Market Segmentation of Supermarket Floral Customers

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Abstract. A profile of consumer groups who purchased floral products from supermarkets was studied with a 106-item questionnaire developed to determine the domain of issues affecting supermarket floral purchases. Thirty-four factors were identified in factor analysis and formed the basis for cluster analysis. Cluster analysis was performed on survey responses to create five homogeneous consumer segments. Demographic data and floral-purchase factors were used to profile market segments and distinguishing elements. Fourteen factors contributed most to the differences between segments, including factors of product assortment, number of purchases, degree of personal use, and package importance. Clusters can be used by supermarket and florist management as potential target markets.

Improved data analysis has helped marketing researchers include many variables in their models. Before computerization, most consumer research was conducted using only easily measured demographic variables such as age, income, or education. Psychographic characteristics, such as attitudes and preferences, are now incorporated into marketing research and analyzed along with demographic characteristics, producing more accurate consumer profiles.

Not all people have similar product needs and wants, nor demand the same products and services. Market segmentation enables management to capitalize on the differential demand for specific products and services. Managers who can identify consumer segments can more efficiently allocate resources by targeting products and services designed to meet the needs of those consumers. Demographic and psychographic characteristics provide the basis for market segmentation, or a division of consumers into homogeneous groups based on consumer attitudes, interests, and opinions (Atlas, 1984; Greenberg and Frank, 1983).

Several studies have examined consumer preferences for floral products (Hutchinson and Robertson, 1979; Market Facts, 1989; Robertson and Chatfield, 1982), while others profiled consumers who purchased floral products in supermarkets (Baker, 1961; Garbarino, 1963; Goldsberry et al., 1977; Miller, 1977; Robertson and Hahn, 1978).

Consumer attitudes toward purchasing a product used in models predicting purchasing behavior (Fishbein and Ajzen, 1975) form the basis for a psychographic market segmentation. A segmentation of supermarket floral consumers would enable supermarket managers to target specific floral products to specific market segments and would assist in developing effective marketing strategies that more accurately reflect consumer demands than heretofore.

The purpose of our research was to segment supermarket floral consumers on the basis of demographic characteristics and floral-purchase factors, including their attitudes toward floral products, types of products purchased, and the uses of floral-product purchases in the recent past.

A 106-item questionnaire was constructed to measure the domain of issues pertaining to supermarket floral purchases. Structured response questions were developed to measure attitudes, product issues, and demographic characteristics. Variables were mea-

Table 1. Correlations >0.20 between canonical discriminant functions and discriminating factors for supermarket floral-purchasing factors.[z]

Description	Function 1[y]	Function 2[y]	Function 3[y]	Function 4[y]
Supermarket floral product assortment	0.41		0.28	
Delivery importance	−0.27	0.20		
Adding value	0.26	0.21		
Flower color importance	0.21			
Number of purchases		0.35		
Personal use		0.28	−0.28	
Formal product preference		0.25	0.20	
Price importance			−0.37	
Postharvest knowledge			0.26	
Bright-color preference			0.24	
Package importance	0.24			−0.43
Purchasing for mother				0.34
Holiday purchases				−0.25
Try new kinds of floral products	0.21			0.22

[z]A more complete description of floral purchasing factors appears in Behe (1985).
[y]Discriminant function significant at <0.01 using Wilk's lambda statistic.

sured using categorical nominal, semantic differential, five-point Likert, and five- and nine-point ordinal scales. For the purpose of this study, a floral product was defined as a fresh product of cut flowers and potted blooming or foliage plants.

The survey instrument was pretested in a Columbus, Ohio, supermarket and modified. Columbus is a popular test market because it has three desirable test market characteristics: moderately large population, relative geographic isolation, and a population with demographic characteristics representative of the average American (Peterson, 1982). In Dec. 1984 and Jan. 1985, 1369 modified surveys were distributed in eight Ohio supermarkets. Survey responses were used in a principal-components factor analysis to reduce the 106 questions to the more manageable 34 factors that affect supermarket floral purchases (Behe, 1985).

Factor scores were calculated based on respondents answers to questions and formed the basis for the cluster analyses using SPSSP (version X) clustering routine. Ward's method and a squared Euclidean distance measure were used (SPSS, 1983). The method was a hierarchical, agglomerative method of clustering.

Cluster analysis is a group of multivariate statistical techniques that arrange homogeneous individuals within groups, yet between the groups, the individuals are heterogeneous. It is primarily a technique for hypothesis generation rather than hypothesis testing. Heuristic procedures are the most commonly used techniques to determine the number of clusters to retain (Aldenderfer and Blanshfield, 1984). Clusters or groups are then considered market segments, since the clusters are comprised of consumers with similar characteristics.

Demographic data were standardized using the condescriptive procedure (SPSS, 1983). Occupational data were transformed from open-ended response data to a three-digit code (U.S. Employment Service, 1977). Standardized demographic data, combined with factor scores, were used in a discriminant

analysis that was used to identify distinguishing characteristics of the clusters. The discriminant analysis had three purposes: 1) to profile existing clusters, 2) to identify factors that discriminate between the clusters, and 3) to assess the internal validity of the functions by classifying unclustered cases (Crask and Perreault, 1977). The discriminant analysis derived orthogonal functions simultaneously from direct entry of all factors. The discriminant function coefficients identified the direction and magnitude of the relationship between the dependent clusters and the independent factors.

A second discriminant analysis was performed to determine the internal validity of the functions using a split-sample technique. The sample was randomly divided, and the second discriminant analysis was performed on 75% of the sample. The unused cases (25%) were classified to determine the internal validity of the functions. This is the most frequently used method of validation for unclassified respondents (Crask and Perreault, 1977). The accuracy of assigning unclassified respondents to clusters is a measure of the internal validity of the discriminant functions.

The first discriminant analysis showed four significant functions, with 14 factors discriminating most between the segments (Table 1). Function 1 was related most strongly with the consumer's perception of the product assortment. Function 2 related to the number of floral purchases a consumer had made. Function 3 related to the importance of price. Function 4 related to the importance of the floral package. The largest canonical correlations that distinguished the segments were the supermarket floral-product assortment perception, floral package importance, the number of floral purchases, purchases made for mother, and price importance.

A second discriminant analysis was conducted to assess the functions' internal validity. It was conducted by splitting the sample at random, clustering 75% of the sample respondents, and classifying unclustered respondents using the four discriminant func-

tions. Reading across the diagonal, no fewer than 55% of the respondents were correctly classified by the discriminant functions (Table 2). This can be compared with a random probability of assignment to a cluster of 20% (five clusters), or assignment by chance to the largest cluster of 30%. The percentage of correctly classified cases is somewhat analogous to the R^2 value in a multiple regression (Morrison, 1969). Thus, the functions had a high degree of internal validity.

The consumer-segment profiles were derived from cluster centroids, or group means, on each of the factors and standardized demographic variables. The five clusters were subjectively named Friendly Buyers, Married Men, Selfers, Annual Buyers, and Educated Mothers based on attitudes, floral buying behavior, and demographic characteristics of the cluster members.

The first segment, the Friendly Buyers, comprised 20% of supermarket floral customers. These individuals were between 25 and 34 years old and had at least some college education. The segment was comprised predominantly of females from households with an annual income in 1983 of $15,000 to $19,000. Their most distinguishing characteristics were that they purchased floral products for coworkers and for their mothers. They purchased flowers for important events in the lives of others, but purchased few floral products for themselves. This segment had the perception that supermarkets sell the same kinds of floral products as traditional retail florists. Flower color and package were important product attributes to them, while price was relatively unimportant.

The second consumer segment identified was named Married Men. This segment comprised an additional 20% of the supermarket customer sample. This group consisted of individuals who mostly were between 45 and 54 years old, with at least some college education. Members of this group were mainly from households with a 1983 income between $20,000 and $24,999. Consumers

Table 2. Classification (results for cases not used in second analysis) of unclustered respondents to test internal validity of the four discriminant functions.

Actual cluster membership	Percentage of respondents classified in each cluster				
	Friendly Buyers	Married Men	Selfers	Annuals	Educated Mothers
Friendly Buyers (n = 37)	62[z]	8	11	14	5
Married Men (n = 29)	17	55[z]	11	17	0
Selfers (n = 21)	5	19	57[z]	19	0
Annuals (n = 36)	11	8	14	67[z]	0
Educated Mothers (n = 7)	0	0	0	29	71[z]

[z]Percentage of correctly classified respondents was greater than chance classification probability (20%) or largest cluster classification (30%).

in this segment purchased floral products most often for their spouses and did not buy flowers for their parents or other family members. They perceived supermarkets as not selling the same kinds of floral products as traditional retail florists. To them, price and fragrance were important product attributes, while the package was relatively unimportant.

The third consumer segment, the Selfers, comprised 30% of the sample. These consumers were younger, between 25 and 34 years old, with at least some college education. They were predominantly females from households with a 1983 income between $15,000 and $19,999. These consumers mostly bought floral products for their own use. They purchased a floral product the second most frequent number of times. The Selfers enjoyed growing flowers in their gardens and used them in creating their own floral designs. This consumer segment perceived supermarkets as selling the same kinds of floral products as traditional retail florists. Price of flowers was important to them, while color and package were relatively unimportant.

The fourth consumer segment, the Annual Buyers, comprised 25% of the sample of customers. As the name suggests,. the outstanding characteristic of these floral buyers was that they purchased flowers an average of only once per year. The Annual Buyers were between 35 and 44 years old and had some college education. This segment was predominantly females from households with an 1983 income between $20,000 and $24,999. They did not purchase floral products to give as a gift to a specific individual, but rather used the floral product as a home decoration. They perceived supermarkets as not selling the same kinds of flowers as traditional retail florists. They were indifferent to the importance of product attributes such as color and fragrance.

The Educated Mothers segment was the fifth consumer segment identified and comprised only 5% of the sample. These individuals were between 45 and 54 years old and were the most highly educated consumer segment of the five identified. The women were predominantly from households with an 1983 income between $30,000 and $34,999. The most outstanding characteristic of this consumer segment was that they had purchased floral products for holidays such as Thanksgiving, Christmas, and Easter. These consumers had purchased flowers for weddings more often than other consumer segments. Price and care instructions were important product attributes to them, while color was relatively unimportant.

The five descriptive profiles of supermarket floral consumers provide management with information about consumers who purchased their floral products. Examining the entire market in five segments rather than as a homogeneous whole enables managers to develop a more accurate picture of the customers they serve. Information about the specific segments consists of characteristics of the consumers themselves as well as the products they purchased in the past. Past purchase behavior is a component in predicting future purchases (Engel and Blackwell, 1982). Understanding significant characteristics of consumer groups, as well as the products they recently purchased, can help managers make more informed decisions about the floral products they might choose to target to these consumer segments in the future.

Friendly Buyers could be targeted with casual bouquets in a variety of colors and prices. Since they purchase floral gifts for others, products suitable for gifts to parents, friends, and coworkers could be targeted to this segment by point-of-purchase materials and supplemental products, such as plant sleeves or care tags.

Prepackaged, clearly priced single stems could be used to target the Married Men segment. Products for this consumer segment should be appropriate for a spouse and should be advertised as such to remind them of upcoming birthdays or anniversaries. Products that are fragrant would appeal to this segment, since fragrance was an important product attribute to them.

The Selfers segment could be targeted with products that could be assembled, since this segment enjoyed being creative with floral products. Do-it-yourself products could be identified with point-of-purchase materials. Selfers have a positive perception of the product assortment in supermarkets, and price is important to them. Comparative pricing with florists would encourage them to purchase from the retailer with the lowest prices.

Since information was collected immediately before Christmas, and a substantial portion of consumers indicated that they had only purchased a floral product once that year, it is very likely that potted poinsettias are the only floral product Annual Buyers purchased. Since these consumers use floral products as home decorations rather than as gifts, plant accessories emphasizing home decorations could be promoted. This segment has a poor perception of supermarket floral-product assortment and is indifferent to most floral-product attributes; therefore, they may not warrant products specifically targeted to them. Stimulating floral purchases among members of this group may be difficult because they consider few other uses for flowers.

Educated Mothers use floral products primarily on their dinner tables. Flowers should be targeted for this use specifically. Price and package are important product attributes and should be promoted in advertising and point-of-purchase materials. Care and handling information is also important to them. Instructions and a floral preservative should be included with each purchase. Although this segment was the smallest in comparison to the other four segments, these consumers buy floral products most often. They are a viable but small target for supermarkets, yet are likely a profitable one.

The five floral consumer segments profiled in this study are identifiable by demographic and psychographic characteristics. Several of these segments are substantial in size. Supermarket and other floral managers can better understand their consumers by examining these five consumer segment profiles, rather than viewing consumers as a homogeneous entity. This information can help managers make better decisions concerning the floral product assortment they market. Considering the differences in the five consumer segments, management can modify the assortment of floral products they market and target them to specific consumer segments. Floral products need not be targeted to each segment, rather segments most profitable to individual stores could be selected for targeting. More effective market-

461

ing strategies can now be developed by selecting one or more potential markets and targeting specific floral products toward these market segments.

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