Book Reviews

Ramarao Desiraju
Editor
University of Central Florida

In this issue:

Marketing Nutrition: Soy, Functional Foods, Biotechnology, and Obesity
by Brian Wansink (Urbana: University of Illinois Press, 2005, 206 pp. $34.95)

According to the Centers for Disease Control and Prevention (2002), a staggering 65% of American adults are either overweight or obese. To the extent that poor food choices are one reason for what is beginning to be considered an epidemic, Marketing Nutrition is a timely book that offers marketers and public policy makers useful suggestions to address the challenge of improving food choices in society.

Drawing on what has occurred in the tobacco industry, *Marketing Nutrition* provides a cautionary note to food marketers that unabated obesity may cause more regulation. Wansink urges firms to preempt regulation by becoming responsible food marketers. From the perspective that developed tastes and habits are often stubborn antecedents of food choices, Wansink identifies responsive segments and presents strategies to target them with more healthful products. The timeliness of the message, along with the prescriptive targeting strategies, constitutes perhaps the most important contribution of this book. Another noteworthy aspect is the macro, cultural perspective employed to explain food choice. Particularly appealing is the concept that in individualistic cultures, which are less driven by group norms, new foods may be better promoted by focusing on functional attributes that are salient to the individual. Conversely, promotions that suggest group acceptance may be more suitable in collectivist cultures, in which food choices are driven more by tradition and norms.

However, *Marketing Nutrition* is relatively silent on approaches to influence the stubborn drivers of food choice, namely, taste and habit. Given that overweight-related health issues in the United Sates suggest persistently poor food choices among the majority of people, it follows that long-term programs to improve nutritional habits are needed. Potential programs would include implementing changes in school cafeterias and influencing parents of young children in food choice and preparation. *Marketing Nutrition* does not tackle these issues in sufficient detail, instead focusing on marketing to malleable segments, such as the health conscious and cooking enthusiasts. Given the large investments and risks in implementing long-term programs to inculcate good food habits, such guidelines would have been particularly helpful for public policy.

Although intuition suggests that habits are difficult to change and that self-control is difficult to influence in food choice, recent work suggests that they can be managed. For example, Baumeister (2002) suggests that willpower is a renewable resource that acts to counter impulse, contrary to the thinking that impulses are often irresistible. Thus, to the extent that willpower can

be managed, opportunities exist for marketers and public policy makers to influence impulsive food choice creatively. Furthermore, because food choice is often a result of habits, which are learned and scripted behaviors (Aarts, Verplanken, and Van Knippenberg 1998), work in this area may be instructive. Recent research in habitual behavior in eating may present useful insights into slowly amending habits. For example, programs (e.g., the "5 A Day" fruit and vegetable program; see http://www.5aday.org/) that allow people to alternate nutritional excesses and more healthful foods between days, rather than within days, may have more success (Khare and Inman 2006). This suggestion contrasts with Wansink's viewpoint that the 5 A Day programs are unsuccessful, perhaps because of poor segmentation of fruit and vegetable eaters. To the extent that fruits and vegetables are not substitutes but complements, segmentation seems to defeat the very purpose of such programs. Conversely, encouraging the larger population to incorporate fruits and vegetables in a habitual cycle over *several* days may achieve the objective.

Having discussed the book broadly so far, it is instructive to highlight some of *Marketing Nutrition*'s suggested targeting strategies. Dispelling the notion that nutritional information is a sufficient driver of food choice, Wansink establishes that in addition to the taste of foods, perceptions of taste, familiarity of preparation style, food appearance, and learned prejudices about foods affect choice significantly. He draws some of these insights from failed governmental efforts to encourage consumption of organ meats during World War II. According to the Wansink, it is important to provide nutritional information that highlights personal consequences of consuming this food. Furthermore, he provides evidence that success may be forthcoming by introducing new foods in familiar preparation styles and appearance and in meals with liked foods. Notably, because perceptions play a role in taste determination, even favorable-sounding descriptive names of new foods can have a positive impact on posttrial taste beliefs.

Although Wansink emphasizes that developed tastes are a strong antecedent to choice, he points to segmentation as a mechanism to foster a liking for new foods. Drawing on the success of yogurt, which was initially consumed by small segments of health-conscious consumers and then progressively popularized through word of mouth and product extensions, he provides guidelines for the promotion of soy. He suggests that targeting nutritional gatekeepers in households and segments of cooks would be a good initial strategy. Their ability to influence the usage of soy and create favorable soy preparations should serve as a catalyst for diffusion. As Wansink discusses the need for segmentation to promote foods, he reiterates the notion that personal consequences of consuming foods are important drivers of consumption. He suggests the use of mental "mapping" to learn the root reasoning behind consumption and then marketing to those underlying needs.

Besides limiting their food choices by taste and familiarity, consumers also determine their choices on the basis of availability, convenience, and value perceptions. Wansink provides some practical suggestions to marketers about how to increase the consumption of more healthful alternatives *and* decrease that of unhealthful foods. For healthful foods, ensuring effective distribution, progressively incorporating healthy ingredients into familiar foods, and using labels that explain personal benefits are among the prescriptions. Examples of strategies to increase the "cost of consumption" of unhealthful foods are providing options of smaller packages and single servings within larger packages.

Overall, this book is a competent evaluation of a grave problem facing Americans today. As the nation realizes the challenge of strong resistance to food changes, *Marketing Nutrition* suggests some steps for practitioners and public policy makers to take in the years to come.

—Pranjal Gupta, University of Tampa

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***Bayesian Statistics and Marketing,* by Peter E. Rossi, Greg M. Allenby, and Robert McCulloch (West Sussex, UK: John Wiley & Sons, 2005, 348 pp. $79.95)**

Rossi, Allenby, and McCullogh's *Bayesian Statistics and Marketing* provides a comprehensive introduction to Bayesian methods and their application to solving important applied problems in marketing. The book represents the assimilation of several years of recent work by the authors and other researchers on this topic. The book explains the basic idea of the Bayesian paradigm in statistics and provides the relevant methodological knowledge and computational tools required for analyzing real-world marketing problems using these methods.

Marketing practitioners and researchers increasingly operate in a data-rich environment. To analyze the data, it is important to have methodologies that are scientific (i.e., based on sound statistical theory), scalable (i.e., can handle large volumes of data and can be updated easily), and practical (i.e., can be solved relatively quickly). The book emphasizes the flexible and modular nature of Bayesian inference and explains how it is ideally suited for data analysis in such settings. Compared with classics in this literature (e.g., Gelman et al. 2004; Zellner 1971), this is perhaps the first book that brings together disparate sources of information on Bayesian analysis and presents it in one structured, common format that is useful for marketing audiences. A basic understanding of probability and statistics on the part of the reader is presumed.

Of particular emphasis in the book is the handling of differences across units (i.e., heterogeneity). As prior work has noted (e.g., Allenby and Rossi 1999), in the econometrics literature, heterogeneity is often treated as "nuisance parameters" that must be "integrated out" of the model to obtain an objective function relevant for parameter inference. Typically, estimation is focused on recovering population-level summaries of the distribution of heterogeneity (e.g., on recovering the mean and variance of the distribution of price sensitivities of consumers). However, in marketing contexts, it is precisely the differences across units that are often of primary interest. Differences across units provide the basis for price customization, segmentation, and targeting. Hence, a model that feeds into these decisions should ideally be capable of providing unit-level estimates of economically relevant parameters. However, a particular challenge in doing this is that the amount of data available per unit is often very small. For example, in typical scanner data applications, researchers may not have access to more than 15–20 observations of purchases by each panel member. Bayesian methods solve this problem through the phenomenon of shrinkage. By pooling the data across all units and postulating a model for the differences, estimates of units with sparse information are "shrunk" toward the common mean, and those of information-rich units are left relatively unchanged. By combining the information available per unit with the variation across units in the data, the researcher is able to obtain unit-level estimates

that are more precise and more sensible than other approaches. The book goes into depth regarding methods for measuring unit-level response parameters and ways that firms can use these to implement improved marketing policies.

A distinguishing aspect of the book is the importance that the authors attach to computation. The applied researcher who wishes to compute models using real-world data will find plenty of computing support. The accompanying software package to the book, bayesm, is available as freeware through the "R" network and implements all the models outlined using the R programming language. High-level users may implement the algorithms through calls to "canned functions" within bayesm; more advanced users may adapt and modify the code provided for their own needs. The code is optimized and tested for performance and robustness and can be used for analysis of large, real-world data sets as is. For readers who are new to the literature, five accompanying case studies, associated code, and data sets are provided. Readers who are familiar with the literature will recognize these as toned-down versions of the authors' previous papers. The provision of state-of-the-art computer code with supporting data sets makes this book unique among comparable econometrics, marketing, and statistics textbooks.

Another important feature of the authors' approach is their emphasis on implementation. Practical implementation of Bayesian methods (and statistical models in general) requires consideration of many details, including computation, prior specification, and choice of "tuning" parameters associated with Markov chain Monte Carlo algorithms. Oftentimes, statistical treatments of methods focus on explaining the model structure and logic while glossing over implementation details, thus frustrating the efforts of applied researchers actually confronting data. In contrast, Bayesian Statistics and Marketing explicitly recognizes the importance of these details for obtaining valid inferences from real-world data sets. Practical guidance for computing the models presented is provided throughout the book. Examples include methods for diagnosing the quality of importance sampling, efficient methods for simulation from multivariate normal models, and sensible prior settings for various marketing contexts. Perhaps some of the most useful ideas in the book for applied Bayesian researchers are the use of relative numerical efficiency measures as a scientific way to set the scale parameters of metropolis algorithms and practical methods for fine tuning these scaling-factors to each unit in the data.

The initial chapters of the book provide a self-contained introduction to Bayesian analysis; subsequent chapters provide extensive discussions of hierarchical models and decision theory applications to marketing. The latter chapters of the book also provide new material that has not previously appeared elsewhere, especially in terms of extensions to the standard normal model of heterogeneity and models incorporating simultaneity. Section 5.5. clarifies and brings together many details on methods for implementing mixtures of normal models, which provide highly flexible representations of heterogeneity. Chapter 7 on simultaneity closely follows two of the authors' recent papers and discusses relatively new methods for handling situations in which the response variables and some of the marketing-mix variables are jointly determined.

Given the explosion of data available to firms and the exponential increases in computing power, intelligent marketing policies will increasingly be informed by analysis of data. Firms that understand how to leverage this information will enjoy competitive advantages in the marketplace. The flexibility and modularity of the Bayesian paradigm makes it appealing for such analysis, especially in the context of developing marketing policies that take advantage of differences across units. *Bayesian Statistics and Marketing* assimilates the state of the art in this area and is an important contribution to empirical research in marketing. I believe that it will be extremely useful to both researchers and practitioners who are interested in understanding the power of these methods for solving important marketing problems.

—Harikesh S. Nair, Stanford University

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