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THE EFFECT OF PRODUCT ARRANGEMENT AND PRICE DIFFERENTIAL ON THE CHOICE OF FAMILY - BRANDED PRODUCTS

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by

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BACKGROUND OF THIS PAPER

The authors wish to acknowledge their appreciation to the Consumer Research Institute for their financial support of this study. This paper will be presented at the Association For Consumer Research Conference at the University of Maryland, September 1-3, 1971.

ABSTRACT

The purpose of this study was to investigate in more detail the variables which influence the family - branding effect. A 3 x 2 x 6 split-plot experimental design was employed. The results of the experiment indicate that the variables of shelf arrangement, price change, and product groups are significant variables that influence the family-branding effect.

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STATEMENT OF PROBLEM

A topic consistently discussed in marketing textbooks concerns family-branding policies. These texts have suggested that under certain conditions it is advantageous for the seller to follow a family-branding policy for a group of products rather than individually marketing these products under separate brand identifications.

Based upon the phenomena of stimulus generalization, assimilation, and other similar psychological theories, the family-branding effect involves the transfer, by the consumer, of a favorable (or unfavorable) image from one product to other products bearing the same brand identification. The existence of this family-branding effect has been investigated by such researchers as Fry,[1] Kerby,[2] and Roman.[3]

The purpose of this study is to investigate in more detail the variables which influence the family-branding effect. A variable of major concern involves the shelf arrangement of family-branded products. The interest here is the situation in which family-branded products are displayed together as a group based on their common family-

brand identification (e.g., Del Monte's products grouped together) versus grouping several family brands together which are similar in terms of product classification (e.g., all brands of peas grouped together). The former condition will be called family-brand arrangement while the latter condition will be called product-class arrangement. It is hypothesized that the family-brand arrangement, since it displays family-branded products in close proximity to each other, will yield the highest measure of the family-branding effect.

A second variable of concern involves the influence that price variations among competitive brands may have on the family-branding effect. Fry found that where price differentials among brands remained constant for several product classes, the family-branding effect was greater than where price differentials varied.[4] The present study attempts to substantiate Fry's findings and investigate the presence of an interaction between price and arrangement.

The final variable to be dealt with involves the influence that different product categories (peas, cake mix, so on) may have on the family-branding effect. Since the tendency to compare alternatives depends upon many variables,[5] it was hypothesized that each product category will provide a somewhat different setting for the decision-making process and that different family-branding scores will be observed.

The following hypotheses were tested:

Hypothesis 1

> The family-branding effect will be stronger in the family-brand arrangement than in the product-class arrangement.

Hypothesis 2

> The family-branding effect will be stronger when the price differential between competing brands remains constant across products.

Hypothesis 3

> The strength of the family-branding effect will vary among product groups.

Hypothesis 4

> The combined effects for all combinations of the arrangement, price and product treatments will be additive.

METHODOLOGY

Design

A 3x2x6 split-plot design was employed. Treatment A consisted of three arrangements or display conditions. Condition one involved the family-brand arrangement while condition two involved the product-class arrangement. Condition three was identical to condition two except for the addition of labels or signs on the display indicating the identity of each product classification (e.g., tomato soup, white cake mix, so on).

Treatment B consisted of two price conditions. In condition one, price differentials among brands remained constant over similar products within a product group. Table

1 illustrates the constant price differential condition. In condition two, the price of the products were changed on two of the four brands such that a medium-priced brand was lowered to just below that of the lowest-priced brand. The actual price levels chosen for each brand were determined by a market survey in the area from which the sample was drawn. Table 2 illustrates the variable price differential condition.

This basic 2x3 design was replicated over six product groups with subjects choosing products from each of the six groups. This situation constituted the six conditions in Treatment C and provided the basis for the split-plot design. The six product groups were canned vegetables, canned fruit, cake mixes, gelatin desserts, soups and frozen vegetables.

Sample

The sample was composed of ninety homemakers drawn from church and civic groups in Ann Arbor, Michigan. Subjects were assigned on a random basis to one of the six experimental conditions.

Procedure

The experimental setting involved the use of a simulated supermarket. Mock-ups, consisting of products mounted on fiberboard displays, were grouped in sections to simulate canned goods, cake mixes, soups and other supermarket sections. Prices of the products were posted on tape strips below each product.

TABLE 1

PRICE CONDITION 1: CONSTANT PRICE DIFFERENTIALS

Brands	Canned Beans	Differential	Canned Peas	Differential
Green Giant	23¢	-	23¢	-
Del Monte	22	1¢	22	1¢
Kroger	20	3	20	3
Camelot	15	8	15	8

TABLE 2

PRICE CONDITION 2: VARIABLE PRICE DIFFERENTIALS

Brands	Canned Beans	Differential	Canned Peas	Differential
Green Giant	23¢	-	23¢	-
Del Monte	22	1¢	22	1¢
Kroger	20	3	14	9*
Camelot	15	8	15	8

* Denotes price change.

Homemakers were provided with a shopping list and asked to select items from the simulated supermarket displays. In order to make the selection procedure realistic and to induce subjects to purchase as they might in the supermarket, the suggestions of Pessemier were followed.[6] Subjects were told that one member of each group, selected at random, would receive upon completion of the experiment all the products selected by her plus the change remaining from $7.50 (an amount large enough to buy the most expensive brand of each product and still have some change remaining). This was done in an attempt to induce subjects to purchase only those brands which they would be willing to consume and to provide a setting for a realistic choice between more expensive brands and change available for other uses.

After the shopping trip, the homemakers completed a questionnaire dealing with their typical supermarket buying patterns, reactions to the simulated shopping trip and background information.

RESULTS

Data

The first source of data involved measuring the family-branding effect. A scoring system was devised to measure the tendency to select products with the same brand identification.

From each of the six product groups, subjects were requested to select four specified products. For instance,

in the canned fruit group peaches, pears, apricots and fruit cocktail were designated. If all four products were selected bearing the same brand identification, a maximum score of 4 was recorded. Scores were derived as follows:

Brands	Score
A,A,A,A	4
A,A,A,B	3
A,A,B,B	2
A,A,B,C	1
A,B,C,D	0

The second source of data involved the amount of "money spent" by the homemakers during their simulated shopping trip.

The last source of data was obtained from the questionnaire completed at the end of the shopping trip. The questionnaire covered such topics as: the degree the homemaker compared brands, the ease of the decision process, satisfaction with her choices, and so on.

Table 3 presents the family-branding mean scores for each cell in the 3x2x6 design. Table 4 presents the results of the analysis of variance performed on this data.

Arrangement Treatment

The arrangement treatment was statistically significant ($P < .10$). The family-branding condition had a higher family-branding score (3.44) than either of the product-class conditions (both 3.23). The results of this data support Hypothesis 1:

Hypothesis 1

> The family-branding effect will be stronger in the family-brand arrangement condition than in the product-class arrangement condition.

TABLE 3

FAMILY BRANDING MEAN SCORES

	Arrangements						
	Family Branding		Product Class		Product Class with Labels		
Product Categories	Price Constant	Price Change	Price Constant	Price Change	Price Constant	Price Change	Row Means
Canned Vegetables	3.00	2.40	3.00	2.73	3.07	2.27	2.74
Cake Mix	3.53	3.20	2.93	2.67	3.53	2.67	3.09
Canned Fruit	3.67	3.33	3.40	2.60	3.40	2.93	3.22
Frozen Vegetables	3.60	3.13	3.67	3.13	3.00	3.20	3.29
Soups	3.73	3.93	3.87	3.53	3.87	3.20	3.69
Gelatin	4.00	3.80	3.60	3.60	3.93	3.73	3.78
Column Means	3.59	3.30	3.41	3.04	3.47	3.00	3.30
Combined Column Means	3.44		3.23		3.23		3.30
Combined Column Means Over Arrangements	3.49	3.11					N=90

TABLE 4

ANALYSIS OF VARIANCE SUMMARY TABLE
FOR TREATMENT A, B AND C

Source	df	SS	MS	F	P
Between Subjects	89	110.632			
A (Arrangement)	2	5.493	2.746	2.70	.10
B (Price)	1	18.891	18.890	18.55	.001
A x B	2	.715	.357	.35	NS
Error (b)	84	85.533	1.018		
Within Subjects	450	395.168			
C (Product)	5	66.500	13.300	18.11	.001
A x C	10	8.374	.837	1.14	NS
B x C	5	3.431	.686	.93	NS
A x B x C	10	8.396	.840	1.14	NS
Error (w)	420	308.467	.734		

The differences among conditions in terms of the homemakers' average shopping bill were not statistically significant. The family-branding condition had a mean shopping bill of $5.53 while the product class condition and product-class with labels condition had $5.55 and $5.56 respectively.

Statistically significant differences ($P < .025$) were observed among conditions in terms of the homemakers' response to whether the decision process was easier, about the same, or more difficult during the simulated shopping than when they regularly shopped. The responses were scored 1 for easier, 2 for about the same and 3 for more difficult. The family-branding condition and the product-class condition were the most difficult with a 2.0 mean score. The product-class with labels condition was the easier with a 1.7 mean score.

No significant differences were observed among the conditions in regard to the homemakers' response to their degree of brand comparison. The following alternatives were listed:

Compared all brands (scored 3)
Compared some brands (scored 2)
Did not compare brands (scored 1)

The family-branding condition had a mean score of 2.0 while both product-class conditions had identical mean scores of 2.1.

Similarly, little difference was observed among conditions in terms of the homemakers' response to how satisfied they were with their purchases. The responses were:

Satisfied with all (scored 3)
Satisfied with most (scored 2)
Dissatisfied with most (scored 1)

The family-branding condition had a mean score of 2.4 while the product-class condition and the product-class with labels had mean scores of 2.5 and 2.4 respectively.

Price treatment

The price treatment was statistically significant ($P<.001$). The price-constant condition had a higher family-branding score (3.49) than the price-change condition (3.11). The results of this data support Hypothesis 2:

Hypothesis 2

The family-branding effect will be stronger when the price differential between competing brands remains constant across products.

A statistically significant difference ($P<.05$) was observed between the price conditions in terms of the homemakers' average shopping bill. The price-constant condition had a higher shopping bill of $5.62 as compared to $5.48 for the price-change condition.

Differences between the price conditions in terms of the homemakers' responses to the questions on ease of the decision process, degree of brand comparison and satisfaction with purchases were not statistically significant.

Product treatment

The product treatment was statistically significant ($P < .001$). Table 5 presents the results of Tukey's H.S.D. test for a posteriori multiple comparisons among conditions. The horizontal bars indicate those comparisons which were not statistically significant. The most dramatic difference among conditions relates to the gelatin and soup grouping vs. the other four product groups. Gelatin and soup have significantly higher family-branding scores than the other product groups. The results of this data support Hypothesis 3:

Hypothesis 3

The strength of the family-branding effect will vary among product groups.

The homemakers' responses to the question on the degree of brand comparison supports the above data based on family-branding scores. Statistically significant differences ($P < .001$) were observed among product groups. Both gelatin and soup were low brand-comparison product groups relative to the other four product groups.

Interactions

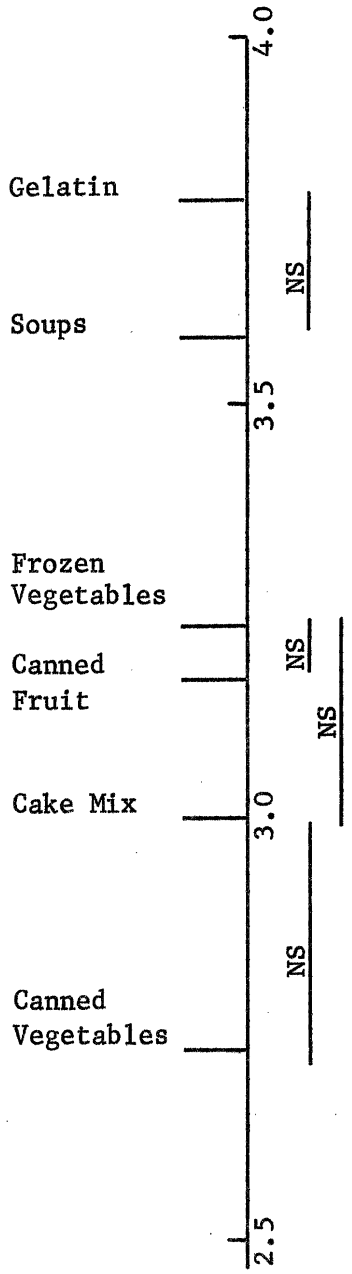
All tests for interactions were not statistically significant. Consequently, the combined effects for all combinations of the three treatments were additive. The results of this data support Hypothesis 4:

Hypothesis 4

The combined effects for all combinations of the arrangement, price and product treatments will be additive.

TABLE 5

FAMILY BRANDING SCORES FOR PRODUCT GROUPS AND TUKEY'S H.S.D. TEST FOR MULTIPLE COMPARISONS



DISCUSSION

The purpose of this study was to investigate in more detail the variables which influence the family-branding effect. The results of this experiment suggest that shelf arrangement (Treatment A) is a variable that influences the family-branding effect. Homemakers switched brands to a greater extent in the two product-class conditions than in the family-brand condition. In addition, the homemakers reported that their decision-making process was easier in the product class with labels condition. The shelf labels identifying the product class (tomato soup, white cake mix, so on) appears to be a cue that facilitates the decision-making process. The homemakers reported high satisfaction scores for all three arrangement conditions. While not statistically significant, the homemakers reported slightly higher brand-comparison behavior in the two product-class conditions as compared to the family-branding condition.

On balance, it appears that the product-class condition has some advantages from the homemakers' viewpoint. Brand-switching behavior was more prominant in these two conditions. In addition, the homemakers found the shelf labels to be helpful in their decision-making process.

The price variable (Treatment B) had a pronounced influence on the family-branding effect. This influence was reflected in a lower-than-average-shopping bill for

the price-change condition. Homemakers appear sensitive to price changes and easily overcome any brand loyalty in order to take advantage of a bargain price. This finding supports the previous research of Fry.[7]

The family-branding effect is also conditional on the product group (peas, cake mix, so on) under consideration. While all six product groups exhibited differences in the family-branding effect, the groups of gelatin and soup had very high brand-loyalty measures. This finding was supported by the homemakers' response that very little brand comparison was involved in the decision process for gelatin and soup. It is beyond the scope of this study to explain the reason for these differences.

SUMMARY

This study has shown that the variables of shelf arrangement, price change, and product groups are important variables that influence the family-branding effect. The product-class arrangement appears to have advantages in terms of the consumers' decision process. Homemakers readily switch brands if theyperceive that another brand offers a price advantage. Dramatic differences exist in the degree of brand loyalty for various product groups. Finally, these variables did not interact to produce new results beyond the additive combination of the variables.

FOOTNOTES

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Colin F. Neuhaus is an Assistant Professor of Marketing, School of Business Administration, Eastern Michigan University.

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