Point-of-Sale Nutrition Information and the Demand for Ready-to-Eat Cereals

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INTRODUCTION

Food manufacturers communicate with consumers about products' nutritional characteristics and promote sales using packaging information such as claims, statements, logos, and nutrition symbols (i.e., Front-of-Pack labeling such as Nutrition Keys)

Recently, more food retailers have also been adding nutrition information to shelf tags in stores. Guiding Stars®, developed by Hannaford in September 2006, is one of more prominent programs.

- 0 star
- 1 star – "good nutritional value"
- 2 stars – "better nutritional value"
- 3 stars – "best nutritional value"

Front-of-Pack

Guiding Stars Shelf Tag

OBJECTIVE

To explore the effectiveness of the Guiding Stars program by examining sales of ready-to-eat cereals:
-- between 4/26/2008 and 4/17/2010 (approximately 1.5 years after program introduction)
-- in Hannaford's stores and in other retailers in the same trading area
-- considering price, promotion, and competitors

Sutherlands et al. (2010), the only published evaluation:
-- sales during October of 2006, 2007 and 2008
-- did not consider price, promotion, or competition effects
-- reported sales of products of 1+ stars increased more than sales of other products in October 2007, but not in October 2006

DATA AND MODEL

Data

-- Guiding Stars ratings at Universal Product Code level – monthly data from Hannaford

-- Sales, prices, promotion, competing retailers – weekly supermarket scanner data from Nielsen (data prior to April 2008 were not available)

Rotterdam Demand Model

$$w_i dlnq_i = c_i + \mu_i DQ + \Sigma_j \pi_{ij}(dlnp_j - \Sigma_k \gamma^k da_i^k) + \alpha_{1i}S_1 + \alpha_{2i}S_2 \qquad i, j = 1, 2, \ldots, 8$$

where p = price, q = units sold, a^k = promotional activity k, s1 and s2 = seasonal variables

-- c_i would be positive if the program had a positive impact on the demand for product I, assuming the impacts were gradual

-- 8 product categories: 4 (0, 1, 2, 3 stars) for products sold in Hannaford, 4 for products sold in competing retailers

RESULTS

-- All trend estimates are small and not statistically significant
-- Own price elasticities were higher for competitors than for Hannaford
-- Expenditure elasticity was higher for competitors than for Hannaford
-- Promotion were more effective for 3-star products at competitors than at Hannaford

CONCLUSIONS

-- During the study period, the Guiding Stars program did not appear to have discernible impacts on sales of ready-to-eat cereals, either by shifting market shares from competitors to Hannaford or by shifting sales from lower rated products to higher rated products
-- These results show less noticeable impacts from those found in Sutherlands et al.
-- More research is being planned to obtain more useful results by:
(1) expanding the time horizon to years prior to the launch of the program
(2) using alternative methodology such as propensity score matching

FINDINGS

Trends in Sales Units (RED – "no star or unrated," GREEN – "1 star," PURPLE – "2 stars," BLUE – "3 stars")

Figure 1 Unit Sales in Hannaford

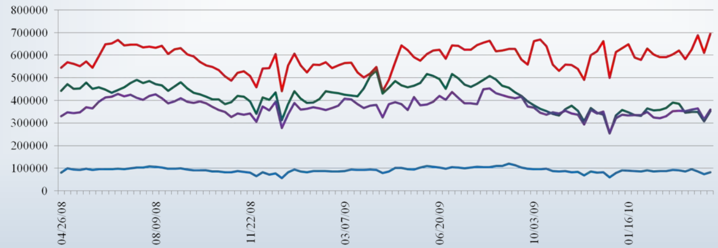
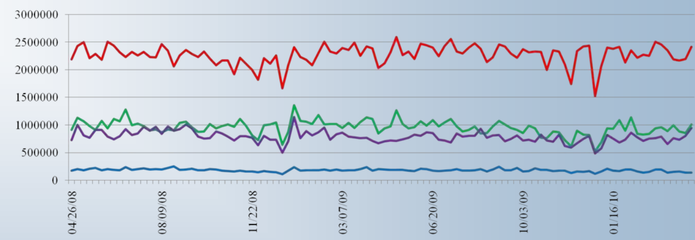


Figure 2 Unit Sales in Competing Stores



Average Units of Cereals Sold Per Week (Units were rescaled to mask real sales data)

	0 star or unrated	1 star	2 stars	3 stars
4/2008 – 4/2009	566,987 (39% of all sold)	434,977 (30% of all sold)	374,786 (26% of all sold)	90,471 (6% of all sold)
4/2009 – 4/2010	606,734 (41% of all sold)	403,197 (27% of all sold)	367,168 (25% of all sold)	94,113 (6% of all sold)
2008 – 2010 difference (* significant at 5%)	39,746 *	– 31,780 *	– 7,618	3,642 *

	0 star or unrated	1 star	2 stars	3 stars
4/2008 – 4/2009	2,246,821 (53% of all sold)	994,628 (23% of all sold)	824,391 (19% of all sold)	184,142 (4% of all sold)
4/2009 – 4/2010	2,298,586 (55% of all sold)	921,008 (22% of all sold)	754,718 (18% of all sold)	172,809 (4% of all sold)
2008 – 2010 difference (* significant at 5%)	51,765	– 73,619 *	– 69,673 *	– 11,333 *