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The author reflects on the research process, the review process, and the past and future research related to his 1988 article, which won the 1993 O'Dell award.

Reflections on "Impact of Sales Promotions on When, What, and How Much to Buy"

The William F. O'Dell award is presented annually to the article published five years ago in the *Journal of Marketing Research* that has made the greatest contribution to the marketing discipline. My article entitled, "Impact of Sales Promotion on When, What, and How Much to Buy," published in November 1988 issue of this journal, has been chosen as the recipient of the 1993 O'Dell award.

I thank the *Journal of Marketing Research* and its selection committee for this honor, and take this opportunity to briefly discuss: (1) the research process that led to the article, (2) the review process, (3) research in the last five years that addresses issues similar to those discussed in my article, and (4) the potentially interesting future research topics in this area.

THE GENESIS

The article was an outcome of my dissertation work at Columbia University. I will briefly describe the research process that led to my dissertation and finally to this paper. Hopefully, this discussion will be useful to doctoral students.

I joined the Ph.D. program at Columbia Business School in the Fall of 1983. During the first year of my Ph.D. program, I took the basic courses, such as research methods and econometrics. In the Fall of 1984, I took a Choice Models seminar with Wilfried Vanhonacker, and found it to be extremely stimulating. As part of our seminar we read two articles that later became the basis of my dissertation. The two articles (then in working paper form) were by Guadagni and Little or G&L (1983) and Neslin, Henderson, and Quelch or NHQ (1985). I found G&L's article to be very inspiring. Consequently, my term paper for Wilfried's seminar ended up being a minor modification of G&L. Because this was my first attempt at a "research paper", I was anxious to obtain comments from Wilfried and also Don Lehmann, both whom considered the idea to be a minor "tweak" of G&L. They suggested I aim for a bigger contribution, than make minor modifications to existing models. I agreed, though I was not sure how to get that "big idea".

I spent the following winter break re-reading G&L's article. One paragraph in their article caught my attention, in which they wrote, "Much work remains to be done. A major missing feature is the modeling of the purchase occasion itself. Our work has focussed entirely on share, wheras certain market actions, notably promotion, tend to shift purchases in time and therefore at least temporarily expand the market" (p. 233). This reminded me of NHQ's article that discussed the issue of purchase time and quantity. It seemed natural to put these three consumer decisions together in a common framework. Though NHQ obtained interesting insights by using a simple regression model, I used a different model structure for reasons discussed in my article.

It took several months to convert this idea into a reasonable framework with conceptually sound and empirically estimable models. In the summer of 1985, I submitted my dissertation proposal to MSI's proposal contest and was fortunate to be selected as a winner. This gave me the confidence and motivation to continue my work. After several months of data crunching, I obtained some interesting results. At that point I thought I had a reasonably good dissertation, however, my committee thought otherwise. Many of my committee members, especially Don Morrison, asked me repeatedly what then seemed to be an unanswerable question—"How much of the sales increase due to promotion is incremental versus borrowed sales?" To address this issue I created a complex simulation system. Though that satisfied my committee members, they were not very excited by this

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solution. After thinking of alternative approaches to handle this problem, I finally addressed this issue by decomposing the total elasticity into choice, timing, and quantity elasticities. In fact, this became the major focus and contribution of my dissertation. After several rounds of pruning and fine tuning, a paper emerged.

THE REVIEW PROCESS

The review process for this paper started with a thorough and rigorous evaluation by four reviewers. In the second round, one reviewer dropped out leaving three reviewers to judge the paper in the later stages.

From the beginning the reviewers were favorably disposed toward the paper. As a starting academic with my first major paper under review, I was encouraged by the positive tone of the reviewers, which was reflected in one reviewer's comment who summarized his or her reaction in the first round of the review process by saying, "Overall, I think that I like this paper." Another reviewer who also liked the paper indicated, "There are many potential original contributions to this paper. The general idea of looking at brand choice, timing, and quantity is a good one. In addition, the general approach of decomposing the deal elasticity appears to have potential." This thought was echoed by the third reviewer who said, "The elasticity analysis is very interesting and useful."

I do not want to give the impression that the review process for this paper was smooth sailing. The paper went through three serious revisions over 14 months. In the first round, the four reviewers wrote approximately 18 pages of single-spaced comments, which required a lot of new modeling, estimating, and rewriting effort over a two month period. Given that this paper was on the basis of my dissertation, and I had already done fairly detailed work even before sending the paper to *JMR*, the effort required for this revision (which was accompanied by 23 pages of detailed notes to reviewers) was substantial. There were also moments when I found it hard to balance the different perspectives of the reviewers in the same paper. For example, one reviewer was interested in getting more details about the model, data, variables, and competing models; whereas the other reviewer wanted me to condense the first 26 pages of "technical material" to no more than 5 pages and expand on the interesting results about elasticity decomposition. Given the heterogenous audience of our journals, this difference in reviewers perspective was not necessarily detrimental, however, it was a challenge for me to do this balancing act.

In summary, though the reviewers were rigorous and demanding, they were also encouraging. We all realize that a thorough and rigorous review process is essential to maintain the academic excellence of our journals. Equally important, especially for junior scholars, is the positive attitude of the reviewers. I think I was fortunate in this regard.

THE LAST FIVE YEARS

My article considers brand sales as the result of consumer decisions about when, what, and how much to buy. The key contribution of the paper is to model these three components and provide a method for assessing the effectiveness of a sales promotion by decomposing the sales bump during the promotion into sales increase due to brand switching, purchase time acceleration, and stockpiling. Results for regular ground coffee suggested that more than 84% of the sales increase due to promotion comes from brand switching. Purchase acceleration in time accounts for less than 14% of the sales increase, whereas stockpiling due to promotion accounts for less than 2% of the sales increase for coffee brands.

Similar results for the coffee category have been obtained with slightly different approaches by John Totten (then at IRI) and Chiang (1991). The three consumer decisions of brand choice, purchase timing, and purchase quantity have also received much attention in the last five years. In the brand choice area, several modifications of the G&L's logit model have been proposed. Examples are the inclusion of reference price effects (e.g. Lattin and Bucklin 1989), estimation of nonlinear parameters in logit model (e.g. Fader, Lattin, and Little 1992), and, perhaps, most significantly, the modeling of preference segments through mixture models (e.g. Kamakura and Russell 1989). The purchase time area has seen the inclusion of heterogeneity in the models (e.g. Gupta 1991; Jain and Vilcassim 1991) as well as a close look at the issue of modeling purchase timing versus purchase incidence (Wheat and Morrison 1990). Choice and incidence have been jointly studied by several authors (e.g., Bucklin and Lattin 1991), and recent studies have introduced latent segments to such models (e.g., Bucklin and Gupta 1992). Similarly, choice and quantity decisions also have received attention (e.g., Krishnamurthi and Raj 1988).

THE FUTURE

The area of scanner data and choice modeling remains a rich field of research. In my opinion, the following four areas have the highest potential in the future.

1. *Combining attitude data with scanner data:* Consumers perceptions and preferences about brands are strong determinants of their brand choice behavior. Arguably, consumer attitudes are more stable and long run predictors of choice than are short run marketing activities. To date, unfortunately, scanner data lack this important piece of information. However, two things are likely to change this in the future. First, some companies already are beginning to collect attitudinal data from scanner panel members. Second, models for combining *stated preferences* with *revealed preferences* are being developed (e.g., Ben-Akiva 1993). A combination of psychometric and scanner data will provide interesting insights into consumer choice behavior.
2. *Cross-category analyses:* Most of the research studies to date, with a few notable exceptions, have estimated and validated their models using a single data set. Extending

such analyses to multiple categories will provide at least three benefits. First, it will establish the generalizability of results (Fader and Schmittlein [1993] is a good example of this). Second, it will allow us to study consumers' choice of a shopping basket. Third, such analyses will be useful to understand the store choice and traffic issues. The recent joint effort of MSI and Nielsen to create a brand data base with multiple categories will, perhaps, make this dream come true.

3. *Long run effects:* As marketing expenditure on promotions grow at the expense of advertising, a nagging question remains—Is it a good trend? Companies, such as Proctor and Gamble, are abandoning a high frequency promotion strategy in favor of an everyday low pricing strategy under the assumption that in the long run promotions hurt a brand, whereas advertising is brand building. Perhaps P&G is correct. However, there is a dearth of published work that studies the long run effects of promotions and advertising. Recently, Mela, Gupta, and Lehmann (1983) took a first crack at this issue by using a 8-year long scanner panel data of a consumer packaged good. The future will see more studies in this direction.
4. *Optimal decisions:* The empirically based models are primarily descriptive in nature. Though "what-if" simulations can provide a sense of "good" or "bad" decision strategies, this process can be cumbersome and inefficient. Obviously, the next step is to develop normative models that use the results of the descriptive models as the basis to generate optimal marketing mix decisions.

Overall, the future holds potential for many exciting opportunities for those of us who love to get immersed in gigabytes of data with the hope of gaining some insights into the consumer choice behavior.

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