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The Impact of Feature Flier Characteristics on Supermarket Fruit Demand

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This research examines how consumer purchasing responds to changes in advertised feature sizes and placements within weekly in-store fliers. The weekly-featured advertisements were measured in square inches and the different advertisement placements within the weekly flier included front, back, or within pages. A non-linear Almost Ideal Demand System was used to model the share equations for Gala apples, Fuji apples, Red Delicious apples, Granny Smith apples, other sweet apples, other tart apples, pears, bananas, oranges, and grapes. One hundred thirty-five weeks of data on weekly store sales were collected from two grocery stores in the Portland, Oregon metropolitan area. Results from the advertised feature fliers and placement measures indicate the importance of retail management in determining demand levels.

Fruit sales are important to overall grocery store profitability (Schaffner 2002; Gentry 2001; Perosio et al. 2001), and it is important to understand the factors influencing consumer purchasing-behaviors. Studies conducted by Durham, McFetridge, and Johnson (2002), van Voorthuizen, Schotzko, and Mittelhammer (2002), and Richards (2000) looked at the impacts of advertising on demand for fresh fruit using a binary variable to track when advertisements or promotions were present. The use of an all-inclusive binary variable for advertisements and promotions does not examine how the different characteristics of advertisements or promotions affect consumer purchasing behaviors. The study by Durham, McFetridge, and Johnson (2005) used a unique set of data collected at the store level and analyzed specific characteristics that would not have been captured with a traditional binary variable. The characteristics examined in this study included the size of advertisements (measured in square inches and using zero values as placeholders when no advertisements were used), and the placement of the advertisement within the weekly in-store flier.

Data and Methodology

The data used for this study included weekly purchases from two retail grocery stores within the same chain, but these stores had different produce department layouts and were located in different

demographic areas in the Portland, Oregon metropolitan area. More details on the data collected and collection process can be found in McFetridge, Johnson, and Durham (2005).

This study follows classical demand models, using own and substitute prices as well as expenditures. Analysis at the store level allowed for other variables to be evaluated, such as advertisement size and placement within the weekly in-store flier, product branding, seasonality, display location, display size, point-of-purchase size, and product quality measure. The non-linear Almost Ideal Demand System (AIDS) was used (Deaton and Muelbauer 1980).

Results

The advertising variables included in the demand-system model are advertisement size in the weekly in-store flier (measured in square inches) and binary variables for advertisement placement (front page, end page, and within page) within the flier. The advertisement-size variables in most share equations showed that increasing the size of an advertisement within the weekly in-store flier increased consumer's expenditures for a specific fruit. The positive and significant estimated coefficients (scaled to a factor of 10 square inches) for advertisement size in the weekly in-store flier ranged between 0.00936 and 0.03212.

The advertisement-size elasticities, estimated at the mean without using the zero-valued (no ad) observations, are all less than one. While the estimated elasticities provide useful information, applying them to a realistic situation provides a

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better understanding of how advertisement size affects demand. This study found by increasing the length of the advertisement for Gala apples one inch, that Gala apple demand increased more than 16 percent, an amount great enough to warrant serious consideration.

Although there was not sufficient variation to observe all three possible advertisement placements in a single share equation, based on the results it appears that front-page advertisements have the greatest positive impact on consumers' expenditures, followed by end-page advertisements and within-page advertisements.

Conclusions and Future Research

This study shows that advertisement or promotion factors that influence consumers' expenditures are not fully explained by a binary variable. These factors should be considered to ensure that all of the variation in consumers' expenditures are being explained when advertisements and promotions are included in the demand model. Future research expanding on these results should consider the amount of variation present in the data set. Added variation would allow for all of the advertisement placement variables to be included in each share equation, which would allow for a direct comparison between front-page, end-page, and within-page advertisements.

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