

Consumer Responses to Mushroom Promotions

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When placing mushrooms on promotions, retailers face several strategic questions including the selection of the price point, the terms of the promotion, and the type of ancillary promotion activities to conduct in publicizing or advertising the promotion. Fortunately, this is the type of information that is recorded in category management information systems, which is used in analyzing past promotions and planning future merchandising and promotion activities. This study uses the category management data collected by The Perishables Group for the Mushroom Council to evaluate the impact of alternative promotion formats and terms on mushroom sales. This includes different sizes and placements of advertisements and price terms. The impact of the alternative promotion formats is evaluated at a common price point, so that assessments on their relative effectiveness may be developed.

Past marketing studies focus not only on the magnitude of the price discount associated with a promotion, but also the terms used to describe the promotion. It is believed that these descriptions play a large role in influencing the way that consumers respond. For example, it has been shown that consumers prefer a “buy one, get one free” deal to a “buy two, get 50% off” deal. The researchers argue that the prior deal offers the consumer greater perceived value, despite having the same unit price and requiring the same expenditure. This perception of value arises from the free product mentioned in the offer. It is further argued that whether the promotion is described in terms of monetary savings or in terms of additional products (bonus products) also plays a large role in influencing consumers. For example, it has been demonstrated that consumers prefer a “50% off deal” to a “buy one, get one free” deal. The monetary savings associated with the price discount is viewed to offer greater value to the

consumer than receiving the additional product. Furthermore, the “50% off” deal is preferred since it offers “the maximum latitude to the consumer because ... he [or she] is not forced to receive two items to take advantage of the deal” (Sinha and Smith). For highly perishable items, typically consumed in small quantities, this could be an important factor in evaluating a deal. Whether either promotion results in greater profits for the retailer depends on the gross margin for the product. Obviously, a margin of at least 50% is required to make it profitable, ignoring the potential cross-product benefits of building store traffic.

In addition to setting the promotional price and terms of the deal, retailers are required to make other decisions on the placement and size of the advertisements for featured products. Several studies have evaluated the impact size has on consumer recall, perceptions of brand quality, and product sales. In short, large, more prominent ads are better.

Not unrelated to size, placement of ads is also expected to have an impact on product sales. Here retail managers may choose between advertising in the freestanding inserts distributed through newspapers, in-store flyers, or not advertising at all, instead adopting an un-advertised special strategy. Some marketing researchers have argued that un-advertised specials or in-store coupons are more effective than advertised specials. Un-advertised specials are suggested to be similar to a windfall gain. Consumers are believed to more readily spend windfall gains or “mad money” than planned or anticipated earnings. By extension, unanticipated (anticipated) savings are similar to unanticipated (anticipated) earnings. It is demonstrated that un-advertised specials not only increase spending on the featured product, but also products in close proximity and products used in conjunction with the featured product.

Most retailers do advertise their mushroom promotions. The anticipated impact of the promotion will also depend on the position allocated for the advertisement in the free-standing inserts or in-store flyers. It is conventionally accepted that front and back page advertisements have the greater impact, than ads on interior pages. These questions on ad placement and others are addressed using detailed data collected for category management analysis.

The data used in the analysis provide information on the price and volume of sales for each mushroom store-keeping unit (PLU or UPC code) for a period that spans from January 1999 through December 2002. However, there are some discontinuities in the data period for some of the chains. Detailed data on promotion formats is available for a limited number of chains. Since our primary interest is in assessing the impact of the promotion features on product sales, we restrict our analysis to the leading products in sales, which also happen to be the most frequently promoted products. This avoids the need to aggregate across product categories, which would mask the impact of price promotions and their ancillary promotion activities. Table 1 provides a summary of the chains and products used in the analysis.

The selected chains provide some diversity in region, ownership form, and types of customers served. Chains A and B are part of retail grocery conglomerate which operates in the Southeast and was acquired by a multinational grocery retailer in 2001. Chain A might be characterized as a medium volume store in terms of mushroom volume, while chain B sells lower volumes. Each store format appeals to value conscious consumers. Chain C operates in Pennsylvania and New Jersey as a division of a large U.S.-based grocery retail chain. This chain sells higher volumes of mushrooms per store and appeals to middle to upper income consumers.

Finally, chain D, based in California, is among the 20 largest independent grocery store chains in the U.S. It is another store with a fairly high volume of mushroom sales.

All the selected chains sell eight-ounce packaged white mushrooms in whole or sliced form. Indeed, these two products account for the majority of mushroom sales. Other varieties and product forms, including Portabella, account for less than ten percent of store sales. In nearly all the selected stores, these products ranked among the top two or three products in terms of frequency of promotion. Indeed, for some chains, such as chain B, they were the only products promoted.

The types of promotions employed by the chains varied, but all of them placed ads with mushrooms in secondary or sub-feature position, as shown in table 2. This would put the product advertisement on the lower half of the front page or on one of the interior pages of a freestanding insert or in-store flyer. Chains C and D featured mushrooms in some of their advertisements. Chain C was the only store to run un-advertised specials. Chains A and B frequently used buy one, get one free promotions, but sometimes limited the advertisements to single lines in freestanding inserts or in-store flyers.

Given that the types of promotions vary by chain, a mushroom demand model was estimated for each chain, which incorporates price, competing product prices, the various promotion forms, competing product promotions, and consumer expenditures on mushrooms. The model also measures the effect of a promotion on sales during the week following the promotion, sometimes referred to as the lagged promotion effect. Finally, the model allows us to evaluate the impact of the different promotion formats at a common price point, so that the

impacts of each can be compared directly. Select results from this analysis are presented in figures 1 through 7.

Assuming a price of \$1.79 for an eight-ounce package of white, sliced mushrooms sold by Chain A, figure 1 shows that the most effective promotion in terms of generating additional weekly sales per store is a buy one, get one free (BOGO) promotion advertised through a liner placement. Under this promotion, an additional 89 units are sold per store on a weekly basis. A liner ad simply promoting mushrooms at \$1.79 per carton will only generate sales of an additional 32 units. When either whole white or sliced Portabella mushrooms are placed on ad, sales of sliced white mushrooms fall by 23 and 12 units, respectively. Finally, in the week following a sliced white promotion sales of this product are unaffected. They neither rose nor fell. So, consumers were not avoiding mushrooms after a sale, but they were also not induced to buy more following a promotion. The data for chain A also allows us to compare the results of sales under a BOGO to other promotions at a price point half the BOGO price. These results are illustrated in figure 2, where we see that a BOGO advertised through a liner ad at \$1.79 generates sales of 57 units more per store per week than a liner promotion at a price of \$0.90 (\$0.895).

More results on the effectiveness of BOGO promotions in moving volume are available using data from chain B, as presented in figures 3 and 4. Here a BOGO for sliced white mushrooms featured through a liner ad at \$1.79 generates sales of an additional 44 units per store per week. Sub-feature ads or in-store flyers featuring sliced white mushrooms generates sales of an additional 8 and 12 units per week per store, respectively. Again, we see that when competing items, such as whole white mushrooms, are promoted, sales of sliced white

mushrooms fall—here by 6 units per store per week. During the week following a sliced white mushroom promotion sales of this product drop slightly by two units. Although this is a small amount, it is a statistically significant result, as are all the findings in this report. When comparing a BOGO-liner promotion at \$1.79 per package to a sub-feature ad, promoting sliced white mushrooms at \$0.90 (\$0.985) per package, the BOGO generates sales of 24 more units per week (see figure 4).

Evidence on the importance of size is available from the data for sliced white mushroom sales by chain C (see figure 5). Front position or feature ads generate additional weekly sales of 33 units, while a sub-feature ad at the same price point of \$1.19 generate additional sales of only 18 units. The results for chain C also point to the potential value of not advertising. In this chain, unadvertised promotions at a price point of \$1.19 would generate additional weekly sales of 46 units. So, perhaps, some store promotions should not be advertised at all, depending on the type of customers served by the store.

The results from chain D again emphasize the importance of size in advertised promotions with feature ads producing more weekly sales of sliced white mushrooms than secondary ads (see figure 6). Also we again see that sliced white mushrooms fall when white whole mushrooms are promoted. However, the sales of sliced white mushrooms are unaffected by the promotion of this product in the prior week.

Finally, we explore the gross profitability of these alternative promotion strategies using data from chain A under some observed price points and some assumed wholesale prices. The wholesale prices were obtained from two industry sources. The prices used during promotion and non-promotion periods are summarized in table 3. The focus of this analysis is on the

alternative promotions for sliced white mushrooms, so the retail prices of whole white (\$1.79) and sliced Portabella (\$2.99) are held fixed, as are their wholesale prices. With these assumptions, we can evaluate alternative promotions for sliced white mushrooms at select price points on category gross profitability, assuming that the category is composed of these three products. Therefore, when sliced white mushrooms are priced at \$1.89 and no promotions are in place, gross profits for the category sum to \$233 with sliced whites contributing \$113, whole white contributing \$105, and Portabella contributing \$15, as shown in figure 7. When sliced white mushrooms are promoted at \$1.79 using a liner ad, gross category profits increase slightly to about \$235 per store -- sliced white gross profits increase to \$148, while whole white gross profits fall to \$75 and Portabella profits fall to \$11. Under this promotion, gains in sliced white mushroom profits come from increased sales and a lower wholesale price. But, the gain in sliced white sales is at the expense of whole white and sliced Portabella sales. When a sub-feature ad is used for sliced white mushrooms promoted at \$1.79, gross category profits expand to \$252. Gross category profitability drops for each of the BOGO promotions shown in figure 7 due to a large drop in gross profits for white sliced mushrooms. Even though the wholesale price is 14 percent lower under a BOGO promotion, this fails to compensate for the effective 50 percent decrease in retail price.

In summary, we can say that larger advertisements or advertisements placed in more prominent positions in free-standing inserts or in-store flyers generally produce greater increases in sales, than smaller, less prominent advertisements. We also had some evidence suggesting that unadvertised specials are more effective than advertised specials. However, when promotions are similar in terms of the dimensions of their advertisements, a buy one, get one free

offer generally produces greater sales than a promotion at a price point that is 50 percent less.

However, the BOGO promotions were less profitable for the promoted item and for the category.

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Table 1. Selected Chains and Mushroom Products.

Chain/Product	No. Stores	No. Weeks	Mean Weekly Sales per Store	Average Price	Promotion Freq. Rank
			<i>Units</i>	<i>\$/unit</i>	
Chain A	187	144			
White, Sliced, 8 oz.			76.87	1.81	2
White, Whole, 8 oz.			70.91	1.69	1
Portabella, Sliced, 6 oz.			7.10	2.92	3
Chain B	134	111			
White, Sliced, 8 oz.			42.48	1.73	2
White, Whole, 8 oz.			37.16	1.65	1
Chain C	38	131			
White, Sliced, 8 oz.			143.04	1.53	2
White, Whole, 8 oz.			188.64	1.49	4
Portabella, Sliced, 6 oz.			36.00	2.88	3
Chain D	87	128			
White, Sliced, 8 oz.			101.05	1.85	1
White, Whole, 8 oz.			106.25	1.52	2

Number of stores indicates the number of stores identified in the data, not the total number in the chain; number of weeks indicates the number of weeks of data recorded in the database, excluding periods when data was not collected.

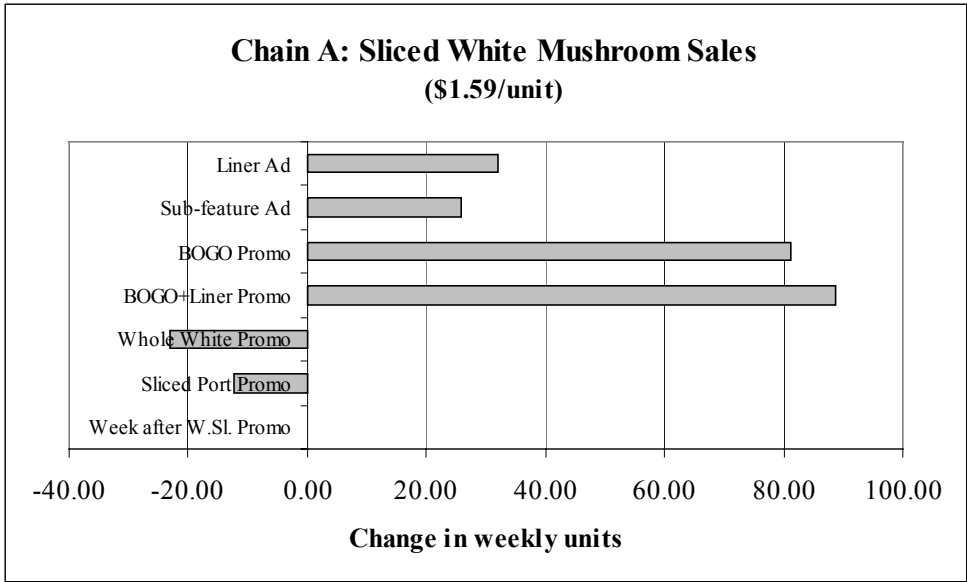


Figure 1 Chain A Sliced White Mushroom Promotions and Sales per store.

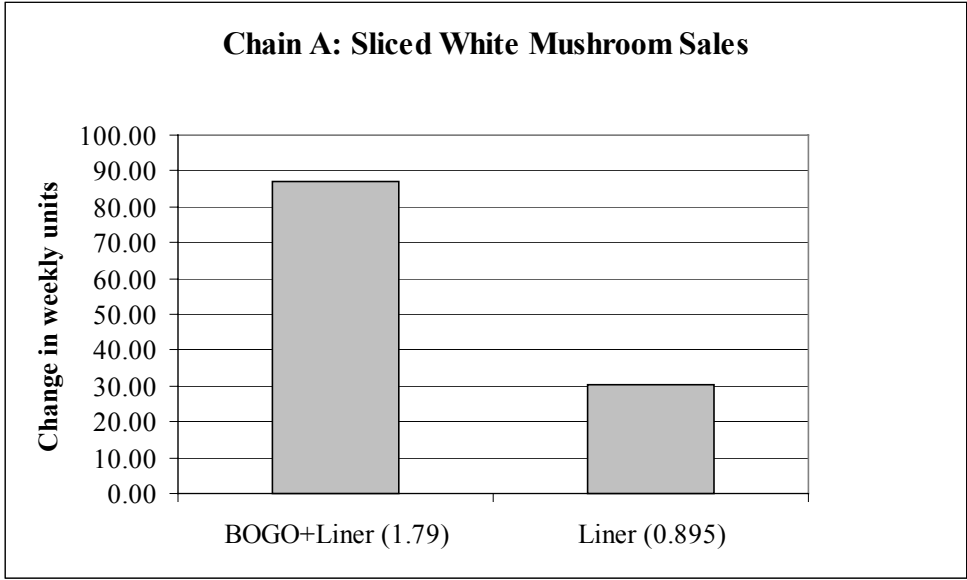


Figure 2 Chain A Sliced White Mushroom Promotions: BOGO and Half Price.

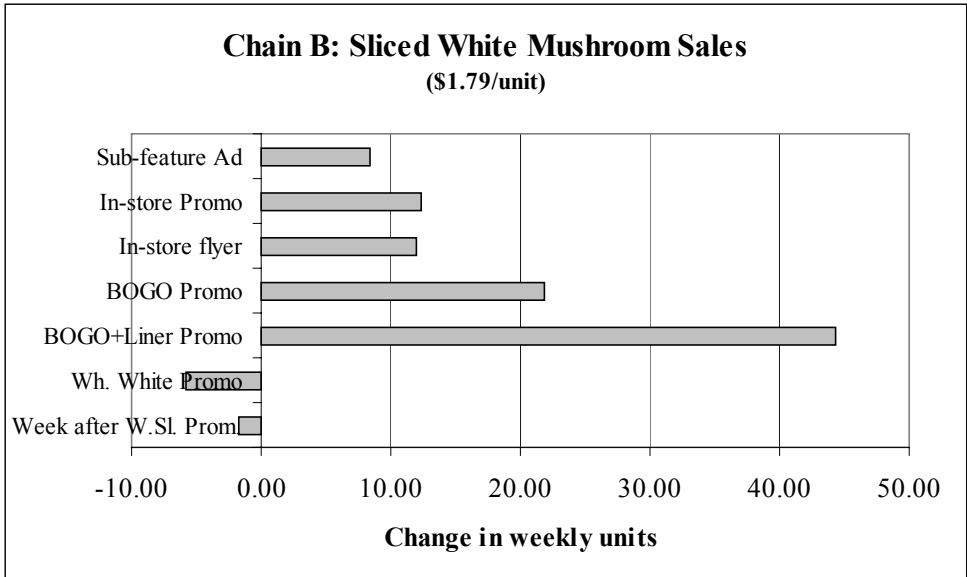


Figure 3 Chain B Sliced White Mushroom Promotions and Sales per Store.

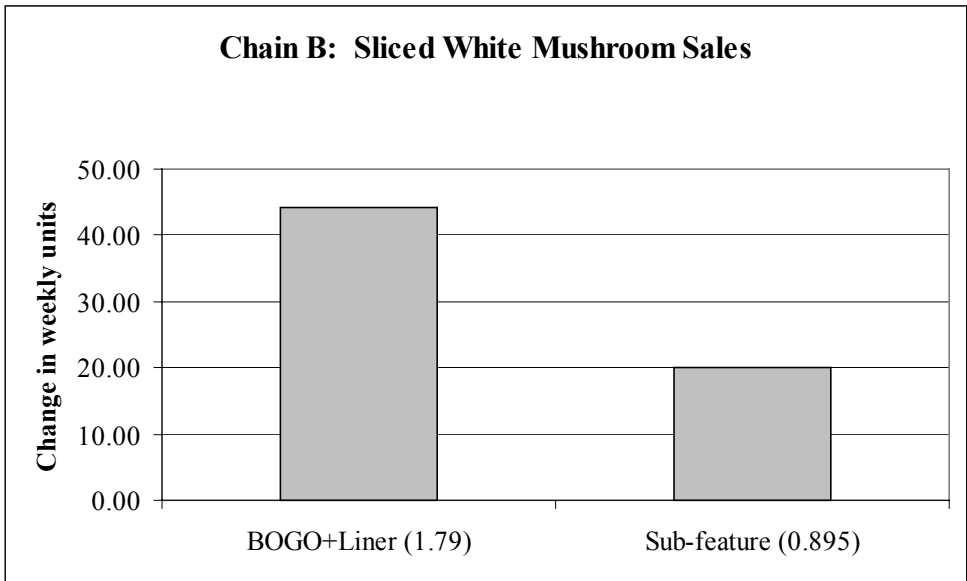


Figure 4 Chain B Mushroom Promotions: BOGO and Half Price.

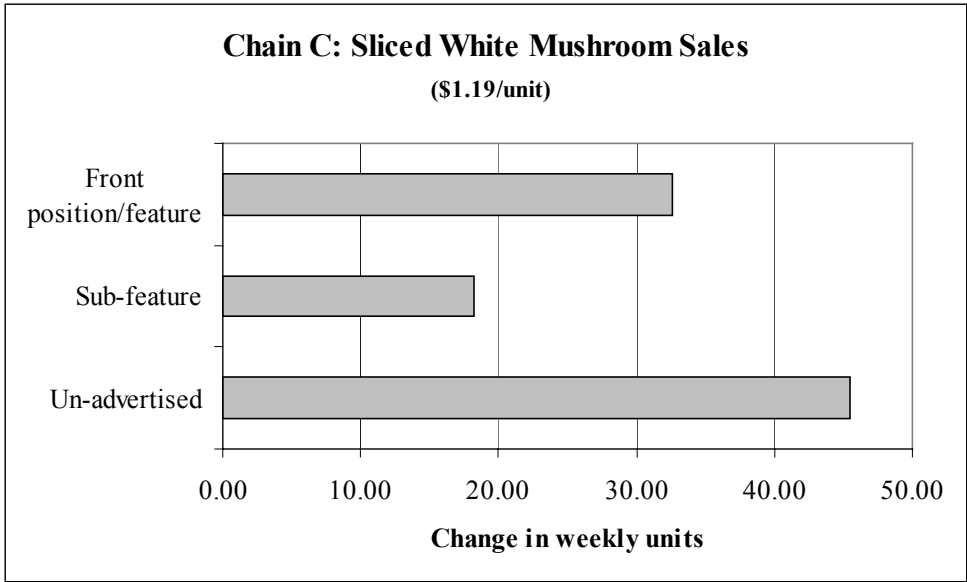


Figure 5 Chain C Sliced White Mushroom Promotions and Sales.

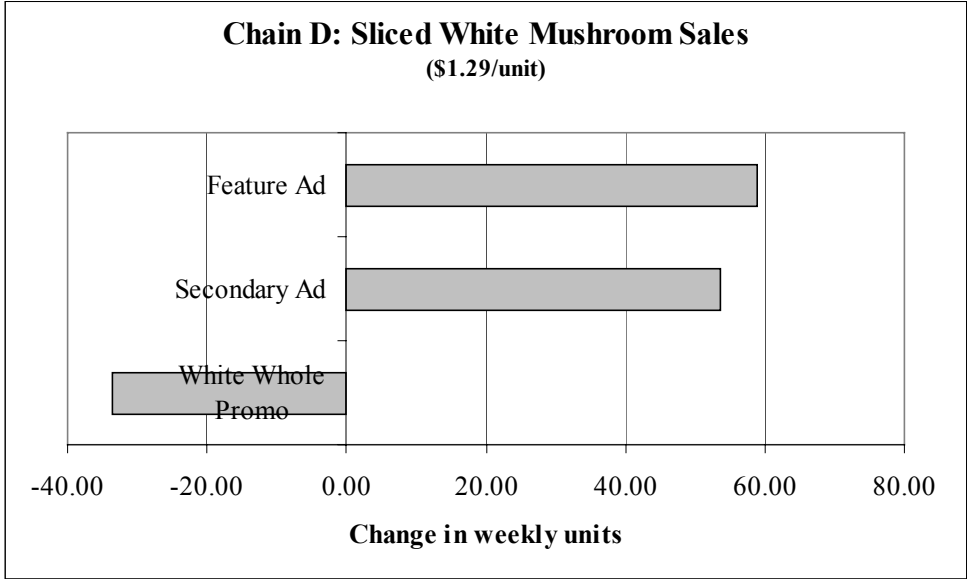


Figure 6 Chain D Sliced White Mushroom Promotions and Sales.

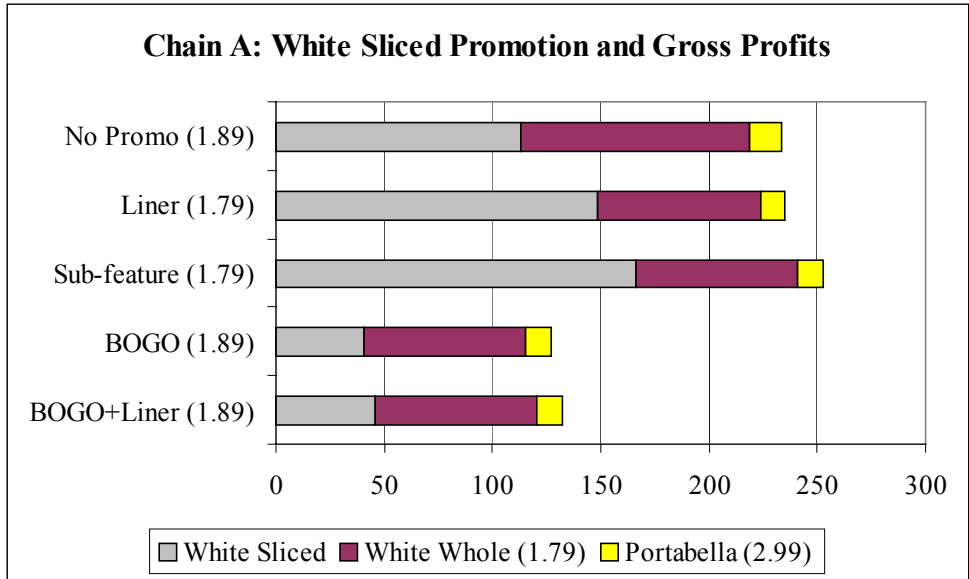


Figure 7 Chain A Mushroom Promotions and Gross Profits (\$).