

Report on sales when different methods of promotion are applied

The purpose of the analysis is to investigate the effect of three different promotion methods of crackers:

- Promotion 1 -- The crackers were on their regular shelf, but free samples were given in the store.
- Promotion 2 - The crackers were on their regular shelf, but were given additional shelf space.
- Promotion 3 - The crackers were given special display shelves at the end of the aisle in addition to their regular shelf space.

A summary of the sales of crackers in the two periods, before and during the promotion, is given in the table below. The LSMeans for sales are also given where sales before the promotion period was used as a covariate. The LSMeans give the average sales for the three promotion methods when correcting for sales before the promotion period.

Store and Promotion method	Average sales before promotion period (SE)	Average sales in promotion period (SE)	Difference in average sales in two periods	LSMeans sales in promotion period (SE)
1	23.2 (1.66)	38.2 (1.98)	15.0	39.8 (0.86)
2	26.4 (2.62)	36.0 (2.66)	9.6	34.7 (0.85)
3	25.4 (2.66)	27.2 (2.08)	1.8	26.8 (0.84)

Table 1: Sales of crackers (boxes) preceding and during the promotion period for different promotion methods (standard errors given in brackets)

A one-way analysis of covariance was performed with sales before the promotion period as covariate. The covariate was significant ($p\text{-value} < 0.0001$) as well as the promotion method ($p\text{-value} < 0.0001$). In the post-hoc comparisons the LSMeans for sales were compared for significant differences and by making use of a Bonferroni correction. All three means for sales during the promotion period differed significantly.

Promotion method 1 is strongly recommended since the adjusted average sales was the highest for this method (39.8). That is where the crackers were kept on their regular shelf but free samples were given in the store.

Promotion method 3, where the crackers were given special display shelves at the end of the aisle in addition to their regular shelf space, is not recommended at all since it gives the lowest adjusted average sales (26.8).