because* they are easier to process. We will refer to this hypothesis as the "leaky preferences" assumption.

The leaky preferences assumption can be applied to both abstract and concrete stimuli, with different implications. When applied to abstract stimuli, the assumption predicts consumers to systematically share a set of aesthetic preferences for features such as symmetry, consistency, straightness, similarity, simplicity, familiarity, and certainty. Each of these environmental features serves to reduce the processing load and aids in the efficient compression of information.

It should be noted that the "leaky preferences" assumption is an instance of a more general fluency effect. Research which varies the ease or difficulty of reading certain fonts, or of searching for information from memory, for instance, can lead people to make attribution errors, generally favoring stimuli which can be processed with a greater degree of fluency. Oppenheimer (2008) notes, that "Fluency–the subjective experience of ease or difficulty associated with completing a mental task- has been shown to be an influential cue in a wide array of judgments…. Fluency impacts whether information is represented in working memory and what aspects of that information are attended to." In applying the "leaky preferences" assumption we are proposing that certain environmental features are routinely processed with high degrees of fluency, and thus these stimuli are generally preferred.

The leaky preferences assumption may also operate on a more concrete level. Specifically, we propose that when no available option in a choice assortment is clearly superior to the others (and hence, preference uncertainty is high) people will base their decision on effort-reduction factors rather than on the content of the choice. That is, when appeal to preference is uninformative, people choose the option which simplifies the decision process. We will call this tendency, the *choice-simplicity heuristic.*

In the standard dual-process framework (e.g. Kahneman and Frederick, 2002), consumers are postulated to have two families of cognitive processes- one that is relatively automatic, affective, and intuitive (System 1) and the other that is more effortful, deliberative, and logical (System 2). In our view, the choice-simplicity heuristic applies to both cognitive systems. When System 2 is dominant (and preference uncertainty is high), the choice simplicity heuristic selects the option which simplifies the decision process *by calculation*. Likewise, when System 1 is dominant, the choice simplicity heuristic selects the option which simplifies the decision process *by affect*. In both cases, the decision process can be simplified by attending to certain cues in the choice environment.

Seemingly irrelevant contextual cues (i.e. features of the choice environment which do not relate to the content of the choices being considered), can nevertheless simplify the decision process. For instance, we can simplify the decision process for System 2 by selecting the option which involves the least tradeoffs. Selecting the option which minimizes tradeoffs *between products* leads to variety seeking behavior (Simonson, 1990). Similarly, selecting the option which minimizes tradeoffs *between attributes* leads to the compromise effect (Simonson, 1989; Simonson and Tversky, 1992). This approach significantly simplifies the calculations and deliberations in the choice process.

The choice-simplicity heuristic suggests that people often look for simplifying cues in the choice environment to aid them in the decision process. In particular, consumers may consider objective cues (such as the presence of a default option), perceptual cues (such as the recognition that one option dominates another), affective cues (such as a positive affective response toward a stimulus) or cognitive cues (such as minimizing the need to make tradeoffs). This perspective suggests that extremeness seeking, endowment effects, and asymmetric dominance effects are under the purview of system 1 since the (objective, perceptual, and affective) cues which generate