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A MARKET SEGMENTATION  
OF SUPERMARKET FLORAL PRODUCT CONSUMERS  
BASED UPON FACTORS IMPACTING THE FLORAL PURCHASE DECISION

A Thesis

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#### FIELDS OF STUDY

Major Field: Horticultural Marketing

## TABLE OF CONTENTS

	Page
ACKNOWLEDGEMENTS . . . . .	ii
VITA . . . . .	iii
LIST OF TABLES . . . . .	vii
LIST OF FIGURES . . . . .	viii
INTRODUCTION . . . . .	1
LITERATURE REVIEW	
Floriculture Industry Statistics . . . . .	5
Florist Evolution . . . . .	8
Supermarket Evolution . . . . .	9
In-Store Floral Marketing . . . . .	11
The Floral Consumer . . . . .	14
The Consumer Purchase Decision . . . . .	20
SECTION I: Factors Impacting The Purchase of Supermarket Floral Products.	
Abstract . . . . .	24
Introduction . . . . .	25
Methodology . . . . .	25
Results . . . . .	28
Discussion . . . . .	36
Conclusions . . . . .	38
Literature Cited . . . . .	47
SECTION II: A Market Segmentation of Supermarket Floral Floral Product Consumers.	
Abstract . . . . .	49
Introduction . . . . .	50
Methodology . . . . .	50
Results . . . . .	53
Discussion . . . . .	57
Literature Cited . . . . .	63
CONCLUSIONS . . . . .	65
LIST OF REFERENCES . . . . .	67

## APPENDICES

A. Supermarket Floral Survey . . . . .	73
B. Means and Standard Deviations of 99 Survey Issues . . . . .	80
C. Means and Standard Deviations of Five Consumer Segments on Five Demographic Variables and 34 Floral Purchasing Factors . . . . .	85
D. Correlations Between Canonical Discriminant Functions and 34 Floral Factors . . . . .	88

# LIST OF TABLES

TABLE	PAGE
1. Value per square foot, change in U.S. wholesale value, and unit production for 17 crops . . . . .	6
2. Factor loading matrix of floral purchase factors on floral purchase variables . . . . .	40
3. Correlations between canonical discriminant functions and discriminating factors greater than .20 for supermarket floral purchasing factors . . . . .	61
4. Classification of clustered and unclustered respondents to test internal validity of four discriminant functions . . .	62
5. Means and standard deviations of 99 survey issues . . . . .	81
6. Means of five consumer segments on five demographic variables and 34 floral purchasing factors . . . . .	86
7. Correlations between canonical discriminant functions and 34 floral factors . . . . .	89



## LIST OF FIGURES

FIGURES	PAGE
1. Differences in fusion coefficients . . . . .	60

## INTRODUCTION

Individuals have, throughout time, expressed emotions through the use of floral products. Flowers have been part of ceremonial rites for man from birth to death. Many of these traditions continue today. Floral products have been an important part of life and will continue to have a role in society in the future.

Flowers meet emotional needs, not basic needs. Maslov described a needs hierarchy in which basic needs, food and shelter, must be met before emotional needs, education and self-actualization. Income earned by consumers is usually first spent on meeting basic needs. Consumers then spend discretionary income to fill emotional needs after filling basic needs.

We are in an era of increasing affluence of the middle class. Men and women born in the 1950's and early 1960's, the Baby Boom generation, are in the workforce today. They earn better salaries than their parents and enjoy a more affluent lifestyle. Many of these individuals can now focus on fulfilling their emotional needs because they are meeting their basic needs. This affluent middle class likely possesses a positive attitude toward flowers and can afford them. They are a ripe target market for discretionary products, like flowers.

Supermarkets evolved as the anthesis to the local grocery store, and some supermarkets are further evolving into superstores. Superstores include many non-food items, as much as fifty percent,

in their product assortment. As early as the 1950's, supermarkets began selling floral products to compliment their product assortment and allieviate seasonal surpluses local flower growers experienced. Because of their perishability and unique care and handling requirements, supermarket management only recently began to commit to having higher quality floral products available for sale. Floral departments are being separated from the produce department and are becomming a profitable product line in the supermarket.

The floriculture industry in the U.S. has been evolving to meet changes from increased costs of production, specifically fuel and labor, increased imports of cut flowers from Holland, Columbia, and Israel and changes in legislation regulating imports of floral products. One of the most significant changes the industry faces is the merchandising of floral products by supermarkets. Concern over supermarket merchandising of floral products focuses on the effects of merchandising lower quality floral products, initially seen in supermarkets due to lack of post-production care information, the effect on the traditional florist customer base, and the effect on industry sales and retail market shares. If growers, wholesalers, and retailers had an understanding of who purchases floral products in supermarkets more accurate managerial decisions could be made.

Two basic precepts of marketing are customer segmentation and product targeting. A better understanding of the consumer who purchased flowers and his motives and purposes for purchasing flowers will enable management to segment the market for floral products and target specific products to those target markets.

The purpose of this study was to:

1. Identify factors impacting the floral purchase made in supermarkets, and
2. Segment the consumer market for floral products in supermarkets, yielding a profile of those consumer segments.

These objectives will be achieved by a survey of the domain of issues impacting the floral purchase. Survey data will be analyzed multivariately to yield a comprehensive profile of supermarket floral product purchasers, which cannot be accomplished by a demographic segmentation alone. By segmenting consumers on the uses they have for floral products, and their attitudes toward floral products the products can be modified to suit the consumers' uses and attitudes.

The analysis will be in three stages: a factor, cluster, and discriminant analysis. Factor analysis will extract the major components affecting floral purchases. Cluster analysis will provide one possible consumer segmentation based upon the factor analysis. Discriminant analysis will provide an assessment of the internal validity of the clustering solution and determine the

factors or demographic variables which most distinguish the consumer segments. The result of this three stage analysis will be a comprehensive consumer profile upon which growers, wholesalers, and retailers can base managerial decisions concerning floral products.

## CHAPTER 1

### LITERATURE REVIEW

#### Floriculture Industry Status

The floriculture industry is similar to other agricultural industries in that floral products are highly perishable and require specific care and handling practices. One unique characteristic of the floriculture industry is the seasonality of demand for floral products (69). This characteristic is similar to several agricultural commodities such as cranberries, apple cider, and turkey which have a seasonal demand (46). However, the products of the floricultural industry are distinguished from many other agricultural crops in that they satisfy an emotional need rather than a basic need for food.

Over the past 10 years, the value of the U.S. wholesale market for floral products has generally increased in unit production and sales. Increases in value for minicarnations, hybrid tea and sweetheart roses, potted chrysanthemums, geraniums, Easter lilies, poinsettias, foliage plants, and bedding plants were noted in 1984 over 1982 production statistics (10, 16). However, increases in unit production for only eight crops were seen in 1984 production statistics. These increases in value were not always accompanied with an increase in unit production (Table 1). In instances where increases in value not observed with an increase in production can be attributed to increases in price.

Table 1. Value per square foot, change in U.S. wholesale value, and unit production for 17 crops.

Crop	Wholesale value per square foot <sup>1</sup>	Change in wholesale value <sup>2</sup>	Change in unit production <sup>3</sup>
Sweetheart rose	\$ 5.04	+ 11%	0
Potted chrysanthemum	\$ 4.43	+ 14%	+ 11%
Hybrid tea roses	\$ 4.40	+ 13%	- 20%
Lilies	\$ 4.28	+ 17%	- 2%
Vegetable bedding plants <sup>5</sup>	\$ 3.38	+ 14%	+ 7%
Flowering bedding plants <sup>5</sup>	\$ 3.28	+ 39%	+ 27%
Geranium	\$ 2.83	+ 32%	+ 34%
Hydrangea	\$ 2.67	+ 65%	- 22%
Poinsettia	\$ 2.34	+ 35%	+ 22%
Standard Carnation	\$ 2.21	- 16%	n.r. <sup>4</sup>
Standard Chrysanthemum <sup>5</sup>	\$ 2.01	- 1%	- 22%
Mini-carnation	\$ 1.97	+ 40%	+ 52%
Snapdragon	\$ 1.90	+ 64%	+ 51%
Foliage <sup>5</sup>	\$ 1.84	- 19%	n.r.
Pompon chrysanthemum <sup>5</sup>	\$ 1.43	- 19%	- 26%
Gladolia <sup>5</sup>	\$ .79	+ 9%	n.r.
Anthurium	n.r.	n.r.	+ 22%

<sup>1</sup> Value as reported in 1984.

<sup>2</sup> Calculated change in wholesale value of (1984 - 1982) over 1982.

<sup>3</sup> Calculated change in unit production of (1984 - 1982) over 1982.

<sup>4</sup> Figure not reported.

<sup>5</sup> Field production included with production under glazing.

Source: USDA Crop Reporting Service 1984 Crop Production Bulletin

Demand for foliage products increased dramatically in the late 1970's in response to changing consumer attitudes and lifestyles which began to emphasize self-gratification and a back-to-nature atmosphere (40). Foliage demand has since leveled off and remains stable today. Rapid growth has also been noticed for flowering potted plants and bedding plants (72). Yet during the same time period, the market for cut flowers has not experienced a boom in demand (10) and may be further developed. Domestic production does not account for all the increases in cut flowers sales, and the sales increases can be attributed to increased imports of cut flowers.

An increasing portion of the cut flowers sold in the U.S. are imported. In 1980, Columbia exported 50% of the carnations, 50% of the pompon chrysanthemums, and 8.5% of the roses sold in this country (11). The Netherlands, Israel, and Mexico also exported a large percentage of the cut flowers sold in the U.S. in 1980 (68). The demand for imported cut flowers increased at an annual rate of 7.1% from 1981 to 1984, with domestic demand increasing only 1% and foreign demand increasing over 16% (58). Also during this time, the imports' share of the cut flower market grew from 37% to 48%. The cut flowers are shipped by air into several major distribution points including New York, Miami, Los Angeles, and San Francisco.



### Florist Evolution

Traditionally, a variety of flowering plants, foliage plants, and cut flowers have been domestically grown and distributed to wholesalers in the U.S. Wholesalers assembled the retail florists' product mix that was sold by local florists. In the 1950's demand was very seasonal, primarily for funerals, weddings, and a few holidays such as Christmas and Easter (66). In the 1970's, florists sales of foliage plants increased in response to the "green revolution". Also, speciality plant stores were built to capitalize on the high demand for foliage plants.

Retail outlets have evolved due to the constant internal and external changes impacting them. Retail outlets have life cycles similar to products. Through adaptive behavior, retail florists have adopted several merchandising and marketing strategies. They include wire-order services, cash-and-carry merchandising, and delivery.

Today, the retail florist has diversified to incorporate several merchandising strategies. Most retail florists still sell the majority of fresh flowers during traditional holidays and for funerals and weddings. Some retailers have expanded thier non-holiday business in order to capture the everyday cash-and-carry market. Others have emphasized telephone orders to capitalize on consumers who have little time to shop in the store. Sales of giftware as accessory items for floral products have increased in some florists to account for more than half of total store sales.

Florists differ in the amount of service they provide the customer with some maintaining full-service functions and other reducing services, such as delivery or custom designing, to a minimum.

### Supermarket Evolution

The supermarkets of today began in an abandoned New York warehouse in 1930, when Michael Cullen offered lower priced food and non-food products, longer store hours than competitive grocers, and self-service. The highest profit margin he maintained was 20% on cost (60). By 1980, the number of supermarkets had grown to 28,000 in the continental U.S. (70), compared with 36,000 florist shops counted in 1979 (11). The number of potential floral outlets, supermarkets, is approaching the number of established floral retailers.

The Food Marketing Institute (1982) defined a supermarket as a retail food store with annual sales of at least two million dollars in sales. A conventional supermarket was distinguished from a super-store by store square footage. Conventional supermarkets had less than 30,000 square feet while a super-store has greater than 30,000 square foot with an expanded food and non-food product lines (14).

The supermarkets as retail outlets are evolving to superstores, emulating the hypermarkets of Europe. A hypermarket is a store which sells many diverse product lines, including groceries, clothing, hardware, and appliances, and utilizes warehousing techniques (60).

Hypermarkets shift many of the service functions, such as stocking shelves, to either the shopper or supplier. These stores are four to five times the size of traditional supermarkets and emphasize larger product sizes for infrequent shoppers. The hypermarkets also have more power in the distribution channel than other members, often dictating to the producer specifications of the products package (47).

Superstores in the U.S., such as Biggs in Cincinnati, most closely resemble the hypermarkets of Europe. Superstores may offer as much as 50% of their product lines as non-food products to capture a portion of the consumer market that is both price and time sensitive. Higher gross margins on non-food items have enabled superstores to be more price competitive on food items. Some chain supermarkets are incorporating more non-food items into their product assortment and more closely resemble the superstores than traditional grocery stores.

Food retailers operate several types of outlets, among them are supermarkets and grocery stores. Supermarkets are often thought to be synonymous with chain stores. This is actually not the case. A supermarket can be described as a "full-line, departmentalized, cash-and-carry, self-service food store" (46) with minimum annual sales of two million dollars. A grocery store sells less than two million dollars per year, has a limited assortment of products, and offers a full line of services. A chain is a company which operates

a total of four or more stores (12). In 1982, there were 28,185 supermarkets in the continental U.S. (69).

The demand for food through supermarkets does vary from month to month. This can be attributed somewhat to the seasonality of produce, most of which is sold from July through November, and large meal-oriented holidays occurring in November and December. An average month would be expected to have 8.3% of yearly sales. December is a peak month for grocery store sales with 8.8% of the yearly volume while February is a slow month with 7.9% of yearly sales (12). Food sales also fluctuate by the day of the week, with the majority of sales occurring on weekend days rather than weekdays.

The produce department is second to the meat department in creating the image of the supermarket and attracting customers. Gross margins in the produce department are higher than those in any other department (57). Produce accounts for 8-10% of the store square footage, yet accounts for 8-20% of total sales. The average gross margin in the produce department is 32% (57). One quarter of the units of produce is sold on Fridays.

#### In-store Floral Marketing

The retail market for floral sales can be divided into four major categories: florists, garden centers and nurseries, mass-marketers, and others. One of the major changes in floral retailing has been increased floral product distribution through mass marketers, primarily supermarkets. Florists had the largest percentage of floral

sales in dollars with a 63% market share, followed by nurserys and garden centers with 12% of the market (11). Of the three kinds of mass-market outlets, supermarkets enjoy the largest share (8.6%) of floral product sales followed by discount stores (6.2%) and department stores (3.5%) (9).

Although supermarkets have been selling floral products since the 1950's it was not until 1970 that their merchandising strategies were studied. Dr. George Kress, a professor of marketing at the Colorado State University, identified and followed the supermarkets marketing floral products several times since his initial study in 1970 (48, 49, 50, 51, 52, 53, 54, 55, 56).

His last and most comprehensive study was published in 1983. Kress found that 71% of chain stores sold floral products in 1975 compared with 95% in 1983. Similarly, 26% of affiliated stores sold floral products as compared with 48% in 1983. Supermarkets which sold flowers sold them on a regular or seasonal basis. In 1973, 46% of the stores sold them on a regular basis, 42% sold them on a seasonal basis, and 86% sold them on a regular or seasonal basis in 1983 (51, 56). The increase in number of stores handling floral products on a regular or seasonal basis demonstrates the potential profitability of this product line to the supermarket.

Many (87%) firms which sold cut flowers in 1973 displayed them in open buckets. This number declined to 67% in 1983. The remaining percentage of stores displayed flowers in open or closed coolers.

Over 30% of all stores had permanent floral displays for potted plants in 1973, compared with 38% in 1983. The average seasonal in-store selling area was less than 75 square feet in 1973. Firms with permanent in-store display areas devoted an average of 128 square feet compared with 290 square feet in 1983. Only 21% of the firms had identifiable permanent floral displays compared with 35% in 1983. Less than three percent of the firms employed full-time floral attendants, compared with seven percent in 1983. (52, 56). Floral training for employees can reportedly boost sales thirty to fifty percent (4). The adoption of current technologies, such as coolers, and an increase in size of floral departments demonstrates an increased commitment on the supermarkets behalf to provide a better quality floral product. Yet, the supermarkets are still not willing to commit additional labor resources to this department.

The mark-up on retail of floral products averaged between 35% and 50% in 1975, and was close to 50% on all products in 1983. Lower mark ups were used on potted and bedding plants, whereas higher mark ups were used on cut flowers. High mark-up cut flowers are a profitable product line which supermarkets may expand. The average weekly sales were \$470 for permanent floral departments in 1975, and were \$743 in 1983. For seasonal departments, the average weekly sales were \$205 and grew to \$374. Potted plants accounted for nearly 70% of all floral sales in 1971, with bedding plants and cut flowers accounting for the remaining percentages. In 1983, potted plants

accounted for 62% of the market, bedding plants 8%, cuts 18%, and floral accessories 12%. Since the market for potted plants has stabilized somewhat, and the share of cut flowers is relatively small, increasing cut flower sales is an attractive market potential for supermarkets.

### The Floral Consumer

In 1985, there were 232 million people living in the U.S. This number is expected to grow at a rate of 9.6% until 1990, when the rate of growth is expected to decrease to 6.9%. The population is comprised of 51% males and 49% females (25). Marketers distinguish between households, which are persons who occupy a 'housing unit', and population. Traditionally, households have been comprised of a gainfully employed father, a mother as a housewife, and children present. In 1982, only 19% of American households fit that description mainly because 56% of the workforce was comprised of women. The disappearance of the traditional household is also partly accounted for by more single adults living alone. In 1980, 22% of the U.S. households were single households. With fewer individuals living in a household, the increasing number of households has a definite impact on consumption and disposable income.

U.S. consumers are becoming more highly educated. Nearly 65% of the American population over 25 years old had at least graduated from high school in 1980, compared with 59% in 1975. Consumers have noticed a steady increase in earnings, even during a recession.

This is most evident in the 25 to 34 year age group, which is the fastest growing age category. The 25 to 34 year olds with an income of \$15,000 to \$35,000 per year are projected to account for more than one quarter of all households by 1990 (47). These individuals have the highest percentage of disposable income and are likely to have fewer traditional attitudes toward cut flowers. These attitudes may make this group an ideal target market for increasing cut flower sales through retail outlets.

A primary strategy for companies with a marketing perspective is customer segmentation. In consumer markets, the traditional method of segmentation was based on demographics. This was primarily segmentation based upon a consumer's age, income, level of education, and other quantitative variables. With the advent of sophisticated multivariate analysis, larger amounts of data are feasibly collected and condensed. By using factor analysis, a large number of variables can be condensed into a smaller set of main factors. Cluster analysis enables researchers to group similar individuals on the basis of a few selected variables. Discriminant analysis allows a researcher to distinguish among several groups of homogeneous individuals on the basis of selected variables. When used in conjunction with each other, factor, cluster, and discriminant analyses enable the market researcher to identify a smaller set of pertinent variables, group consumers into segments, and distinguish the segments on the basis of selected factors. This enables the



market researcher to profile a consumer segment more realistically than was possible with only demographics. The result is a market segmentation with discriminating variables which may be manipulated by management.

Improved computer analytic techniques have also led to psychographic market segmentation, or a division of consumers into homogeneous groups based upon the consumers attitudes, interests, and opinions. One of the most often used psychographic segmentations was the Values and Lifestyles Program (VALS) conducted by SRI International. A representative sample of individuals from the U.S. were clustered into nine segments, with four basic categories, based on their self-image, their aspirations, and the products they use (34). Another segmentation which yielded results similar to VALS was based upon interests, needs, demographics, and television viewing (18). These studies indicated that life style research is most appropriate for products whose functions include psychological gratification or symbolic functions (47). A major function of floral products is symbolism.

Several studies have been conducted which examined the consumers attitude or preference for certain floral products. Hutchison and Robertson (1979) found that form of the arrangement was the most important product attribute which influenced consumer impulse purchases of roses in a design. They also found that price variation was relatively unimportant in that purchase decision. There were

differences of color preferences between men and women. Men preferred red roses over other colored roses which included peach, yellow, and orange roses. Women chose the other colored roses over red roses. Both groups preferred pink colored roses least. Yet, all consumers were willing to purchase more roses when sold in units less than the traditional dozen (39).

In another study, Robertson and Chatfield (1982) found that price again was less important than the actual assortment of flowers in the purchase decision for mixed loose bunch floral products. They also found that the addition of a non-red rose increased the marketability of mixed loose bunches. For these products, \$5.95 to \$7.95 was the most acceptable price range (65).

A recent study was undertaken to determine how receptive customers were to having cut flowers in supermarkets (36). Two sites were chosen for the study in Fort Collins, Colorado. Most consumers (83%) placed their floral products in the home, while only 12% took them to their workplace. Flowers were specifically purchased for use in the dining room (22%), living room (19%), and kitchen (12%) areas of the home. Often, floral bunches were split and displayed in several rooms. The order of popularity of locations was the living room, dining room, kitchen, family room, and lastly the bedroom. Consumers purchased floral products a median of once each month. Questions concerning product care indicated that most consumers do not use floral preservative regularly, yet they recut floral stems .

Floral purchasing habits of Canadian consumers have also been studied (3, 15). Group discussions conducted in Toronto and Montreal in 1972 revealed several important issues that were pertinent to American consumer research, even though cultural and ethnic differences exist between Canadians and Americans (47). Younger Canadian buyers purchased floral products more frequently and for fewer traditional purposes than the older consumers. Spontaneous purchasing was more prevalent than in the U.S., since street vendors seem to be more common in Canadian cities. Young Canadian people who purchase flowers for non-occasion use also purchase them for some special occasions. Deep emotions were associated with floral products, emotions which a box of chocolates or bottle of wine could not convey as effectively. In contrast, older consumers felt that increased use of flowers can reduce their special meaning. They may become an obligation and empty gesture, rather than an impulsive or caring expression. The older consumers also felt traditional masculine and feminine roles still play an important part in giving and receiving flowers (3).

A study of Canadian consumers performed a decade later focused primarily on reasons for purchase and type of product purchased for thirteen specific occasions (15). This study found that there were three occasions for which over 40% of the Canadian consumers specifically purchased floral products in the past year: Mother's Day (48%), Christmas (44%), and for a funeral (40%). Two-thirds of

the adults in the area had purchased flowers from a florist in the past year. The heaviest purchasers tended to be older, upscale, married, and living in an urban environment. The lightest purchasers tended to be 18 to 24 years old, single, with some high school education.

In early 1985, the most comprehensive and current source of floral consumer research was completed by Market Facts, Inc., for the Society of American Florists (17). This study was comprised of qualitative and quantitative phases, with both focus groups and mail surveys. Five consumer segments were identified, for both men and women combined, with consumer purchasing behavior as a basis: Plant People, Flower People, Givers, and Special Occasion Only segments. A segmentation was also conducted with attitudes toward floral products as the basis for division. Men and women were segmented separately, due to the observed differences in the attitudes of these two groups in previous studies (2, 27). Yet, the analysis found that these differences were less than what had been identified in the past. Women were found to be affected by smaller price differences than men, while men were found to visit the florist more times in the year than women. Overall, the respondents indicated they had more knowledge about flowers than plants. The only advertising slogan which had gained awareness was "Say it with flowers," which was recognized by 99% of the respondents. Flowers were not found to be a part of a specific set of substitute products. Rather, the

competitive products varied by consumer and occasion when purchased.

The use of floral products by the purchaser is termed self-use. Self-use was an important issue investigated in this study. Individuals who indicated they had purchased more than \$20 worth of floral products in the past year were selected as a self-user sample. Twenty-eight percent of the sample were designated flower-self-users, while 43% of the sample met the criteria as plant-self-users. The research firm found that plant- and especially flower- self-users tended to be more upscale and have higher incomes. They were also better educated and had more white collar occupations than non-self-users.

An interesting pattern of self-useage also emerged. The pattern began with the individual spending no money on floral products (Level I). Next, special occasion floral gifts were purchased, coinciding with limited plant self use (Level II). At the third level of self use, increased spending was noticed for gifts, along with regular plant self-use. Finally, heavy spending on floral gifts was noticed with regular plant- and flower- self users. This four tier model indicated that self use encouraged increased gift use.

#### The Consumer Purchase Decision Model

The consumer goes through a five stage decision process for most purchases (47). The rate at which a consumer proceeds through these steps and the complexity of the process varies by the type of product being purchased. Two types of product purchases have been modeled.

These are low involvement products, such as milk or a newspaper, and high involvement products, such as a car or a suit. In either case, the general model of consumer purchase decision making consists of five phases:

1. problem recognition,
2. search for information,
3. alternative evaluation,
4. choice, and
5. post purchase evaluation.

In the decision making process for high involvement goods the alternative evaluation comes before choice, whereas for low involvement goods, the alternative evaluation comes after choice, with little or no external search for information. For high involvement products, the purchase decision process is generally extensive. For low involvement products, the purchase decision is less extensive and often approaches a routine. High involvement goods differ from low involvement goods in that they have high personal relevance, a strong attachment to the consumer's self concept, and carry some anxiety pertaining to the outcome after choice (47). The purchase of a floral product can be classified as a high involvement product since most floral purchases affect the consumer personally, often have something to state about the consumer's self-image, and may evoke some anxiety about the outcome of choice.

One of the most important stages in the high involvement product purchase decision is the alternative evaluation. It is in this stage, which occurs before choice, that a behavioral intention predictive model is useful to market researchers. Fishbein and Ajzen (1975) developed a four stage behavioral intention model which demonstrated that attitudes influence behavioral intentions (31). Attitudes are learned, and conceptually can be changed in the long run. Specifically, in a high involvement decision process, if information is provided, the potential exists to change the consumer's attitude, thus changing the intention and outcome. Attitudes about the behavior can be used to approximate behavioral intention. However in the short run, management can capitalize on positive attitudes and behavioral intentions of consumers to sell more products.

## **SECTION I**

### **Factors Impacting the Purchase of Floral Products in Supermarkets**



## ABSTRACT

Increased efforts to merchandise floral products through supermarkets have impacted many members of the floral distribution channel. The purpose of this study was to identify factors impacting the floral purchase in a supermarket. A structured response survey was completed by 510 Ohio supermarket floral product purchasers which was a 37% response rate. Responses from 91 survey measurements were factor analyzed using a principal component analysis and a varimax rotation, to yield thirty-four independent factors. Factors with an eigenvalue greater than one were retained for analyses. These factors accounted for 64% of the total variance. Factors impacting supermarket floral product purchases were grouped into five categories: factors pertaining to the product, people, supermarket image, uses of floral products in places, and uses of floral products for people. The factors included 1) number of purchases, 2) do-it-yourself, 3) enjoy trying new kinds, 4) price importance, 5) perception of supermarket product assortment, 6) purchases made for mothers, and 7) purchases made for a wedding.

### Introduction

Floral sales were traditionally made through the retail florist. The majority of sales through that retail outlet were on holidays, funerals, and weddings (66). One of the major changes in floral retailing has been the expansion of merchandising floral products through mass marketers, primarily supermarkets. Initially, supermarkets entered the retail floral sales market to alleviate seasonal surpluses in supply experienced by local growers (37). However, to increase a shrinking profit margin, supermarkets began to examine this non-food item as a potential source of profits. Supermarkets now maintain an 8.6% share of the retail market for floral products (9). Consumer research exists which identifies consumer product preferences (39,65), and identifies which consumers purchase products from supermarkets (19,62). However, further consumer research which examines the factors impacting consumer floral purchases in the supermarket would lend insight into consumer floral product purchases and their choice in retail outlets.

### Methodology

A structured response questionnaire was developed to measure 35 attitudinal issues, 63 product issues, and eight consumer demographic characteristics. The measurements utilized category nominal, semantic differential, 5-point Likert, and 9- and 5- point ordinally scaled questions. Two open ended response questions were structured to obtain information pertaining to occupations. For purposes of

this study, a floral product was defined for the respondents on the cover letter as fresh floral products such as cut flowers, potted blooming and foliage plants, and bedding plants. The survey instrument was pretested in a Columbus, OH, local chain supermarket and modified to aid in the interpretation of specific questions.

In November, 1984, and December, 1985, 1369 surveys were distributed through six Ohio supermarkets. Two stores were selected in the Cleveland, OH, market area and six Columbus, OH, stores. Two national supermarket chains and one regional supermarket chain participated in the study. The Columbus, OH, Standard Metropolitan Statistical Area (SMSA) was ranked 36th in supermarket sales in 1980. It is also the fourth largest market in the East Central Supermarket Region (70). This area includes Delaware, Fairfield, Franklin, Madison, and Pickaway counties. The leading chain stores in this area are Kroger, Big Bear, and Cardinal Foodstores with 31, 32, and 23 stores respectively. These three chains have 67% of the market for grocery store sales (12).

The sample of supermarkets chosen was a convenience sample due to the necessity of cooperation from the supermarket management at the corporate and local levels. The stores were selected by the supermarket management and the researcher to represent stores with profitable floral departments and a range of consumer income and educational backgrounds.

The distribution of the surveys was conducted in the supermarket. An interviewer intercepted store customers who paused for more than ten seconds at any display in the floral department of the store. The interviewer introduced himself and asked the customer if he would be willing to take a survey home for completion and return it in the accompanying envelope. A short description of the purpose of the study was given as profiling of supermarket floral consumers for the purpose of modifying existing and introducing new floral products to consumers. The five page questionnaire included a cover letter to explain the purpose of the study. Postage paid return reply envelopes were included to aid response rates (42). Data collection was terminated on February 28, 1985. A total of 510 surveys were returned for a 37% return rate.

The 91 issues (Table 2) were factor analyzed (33) to yield 34 orthogonal factors. The principal components factor analysis (22) was utilized to extract the major independent sources of variance within the issues. The principal components solution utilized Kaiser's varimax rotation procedure (43) to more clearly define the inter related issues. All factors with eigenvalues greater than one were retained for interpretation (38).

The factors were interpreted from the issues with the highest loadings on the factor. Factor loadings were determined which expressed the degree and direction of the relationship between the original issue and the factor. Communalities were calculated to

reveal the amount of variance each issue contributed to the factor solution, indicating its importance in the final solution. The factors were subjectively grouped into five categories for ease of interpretation.

## Results

### Consumer Factors

Factor 1 (Table 2) defined the number of floral purchases a consumer made in the past year. Several issues comprised this factor including the number of floral purchases from a supermarket, the total number of floral purchases in the past year, and the number of special trips to the supermarket for floral products in the past year. Attitudinal issues which comprised this factor included usually having floral products in the home, and buying floral products for no special reason. Two issues were negatively associated with the factor. These were inability to afford floral products except on special occasions, and giving flowers primarily on special occasions. The emergence of this factor indicated the amount of past floral purchasing impacts the floral purchase decision.

The second factor measured the propensity of a consumer to buy flowers for personal use (Table 2). Self-use was comprised of issues including liking to buy floral products for oneself, having bought flowers for oneself in the past year, and deriving enjoyment from giving floral products as much as receiving them.

Factor 3 defined a propensity of the consumer to work with floral

products in a constructive manner (Table 2). This 'do-it-yourself' factor was measured by issues including growing one's own flowers for use as cut flowers indoors, preferring home grown flowers to store purchased ones, liking to arrange one's own flowers, and knowing the names of flowers and plants before purchasing them.

The fourth factor described the degree of consumers' planning to purchase floral products. Issues which measured this factor included having flowers on a shopping list before buying them, planning to buy flowers before seeing them, and knowing what kind of floral product was wanted before a purchase was made.

The fifth factor identified a consumer's knowledge of extending the life of floral products. Knowledge of care and handling practices and the use of some additive in the water for cut flowers correlated strongly on this factor.

Factor 6 measured the consumers' penchant for trying new types of floral products. Issues which were correlated to this factor included a preference for novel types of flowers over traditional flowers and liking to try new kinds of floral products.

The seventh factor defined a consumer's perception of pricing strategy. One issue related to the factor which indicated that a number of arranged flowers has a higher value than the same number of unarranged flowers. This demonstrated a consumer's awareness of value added by arranging a floral product.

Factor 8 was a single issue factor that measured the consumer's

preference for having help in the floral product selection. This factor identified a consumers like or dislike of assistance from sales personnel when selecting a floral product.

Factor 9 described how often a consumer shopped for groceries in the supermarket. The issue which defined this factor is how often the consumer shopped in the supermarket each month. The amount of shopping in a supermarket impacts the floral purchase in the supermarket.

#### Product Factors

The tenth factor identified a floral product attribute as fragrance. This factor capsuled four issues relating to fragrance. The consumers liking to smell floral products before purchasing, the preference for fragrant flowers, liking to touch floral products before purchase, and the importance of fragrance among other floral product attributes measured the factor of product fragrance. The emergence of fragrance as a unique factor indicated the consumers separate evaluation of this attribute when purchasing a floral product.

Factor 11 identified a continuum of preference for casual and natural products versus formally designed products. This factor condensed three product issues. Two issues, a formal product preference and an imported product preference, were negatively related to the factor. A preference for a designed product was positively related to the factor. These issues form a continuum of

product design from a formal, designed, imported product to a casual, natural, domestic product.

The twelfth factor defined a continuum of the importance of care and handling instructions to the consumer. This factor condensed three issues. The lasting quality as the least important product attribute and care and handling instructions as least important product attribute, were positively related to the factor. Size of the product as the least important product attribute was negatively correlated to the factor. This indicates that size is inversely proportional to lasting quality in the consumer's perception.

Factor 13 related two issues which measured the importance of price. The price of the product being least important was positively related to the factor. The mix or assortment of the product was negatively related to the factor. The emergence of this factor indicated that price is an attribute which is perceived to be opposite to the product mix.

Factor 14 defined a factor of product color. Flower color as the least important issue was strongly correlated to the factor. The emergence of color as a unique factor demonstrates the singularity of product color in the consumer's mind.

The fifteenth factor defined a factor of the floral product package. This factor condensed two issues, the floral package and care and handling instructions, which were positively related to the factor. The relationship of these two factors with the package



factor vector indicated the consumer's perception of care instructions as part of the package rather than a separate product attribute.

Factor 16 extracted one issue pertaining to floral product delivery. The single issue, delivered flowers have more meaning than flowers not delivered, was negatively correlated to the factor. The emergence of delivery as a separate factor indicates its perceived distinctness in the consumer's mind as a product attribute.

Factor 17 described another factor pertaining to floral product color. This factor defined a continuum of color intensity which the consumer perceived as separate from the actual color, factor 14. The continuum defined extends from a bright color to a pastel color.

#### Store Factors

Factor 18 condensed five issues which pertained to the quality of supermarket floral products. The issues of supermarket floral product quality being the same as a florists, and supermarket flowers being as fresh as a florists were both strongly correlated to this factor. The issues supermarket flowers being a better bargain than a florists and the supermarket being a more convenient place to buy flowers were less positively correlated. The issue, I cannot afford flowers except on special occasions, was slightly negatively related to the factor. Together these issues comprised a factor for supermarket floral product quality.

Factor 19 defined a second factor relating to the supermarkets

store image. One issue, supermarkets sell the same kinds of flowers, uniquely defined this factor. This factor described the consumer's perception of the supermarket's product mix in comparison with a florist's.

#### Uses for People

Factor 20 expressed a family-meal holiday for buying flowers. This factor condensed four issues. These included past purchases for Easter, Thanksgiving, Christmas, and the dining room. These related issues describe a factor which accounts for the use of floral products during family occasions which have a main meal.

Factor 21 identified a factor relating to purchasing a floral product for a parent. Four issues comprised this factor including bought a floral product for a parent, for Mother's Day, for a birthday, and for a grandparent. The purchase of flowers for a mother was expressed as a unique factor and different from purchasing flowers for a father.

Factor 22 defined the purchase of flowers for the deceased. Three issues related to this factor. Purchased flowers for Memorial Day, for the cemetery, and for a funeral were correlated with this factor.

Factor 23 identified purchases of floral products for men as a unique factor. Three issues were related to this factor including men liking to receive flowers as much as women, purchasing flowers for male friends, and liking to have flowers near me at work. The

extraction of this factor indicated the consumer's perception of buying floral products for men as different from buying them for women, parents, or other individuals.

Factor 24 defined a factor of purchasing floral products for coworkers or colleagues. The two issues of buying flowers for a coworker and buying flowers for the office were positively related to this factor. The emergence of this factor indicated that coworkers are perceived differently from other individuals as recipients of floral products.

Factor 25 expressed the purchase of flowers for women. This factor was comprised of three issues including the past purchase of a floral product for a spouse and for an anniversary. Negatively related to this factor was the third issue, the purchase of flowers for a female friend. The emergence of this factor indicated floral purchases were perceived as being on a continuum from single female friends or married women.

Factor 26 quantified the purchase of flowers for a wedding. Three issues loaded on this factor including the past purchase of a floral product for a daughter, for a wedding, and for a place of worship. The emergence of this factor as a unique factor for a floral product indicated the consumer felt flowers for a wedding are a separate factor.

Factor 27 identified a factor of the purchase of floral products for a special event. Two factors were correlated to this factor.

They include past purchase of a floral product, and for a special event and for another relative. This factor capsuled floral purchasing for an individual at a time other than a formal holiday or occasion.

Factor 28 identified a single issue factor of purchasing flowers for Father's Day. The emergence of this factor indicated that consumers's perceive buying flowers for a father as distinct from buying for male friends or mothers.

#### Uses in Places

Factor 29 quantified the consumers use of floral product outside the home. Three survey issues comprised this factor. One issue, buying flowers for no outside place, was strongly negatively related to the factor. Buying floral products for the yard and buying floral products for the porch or patio were positively related to the factor. These issues together express a continuum of floral product use from no outside use to use in the yard, on the porch, or on the patio.

Factor 30 defined the placement of floral products with the home. This factor was measured by two issues: the past purchase of flowers for placement in the bathroom and in the kitchen. This factor indicated two rooms in the home where flowers are likely to be placed when placed in the home.

Factor 31 identified a continuum of consumer preference to wear flowers. One issue, I like to wear flowers, was positively related

to the factor. The emergence of this factor indicated wearing floral products is considered a unique use by the consumer.

Factor 32 condensed two issues relating to placement of floral products in the home. Two issues, buying flowers for the study and for the entrance, were correlated to the factor. This factor indicated these two rooms are likely found in some homes concurrently, or not found in the home at all.

Factor 33 had one issue related to it. The consumer bought a floral product in the past year for an occasion other than those mentioned. This factor would account for occasions for which floral products were purchased, and not probed on the questionnaire.

Factor 34 was similar to factor 33, in that one issue related to it and that it captured information which was not specifically probed on the questionnaire. One issue, bought floral products for a use in a place outside the home which was not mentioned on the survey, was strongly correlated to the factor. This factor captured information on use of floral products outside the home which was not specifically probed in the questionnaire.

#### Discussion

Mail survey research has been used as an acceptable survey method with minimal systematic bias (20). The use of a mail survey over telephone survey and personal interview allowed more depth to be probed and the domain of issues to be probed. The response rate of 37% was higher than typical mail survey response rates of 20%.

Factor analysis has been utilized in survey research as a data reduction technique to define factors underlying quantitative measures (22). The varimax rotation yielded a factor solution of independent factors which are more clearly interpreted. Although the factors are mathematically independent, five categories of factors emerged. These were factors pertaining to the consumer, factors pertaining to the floral product, factors concerning the supermarket store image, factors for uses of floral products for people, and factors for uses of floral products in specific places.

Factors which described the floral consumer included the number of floral purchases, the degree of self-use, a degree of construction with floral products or do-it-yourself, a continuum for planning floral purchases, knowledge of post-production care, desire to try new types of floral products, perception of a pricing strategy, willingness to have help in the floral product selection, and frequency of grocery shopping. All supermarket floral product consumers exhibit these factors to some extent, and indicated the important attributes of the consumer in the floral purchase decision.

Factors which described the floral product included the importance of fragrance, care and handling instructions, price, product color, package, and delivery. Two additional floral product factors which emerged included a preference for casual products over formal products and preference for bright colors over pastel colors.

These factors indicated the principal product attributes considered in the floral purchase decision.

Two factors emerged which described the supermarket: a perception of supermarket floral product quality and a perception of the supermarket store image.

Nine factors described the uses of floral products for individuals. These included purchasing floral products for family meal oriented holidays, purchasing for mother, sympathy, male friends, coworker, wife, wedding, special event, and father. The purchase of flowers for mother and father emerged as distinct factors which indicated they are considered a unique recipients rather than as a single type of recipient or parent. The continuum of purchasing for wife was indicated as purchases for wife or female friends. This dichotomy of purchasing for spouse or friend was not seen in the factor of purchasing for male friends.

Factors which described the uses of floral products in places were purchasing flowers for outdoors, for the kitchen, for other rooms in the home, for other occasions, and for other outside locations. A consumer's liking to wear flowers was also considered as a unique place for floral products.

#### Conclusions

The 34 factors described major elements which impact the consumer floral purchase decision in the supermarket. The survey research attempted to explore the domain of all issues, still some may have

been omitted. The factors are expressed on a continuum, as all consumers would express each factor to some degree.

The identification of major factors impacting the floral purchase decision enables researchers, managers, and consumers to better understand the purchase decision of a floral product in a supermarket. A better understanding of the decision will enable researchers and managers to further investigate these factors and the importance they have in that consumer decision. Once the importance of these factors can be determined for different consumer segments, floral products can be modified and developed to better satisfy consumer needs.



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Table 2. Factor loading matrix of floral purchase factors on floral purchase variables .

Factor description	Variables	Loading <sup>y</sup>	Communality <sup>x</sup>
(1) Number of floral purchases	Number of purchases from supermarket	.81	.77
	Number of purchases in past year	.74	.78
	Number of special trips to supermarket	.63	.67
	Usually have flowers at home	.56	.67
	Cannot afford except on special occasions	-.53	.61
	Bought for no special reason	.51	.65
	Flowers should be given primarily on special occasions	-.44	.58
(2) Self use	Like to buy for self	.72	.70
	Bought for self	.71	.68
	Enjoy giving as much as receiving	.53	.65
(3) Do- it- yourself	Grow own flowers for cuts	.72	.69
	Home grown to store bought preference	-.71	.67
	Like to arrange own flowers	.49	.64
	Know names of flowers and plants	.41	.60
(4) Planned purchases	Flowers on shopping list before bought	.74	.68
	Plan to buy flowers before seeing	.73	.67
	Know what kind wanted before buying	.54	.65

Table 2. Continued.

Factor description	Variables	Loading	Communality
(5) Post-harvest knowledge	Know how to make flowers last	.75	.72
	Use some additive with water for cut flowers	.74	.70
(6) Try new kinds of flowers	Novel to traditional floral product preference	-.75	.65
	Like to try new kinds of floral products	.47	.60
(7) Price perception	Same number of flowers arranged should be priced the same	.77	.67
(8) Help in product selection	Like to have help in the floral product selection	-.76	.65
(9) Grocery shopping frequency	How often grocery shopping	-.74	.68

Table 2. Continued.

Factor description	Variables	Loading	Communality
(10) Floral fragrance importance	Like to smell flowers before buying	.77	.65
	Fragrant flowers better than non-fragrant flowers	.66	.64
	Like to touch flowers before buying	.44	.61
	Fragrance of flowers least important product attribute	-.44	.60
(11) Formal product preference	Formal product preference to casual product	-.76	.67
	Natural product preference to designed product	.64	.63
	Imported product preference to domestic product	-.48	.67
(12) Post-harvest importance	Lasting quality least important attribute	.71	.61
	Care instructions least important attribute	.59	.69
	Size of floral product least important attribute	-.53	.57
(13) Price importance	Price of product least important product attribute	.68	.69
	Mix of product least important attribute	-.65	.61
(14) Flower color importance	Flower color least important attribute	.79	.69
(15) Package importance	Package least important attribute	-.76	.67
	Care instructions least important product attribute	-.41	.61

Table 2. Continued.

Factor description	Variables	Loading	Communality
(16) Delivery importance	Delivered floral products have more meaning	-.75	.61
(17) Bright color preference	Bright color preference to pastel colors	.78	.67
(18) Supermarket floral image	Supermarket floral product quality same as florists'	.83	.75
	Supermarket flowers as fresh as florists'	.72	.68
	Supermarket flowers are a better bargain than florists'	.46	.65
	Supermarket more convenient location to buy than florist	.43	.63
	Cannot afford flowers except on special occasions	-.42	.62
(19) Floral product assortment	Supermarkets sell the same kinds of flowers as florist	.74	.64
(20) Family meal holiday purchases	Purchased floral product for Easter	.66	.60
	Purchased floral product for Thanksgiving	.54	.61
	Purchased floral product for Christmas	.52	.67
	Place flowers in dining room	.41	.55

Table 2. Continued.

Factor description	Variables	Loading	Communality
(21) Purchases for Mother	Bought for Parent	.77	.67
	Bought for Mother's Day	.70	.67
	Bought for birthday	.52	.57
	Bought for grandparent	.45	.62
(22) Purchases for sympathy	Bought for Memorial Day	.76	.64
	Bought for cemetery	.70	.66
	Bought for funeral	.48	.62
(23) Purchases for male friends	Men like to receive flowers as much as women	.66	.55
	Bought floral product for male friend	.47	.61
	Like to have flowers near me at work	.40	.55
(24) Purchases for coworker	Bought for coworker	.74	.67
	Bought for office	.72	.70
(25) Purchases for wife	Bought for spouse	.77	.71
	Bought for female friend	-.54	.60
	Bought for anniversary	.48	.60
(26) Purchases for wedding	Bought for daughter	.62	.58
	Bought for wedding	.50	.58
	Bought for place of worship	.45	.60

Table 2. Continued.

Factor description	Variables	Loading	Communality
(27) Purchases for special event	Bought for special event	.62	.59
	Bought for other relative	.41	.23
(28) Purchases for Father	Bought for Father's Day	.69	.66
(29) Purchases for outdoors	Bought for no outside place	-.75	.68
	Bought for yard	.73	.71
	Bought for porch or patio	.45	.61
(30) Purchases for kitchen	Bought flowers for bathroom	.63	.61
	Bought flowers for kitchen	.59	.54
(31) Like to wear flowers	Like to wear flowers	.69	.65
(32) Purchases for other rooms	Bought flowers for study	.74	.66
	Bought flowers for entrance	.43	.64

Table 2. Continued.

Factor description	Variables	Loading	Communality
(33) Purchases for other occasions	Bought flowers for other occasions	.80	.71
(34) Purchases for other outside place	Bought flowers for other outside place	.72	.58

<sup>z</sup> Factor loadings are correlations between the variable vector and the factor vector.

<sup>y</sup> Correlations above .40 are reported.

<sup>x</sup> The amount of variance of the variable contributing to the factor solution.

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## **SECTION II**

### **A Market Segmentation of Supermarket**

#### **Floral Product Consumers**

### Abstract

The merchandising of floral products through supermarkets radically changed the retailing of plants and flowers. The purpose of this study was to profile consumer segments of individuals who purchase floral products from supermarkets. A 106-item questionnaire was developed to determine the domain of issues affecting supermarket floral purchases. Cluster analysis was performed on factor analyzed survey data from 463 Ohio supermarket floral products purchasers to form homogeneous consumer segments. Five segments were determined to be the best clustering solution from the use of Ward's method utilizing a squared Euclidean distance measure. Based on the cluster centroids, the segments were distinguished as Friendly Buyers, Married Males, Selfers, Annuals, and Educated Mothers. Demographic data were standardized and utilized with the factors in a discriminant analysis to determine significantly distinguishing elements in the profiles. Fourteen factors contributed most to the differences between segments including floral product assortment, number of purchases, degree of self use, and package importance. Consumer segment product targets are described.

### Introduction

Improved analytic techniques have lead to psychographic segmentation, or a division of consumers into homogeneous groups based on consumer attitudes, interests, and opinions (34,18). Market segmentation enables management to capitalize on the demand for certain products by certain market segments. Several studies have examined consumer preferences toward floral products (40,65), and some have sought to identify consumers who purchase floral products in supermarkets (19,36,62), with limited success. One recent study segmented the consumer retail market for floral products with some emphasis on supermarket floral purchasers (17).

Measuring consumer attitudes toward floral purchasing behaviors can be useful in predicting behavioral intentions (31). A consumer segmentation of the market for floral products would be useful in assisting florist and supermarket management to target floral products to specific market segments. Attitudinal measurements would enable researchers to predict behavioral intentions of floral consumers. The purpose of this study was to segment supermarket floral product consumers who had purchased a floral product in the past year in order to identify their purchase behavior and attitudes toward floral products.

### Methodology

A 106 item questionnaire was constructed to determine the domain of issues pertaining to supermarket floral purchases. Structured

response questions were developed to measure 35 attitudinal issues, 63 product issues, and eight consumer demographics. The measurements utilized category nominal, semantic differential, 5-point Likert, and 9 and 5 point ordinally scaled questions. Two open-ended response questions were structured to obtain information pertaining to consumer occupations. For the purpose of this study, a floral product was defined as a fresh product such as cut flowers, potted blooming and foliage plants, and bedding plants.

The survey instrument was pretested in a Columbus, Ohio, supermarket and modified before distribution. In December, 1984, and January, 1985, 1369 modified surveys were distributed through six Ohio supermarkets. Responses from 510 were obtained yielding a 37% return rate. Responses from 463 consumers, 91% of those responding, were from consumers who had purchased a floral product from a supermarket in the past year. These responses were utilized in a principal components factor analysis to yield 34 factors impacting the supermarket floral purchase (Behe, Section I).

Respondents were next scored on the basis of their answers to issues comprising the factors. Factor scores were calculated for each respondent on the 34 floral purchasing factors. The factor scores then formed the basis for additional analyses and represented values for each factor (67).

Respondents were clustered using SPSSX clustering routine.

Ward's method and a squared Euclidean distance measure were utilized (66). Ward's clustering method has been demonstrated to yield a good solution when the clusters lie close together, and it is a hierarchical agglomerative method of clustering. Cluster analysis is a group of multivariate statistical techniques which group individuals such that within the groups, the individuals are as homogenous as possible, yet between the groups, individuals are as heterogenous as possible. It is primarily a technique for hypothesis generation, rather than testing. Heuristic procedures are the most commonly used techniques to determine the number of clusters to keep (1), yet one statistical basis for determining the number of clusters to retain is available. The dendrogram of cluster solutions was examined and the number of clusters to retain was determined by a significant increase in the fusion coefficient (1).

Demographic data were standardized using the condenscriptive procedure (67). Occupational data were transformed from open-ended response data to a three digit code from the Dictionary of Occupational Titles (71). The standardized demographic data, combined with the factor scores, were used in a discriminant analysis to identify characteristics of the five consumer segments and determine the most distinguishing characteristics of each segment.

The discriminant analysis had three purposes: to classify unclustered cases, to profile existing clusters, and to identify variables which discriminate between the clusters (26).

The discriminant analysis derived functions, similar to multiple regression equations, which identified the relationship between the dependant clusters and the independant factors. These functions were utilized to validate existing clusters and to predict the membership of unclustered respondents.

A split-sample technique was used to determine the internal validity of the discriminant functions in assigning unclustered individuals to clusters. Three-fourths of the respondents were randomly selected for the discriminant analysis. The remaining one-fourth were then assigned to clusters on the basis of the discriminant functions. The accuracy of prediction of the functions were then compared to prior probability to determine the internal validity. This is the most frequently used method of validation for unclassified respondents (26).

### Results

Five consumer segments were identified with the cluster analysis. Through examination of the dendrogram, the five cluster solution was determined to be the best solution since the fusion coefficient differences reached the first plateau at that point (Fig. 1). Large jumps in the fusion coefficients indicated significant clusters merged at that point (1).

Each of the four discriminant functions were significant, with fourteen factors discriminating most between the segments (Table 3). The validity of the discriminant functions was determined by the

assignment of unclustered cases to clusters, with 62% of those cases correctly classified (Table 4). The consumer profiles were then derived from the cluster centroids, or means (Appendix C), on each of the factors and demographic variables. The five clusters were subjectively named Friendly Buyers, Married Men, Selfers, Annuals, and Educated Mothers due to the attitudes, buying behavior, and demographics the clusters exhibited.

The first segment was designated the Friendly Buyers. This segment comprised 20% of individuals who purchased floral products in supermarkets. These individuals were between the ages of 25 and 34 years old and had some college education. The segment was comprised predominantly of females from households with an annual income of \$15,000 to \$19,999 per year. Their most distinguishing characteristics were that they bought floral products for coworkers and their mother. They purchased flowers for events important in others lives, and purchased few floral products for themselves. This segment had the perception that supermarkets sell the same kinds of floral products as florists. Floral product color and package were important product attributes, and price was relatively unimportant to them.

The second consumer segment identified was the Married Men. This segment comprised an additional 20% of the market for supermarket floral products. These individuals were between the ages of 45 and 54 years old, and had some college education. They were

predominantly men from households with an annual income between \$20,000 and \$25,000 per year. The people in this segment tended to purchase floral products most often for their spouses. They did not buy for their parents or family members. They perceived supermarkets as not selling the same kinds of floral products as florists. Price and fragrance were important product attributes to them, while the package was unimportant to them.

The third consumer segment was described as the Selfers. This segment comprised 30% of the market for floral products in the supermarket. These consumers were between the ages of 25 and 34 years old and most had some college education. They were predominantly females from households with an annual income between \$15,000 and \$19,999 per year. These consumers bought the majority of their floral products for themselves. They purchased the second most number of times. They enjoyed growing flowers in their gardens and utilized them in arrangements. They enjoyed creating their own floral designs, and working with floral materials. This segment perceived supermarkets to sell the same kinds of floral products as supermarkets. Price of the floral product was important to them while color and package were relatively unimportant.

The fourth segment identified was termed the Annuals. This segment comprised one quarter of the market for supermarket floral products. These individuals were between the ages of 35 and 44 years old and had some college education. This segment was predominantly



females from households with an annual income of \$20,000 to \$24,999 per year. The outstanding characteristic of this segment was that they purchased floral products only once per year. They did not purchase the floral product for any one specific individual, including themselves, rather used the product as a home decoration. They perceived supermarkets not to sell the same kinds of flowers as florists. They were indifferent to the importance of product attributes such as color and fragrance.

The fifth consumer segment identified was named the Educated Mothers. These individuals comprised only five percent of the market for supermarket floral products. These individuals were between the ages of 45 and 54 years old and were the best educated segment. They were mostly women from households with an annual income of \$30,000 and \$34,999 per year. The most outstanding characteristic of this consumer segment was that they had purchased floral products for family meal-oriented holidays, such as Thanksgiving, Christmas, and Easter. These consumers were the best educated segment in comparison to the others. They also purchased floral products for a wedding more so than the other segments. Price and care instructions were important product attributes to them, while color was unimportant.

The discriminant functions derived from the discriminant analysis were significant, and assigned unclustered respondents with 62% accuracy (Table 4). This can be compared to a random probability of assignment to a cluster of 20%, 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 multiple regression (62). Factors which most distinguished the segments and were most highly correlated with the functions were the supermarket floral product assortment perception, factor 19, floral package importance, factor 15; the number of floral purchases, factor 1; amount of floral purchases made for mother, factor 21; and price importance, factor 13 (Table 3).

#### Discussion

The resulting profiles of the three analyses can enable management to make more informed decisions about products to target to certain markets. Friendly Buyers could be targeted with casual bouquets in a variety of colors and prices. Products suitable for gifts to parents, friends, and coworkers for this segment could be indicated by point of purchase materials and supplemental products, such as plant sleeves or care tags.

Pre-packaged, clearly priced single stems could be targeted to the Married Men segment. Products for this segment should be appropriate for a spouse, and could be advertised as such, reminding these consumers of upcoming birthdays or anniversaries. Products which are fragrant would appeal to this segment, since this product attribute was important to them.

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

Potted poinsettias and seasonal lilies would be excellent target products for the Annuals segment. Since these consumers utilize floral products as home decorations rather than as gifts for others, plant accessories emphasizing home decorations would identify these products for this market. Since these consumers have a poor perception of supermarket floral product assortments and are indifferent to most floral product attributes, they may not warrant products targeted specifically to them.

Educated mother consumers utilize floral products on their dinner tables, and flowers should be modified and identified for this specific use. Price and package are important to them, and should be emphasized to them through point-of-purchase materials and in-store displays. Care and handling information is important to this segment, and should be included with floral product purchases. Although this segment is the smallest in comparison to the other four, these consumers make the most number of floral product purchases. They can be a viable target market for some supermarkets,

and deserve consideration by management as a profitable segment.

Supermarket and other floral managers need to understand their consumers in order to make informed decisions concerning their floral product mix. Considering the differences in the five consumer segments identified can enable management to modify floral products and target them to specific segments. Products need not be targeted to each segment, rather segments of most profit to the individual retail location can be identified and chosen as target markets. The three analyses of the survey data produced five consumer segments based upon similarities among the consumers. The resulting consumer profile provide management the information to select profitable markets and target specific floral products toward them.

Fig. 1. Difference in fusion coefficients.

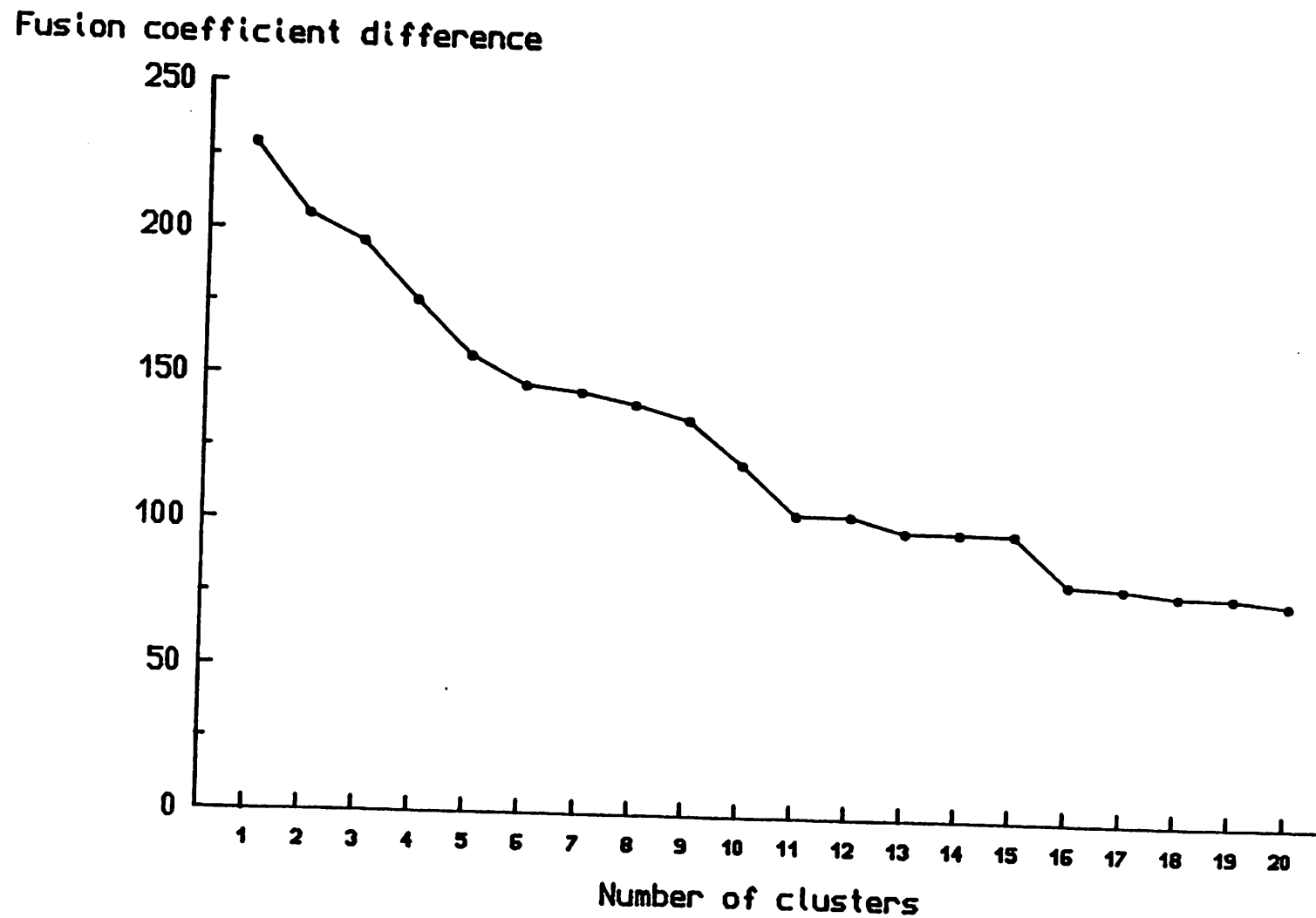


Table 3. Correlations between canonical discriminant functions and discriminating factors greater than .20 for supermarket floral purchasing factors<sup>z</sup>.

Factor Number and Description	Function 1 <sup>x</sup>	Function 2 <sup>x</sup>	Function 3 <sup>x</sup>	Function 4 <sup>x</sup>
19 Supermarket floral product assortment	.41		.28	
16 Delivery importance	-.27	.20		
7 Price perception	.26	.21		
14 Flower color importance	.21			
1 Number of purchases		.35		
2 Self use		.28		
11 Formal product preference		.25	-.28	
13 Price importance			.37	
5 Post-harvest knowledge			.26	
17 Bright color preference			.24	
15 Package importance	.24			-.43
21 Purchasing for mother				.34
20 Family meal holiday purchases				-.25
6 Try new kinds of floral products	.21			.22

<sup>z</sup> Description of floral purchasing factors see Section I.

<sup>x</sup> Discriminant function significant at  $\alpha < .01$  using Wilk's lambda statistic.

Table 4. Classification of clustered and unclustered respondents to test internal validity of the four discriminant functions.

---

Classification Results for Cases Used In Analysis:<sup>z</sup>

Actual Cluster Membership	No. of Cases	<u>Percent Respondents Classified in Each Cluster</u>				
		Friendly Buyers	Married Men	Selfers	Annuals	Educated Mothers
Friendly Buyers	77	81	3	6	6	4
Married Men	88	5	85	6	4	0
Selfers	75	3	8	81	8	0
Annuals	76	7	5	3	84	1
Educated Mothers	16	0	0	0	6	94

Percent Cases Correctly Classified: 83

Classification Results for Cases Not Used In Analysis:<sup>y</sup>

Actual Cluster Membership	No. of Cases	<u>Percent Respondents Classified in Each Cluster</u>				
		Friendly Buyers	Married Men	Selfers	Annuals	Educated Mothers
Friendly Buyers	37	62	8	11	14	5
Married Men	29	17	55	11	17	0
Selfers	21	5	19	57	19	0
Annuals	36	11	8	14	67	0
Educated Mothers	7	0	0	0	29	71

Percent Cases Correctly Classified: 62<sup>x</sup>

---

<sup>z</sup> A randomly selected sample of 332 cases formed the basis for the discriminant analysis.

<sup>y</sup> The remaining 130 cases were assigned to clusters on the basis of the discriminant functions.

<sup>x</sup> Percent greater than chance classification probability (20%) or largest cluster classification (30%).

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## Conclusions

One of the most important concepts of marketing is market segmentation. Without segmentation, products are not targeted and merchandised to consumers without regard to the demand of the product by the consumer. It can be ineffective and inefficient management not to target specific products to specific markets in the competitive business environment facing growers and retailers today. Soft drink manufacturers, auto manufacturers, and clothing retailers have adopted the successful art and science of segmenting their markets and targeting products; the floral industry is just beginning to adopt such a strategy.

Several researchers have sought to profile consumers who purchase floral products. Recent research in consumer preferences and importance of product attributes has increased the small amount of information available for managerial decisions. Yet, a market segmentation for supermarket floral product retailers would benefit floral retailers. Supermarkets, and their relationship to the floral industry, have caused concern among growers, wholesalers, and traditional floral retailers. Their concerns focus on the kinds of consumers who shop in supermarket floral departments and their product purchases.

The purpose of this study was to identify and profile the supermarket floral consumer. Through survey research, five types of consumers who purchase flowers in supermarkets were identified.

Friendly Buyers, Married Men, Selfers, Annuals, and Educated Mothers are all viable target markets. The uses for and attitudes toward floral products were investigated and helped define the profile of each consumer segment. Factors which contributed most to the differences between consumer segments were the supermarkets' floral product assortment, the number of floral purchases, the degree of self use, and the importance of the floral package.

Floral products have been a part of man since ancient times, and are found in many rituals from birth to death. They fill an emotional need and will remain an important part of cultures in the future. The emotional needs which flower fulfill can only be filled after basic needs for food, clothing and shelter are met. With the increasing affluence of the middle class, the ability of consumers to fill their emotional needs increases. The competition for the consumer's discretionary dollar is high, and marketing becomes increasingly important.

The floral and produce industries have evolved in different dimensions while reacting to similar external and different internal changes. They have recently crossed paths and face a new competitor in each other. This marketing information will benefit both of them. They may choose to target the same markets, or focus on different ones. Management now has information with which they can effectively target floral products to the identified consumer segments.

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**APPENDIX A**

**SUPERMARKET FLORAL SURVEY**



The Ohio State University

Department of Horticulture

2001 Fyffe Court  
Columbus, Ohio 43210

November 30, 1984

Dear Consumer,

The Ohio State University has been awarded a grant to study consumer attitudes toward flowers. The research will help florists and supermarkets offer you, the consumer, the kinds of floral products you would like to purchase.

We need your cooperation to conduct this research. Would you please take a few minutes of your time when you are home to help us by completing this survey and mailing it back to us? There are no right or wrong answers. We are only interested in how you feel about flowers and plants.

The study is primarily concerned with your attitudes toward floral products and flowers. By **floral products**, we mean flowering plants (such as African violets, poinsettias, Easter lilies, etc.), foliage plants (ferns, cacti, ivys, etc.), fresh cut flowers (roses, carnations, mums, etc.), and spring bedding plants (impatiens, marigolds, geraniums, etc.). Most of the questions concern **flowers**, which include flowering plants and fresh cut flowers, but not foliage plants and spring bedding plants. Please keep these definitions in mind as you answer the questions.

On the following pages, you will find the questionnaire. Please answer all questions as accurately as possible, and return it in the self-addressed, stamped envelope. We assure you that all your responses will be kept strictly confidential.

We thank you, in advance, for your time and cooperation.

Sincerely,

A handwritten signature in black ink, appearing to read "David Hahn".

David Hahn  
Professor,  
Agricultural Economics

A handwritten signature in black ink, appearing to read "Bridget Behe".

Bridget Behe  
Graduate Associate  
Market Research

**PART ONE:** Please answer the following questions giving your best estimate where exact answers are not known.

1. For which occasion(s) have you purchased flowers in the past year? Check all that apply.
 

<input type="checkbox"/> Valentine's Day	<input type="checkbox"/> Father's Day
<input type="checkbox"/> Mother's Day	<input type="checkbox"/> Wedding
<input type="checkbox"/> Christmas	<input type="checkbox"/> Thanksgiving
<input type="checkbox"/> A special event for someone	<input type="checkbox"/> Birthday
<input type="checkbox"/> Anniversary	<input type="checkbox"/> Funeral
<input type="checkbox"/> Dinner party	<input type="checkbox"/> Hospital
<input type="checkbox"/> Easter	<input type="checkbox"/> Memorial Day
<input type="checkbox"/> No special reason	<input type="checkbox"/> other _____
2. How many times have you purchased flowers in the past year? Check one.
 

<input type="checkbox"/> never	<input type="checkbox"/> 7-8 times
<input type="checkbox"/> 1-2 times	<input type="checkbox"/> 9-10 times
<input type="checkbox"/> 3-4 times	<input type="checkbox"/> about once/month
<input type="checkbox"/> 5-6 times	<input type="checkbox"/> more than once/month
3. Which kind of floral product have you purchased MOST FREQUENTLY in the past year? Check one.
 

<input type="checkbox"/> Arranged flowers in a container	<input type="checkbox"/> foliage plant
<input type="checkbox"/> mixed, loose bunch of flowers	<input type="checkbox"/> bedding plants
<input type="checkbox"/> flowering houseplant	<input type="checkbox"/> single stem(s)
4. Which kind of floral product have you purchased LEAST FREQUENTLY in the past year? Check one.
 

<input type="checkbox"/> Arranged flowers in a container	<input type="checkbox"/> foliage plant
<input type="checkbox"/> mixed, loose bunch of flowers	<input type="checkbox"/> bedding plants
<input type="checkbox"/> flowering houseplant	<input type="checkbox"/> single stem(s)
5. How many times have you purchased a floral product from a supermarket in the past year? Check one.
 

<input type="checkbox"/> never	<input type="checkbox"/> 7-8 times
<input type="checkbox"/> 1-2 times	<input type="checkbox"/> 9-10 times
<input type="checkbox"/> 3-4 times	<input type="checkbox"/> about once/month
<input type="checkbox"/> 5-6 times	<input type="checkbox"/> more than once/month
6. In the past year, how many times have you made a SPECIAL TRIP to the supermarket primarily to buy some flowers? Check one.
 

<input type="checkbox"/> never	<input type="checkbox"/> 7-8 times
<input type="checkbox"/> 1-2 times	<input type="checkbox"/> 9-10 times
<input type="checkbox"/> 3-4 times	<input type="checkbox"/> about once/month
<input type="checkbox"/> 5-6 times	<input type="checkbox"/> more than once/month
7. Where have you MOST OFTEN bought your flowers in the past year? Check one.
 

<input type="checkbox"/> florist	<input type="checkbox"/> supermarket
<input type="checkbox"/> outdoor or street vendor	<input type="checkbox"/> nursery
<input type="checkbox"/> greenhouse	<input type="checkbox"/> drug store
<input type="checkbox"/> discount store (i.e. K-Mart)	<input type="checkbox"/> garden center

PLEASE LIFT OPEN 

8. How much would you be willing to pay to have a flower bouquet on your dining room table? Check one.
- |                                  |                                 |
|----------------------------------|---------------------------------|
| <input type="checkbox"/> nothing | <input type="checkbox"/> \$6.95 |
| <input type="checkbox"/> \$3.95  | <input type="checkbox"/> \$7.95 |
| <input type="checkbox"/> \$4.95  | <input type="checkbox"/> \$8.95 |
| <input type="checkbox"/> \$5.95  | <input type="checkbox"/> \$9.95 |
9. In the past year, for whom have you purchased flowers? Check all that apply.
- |   |   |
|---|---|
| <input type="checkbox"/> yourself         | <input type="checkbox"/> son            |
| <input type="checkbox"/> spouse           | <input type="checkbox"/> daughter       |
| <input type="checkbox"/> female friend(s) | <input type="checkbox"/> male friend(s) |
| <input type="checkbox"/> parent           | <input type="checkbox"/> other relative |
| <input type="checkbox"/> grandparent      | <input type="checkbox"/> co-worker      |
| <input type="checkbox"/> your family      | <input type="checkbox"/> other _____    |
10. In what room(s) of your house or apartment do you place flowers? Check all that apply.
- |   |                                      |
|---|--------------------------------------|
| <input type="checkbox"/> kitchen            | <input type="checkbox"/> study       |
| <input type="checkbox"/> dining room        | <input type="checkbox"/> bathroom    |
| <input type="checkbox"/> bedroom            | <input type="checkbox"/> entrance    |
| <input type="checkbox"/> living/family room | <input type="checkbox"/> porch/patio |
11. For which of the following locations have you purchased flowers, in the past year? Check all that apply.
- |  |  |
|--|--|
| <input type="checkbox"/> office or workplace | <input type="checkbox"/> yard/lawn/patio |
| <input type="checkbox"/> place of worship    | <input type="checkbox"/> none            |
| <input type="checkbox"/> cemetery            | <input type="checkbox"/> other _____     |
12. Which day of the week do you shop for MOST of your groceries? Check one.
- |  |                                   |
|--|-----------------------------------|
| <input type="checkbox"/> Monday through Thursday | <input type="checkbox"/> Sunday   |
| <input type="checkbox"/> Friday                  | <input type="checkbox"/> Saturday |
13. How often do you shop in a supermarket? Check one.
- |   |   |
|---|---|
| <input type="checkbox"/> more than three times/week | <input type="checkbox"/> once every two weeks |
| <input type="checkbox"/> two or three times/week    | <input type="checkbox"/> once per month       |
| <input type="checkbox"/> once per week              |   |

**PART TWO:** Please rank the following items in the order you consider to be most important when you are buying flowers for someone else. For example, if you feel price is the most important factor, please put a 1 in front of it. If color is the next most important consideration to you, please put a 2 in front of it, and so on.

1 = MOST IMPORTANT      9 = LEAST IMPORTANT

- \_\_\_\_\_ Flower color
- \_\_\_\_\_ Price
- \_\_\_\_\_ Flower fragrance
- \_\_\_\_\_ The size of the bunch or arrangement
- \_\_\_\_\_ Flower package/wrapping/container
- \_\_\_\_\_ How fresh the flowers are
- \_\_\_\_\_ The mix, variety, or assortment of flowers
- \_\_\_\_\_ Complete care and handling instructions
- \_\_\_\_\_ How long the flowers are expected to last



**PART THREE:** For each question, please circle the number in the column which most closely reflects your opinion.

(1) SD = Strongly Disagree

(2) D = Disagree

(3) N = Neutral

(4) A = Agree

(5) SA = Strongly Agree

	SD	D	N	A	SA
1. The flowers in supermarkets are as fresh as a florist's.	1	2	3	4	5
2. Supermarkets generally sell the same kinds of flowers.	1	2	3	4	5
3. Flowers should primarily be given on special occasions.	1	2	3	4	5
4. Flowers were on my shopping list when I decided to buy some.	1	2	3	4	5
5. Men like to receive flowers as much as women.	1	2	3	4	5
6. Flowers are easy to care for.	1	2	3	4	5
7. A display of flowers usually catches my eye.	1	2	3	4	5
8. When I buy flowers, I know what kind I want before I see or buy them.	1	2	3	4	5
9. The same number of arranged flowers should be priced higher than a loose bunch.	1	2	3	4	5
10. I use the information found on the label of the flower package.	1	2	3	4	5
11. I plan to buy flowers usually before I see them.	1	2	3	4	5
12. Florists provide more flower care information than supermarkets.	1	2	3	4	5
13. Fragrant flowers are better than non-fragrant flowers.	1	2	3	4	5
14. Supermarket floral prices are too high.	1	2	3	4	5
15. Flowers that are delivered have more meaning than those that are given in person.	1	2	3	4	5
16. Flowers in a supermarket are a better bargain than in a florist.	1	2	3	4	5



**PART FOUR:** Please place an X nearest to the description of the kinds of flowers you like to have for yourself. For example, if you like very novel flowers, place an X on the first line in the blank next to novel. If you like traditional flowers more than novel flowers, place an X in the blank next to traditional. For each pair of words, please place only one X on each line.

Novel	_____	_____	_____	_____	_____	Traditional
Formal	_____	_____	_____	_____	_____	Casual
Natural	_____	_____	_____	_____	_____	Designed
Home grown	_____	_____	_____	_____	_____	Store bought
Bright colors	_____	_____	_____	_____	_____	Pastel colors
Imported	_____	_____	_____	_____	_____	Domestic

**PART FIVE:** For each question, please circle the number in the column which most closely reflects your opinion.

	SD	D	N	A	SA
1. I like to buy flowers for myself.	1	2	3	4	5
2. I enjoy giving flowers as much as I like to receive them.	1	2	3	4	5
3. I know how to make the flowers I receive or buy last as long as they can.	1	2	3	4	5
4. I use some additive to help the flowers last longer.	1	2	3	4	5
5. I like to have help in choosing the kind of flower or plant to buy.	1	2	3	4	5
6. I know the names of the flowers or plants before I buy them.	1	2	3	4	5
7. I like to arrange my own flowers, rather than buy them in an arrangement.	1	2	3	4	5
8. Flowers are more convenient to buy in a supermarket than at a florist.	1	2	3	4	5
9. I buy flowers in a supermarket because the quality is the same as a florist.	1	2	3	4	5
10. I usually have fresh flowers in my home.	1	2	3	4	5
11. I like to have flowers near me where I work.	1	2	3	4	5
12. I cannot afford flowers except on special occasions.	1	2	3	4	5
13. I like to touch the flowers I may buy.	1	2	3	4	5
14. I like to try new and different flowers each time I buy them.	1	2	3	4	5
15. When I have people over, it is important to me to have flowers around.	1	2	3	4	5



	SD	D	N	A	SA
16. I like to wear flowers.	1	2	3	4	5
17. I grow my own fresh flowers to cut for arrangements.	1	2	3	4	5
18. I like to smell the flowers I may buy.	1	2	3	4	5
19. Plants and flowers were in my home when I was a child.	1	2	3	4	5

**PART SIX:** Please answer the following questions giving your best estimate where exact answers are not known. All your responses will be held strictly confidential.

1. How old were you on your last birthday?
 

<input type="checkbox"/> Under 18 years	<input type="checkbox"/> 45-54 years
<input type="checkbox"/> 19-24 years	<input type="checkbox"/> 55-64 years
<input type="checkbox"/> 25-34 years	<input type="checkbox"/> Over 65 years
<input type="checkbox"/> 35-44 years	
2. What is the highest level of education you have completed? Check one.
 

<input type="checkbox"/> some high school	<input type="checkbox"/> college/tech. graduate
<input type="checkbox"/> High school graduate	<input type="checkbox"/> graduate school
<input type="checkbox"/> Some college/technical school	
3. In which category did your household income fall last year, before taxes? Check one.
 

<input type="checkbox"/> less than \$10,000	<input type="checkbox"/> \$25,000-\$29,999
<input type="checkbox"/> \$10,000-\$14,999	<input type="checkbox"/> \$30,000-\$34,999
<input type="checkbox"/> \$15,000-\$19,999	<input type="checkbox"/> \$35,000-\$39,999
<input type="checkbox"/> \$20,000-\$24,999	<input type="checkbox"/> more than \$40,000
4. What is your marital status? Check one.
 

<input type="checkbox"/> single, dependants	<input type="checkbox"/> married, dependants
<input type="checkbox"/> single, no dependants	<input type="checkbox"/> married, no dependants
5. Record your sex.    ☐ male    ☐ female
6. What is the ZIP code for your mailing address? \_\_\_\_\_
7. Please write the type of business, industry, or service in which your company or employer is engaged. (Please be specific: steel manufacturing, education, textile wholesale, state government, hardware retailing, etc.) If you do not work for an employer, please write in your occupation or profession.  
 \_\_\_\_\_  
 \_\_\_\_\_
8. What is your title or position? (e.g. partner, president, homemaker, foreman, doctor, sales clerk, teacher, etc.).  
 \_\_\_\_\_  
 \_\_\_\_\_

THANK YOU FOR YOUR TIME AND COOPERATION.



**Nº 0025**



## APPENDIX B

### MEANS AND STANDARD DEVIATIONS OF 99 SURVEY ISSUES

Table 5. Means and standard deviations of 99 issues.<sup>2</sup>

Variable	Label	Mean	Standard Deviation	N
I1A	Bought for Valentine's Day	1.25	.44	463
I1B	Bought for Mother's Day	1.43	.50	463
I1C	Bought for Christmas	1.59	.49	463
I1D	Bought for a special event	1.51	.50	463
I1E	Bought for anniversary	1.34	.47	463
I1F	Bought for dinner party	1.34	.47	463
I1G	Bought for Easter	1.27	.45	463
I1H	Bought for no special reason	1.60	.49	463
I1I	Bought for Father's Day	1.03	.18	463
I1J	Bought for wedding	1.11	.32	463
I1K	Bought for Thanksgiving	1.22	.41	463
I1L	Bought for birthday	1.37	.48	463
I1M	Bought for funeral	1.40	.49	463
I1N	Bought for hospital	1.49	.50	463
I1O	Bought for Memorial Day	1.08	.27	463
I1P	Bought for other occasion	1.09	.28	463
I2	Number of floral purchases	4.84	1.87	462
I3	Product bought most often	3.11	1.66	401
I4	Product bought least often	3.35	1.92	434
I5	Number of floral purchases from supermarket	3.65	1.83	463
I6	Number of special trips to supermarket	2.10	1.34	462
I7	Place of most floral purchases	3.81	2.22	440
I8	Price willing to pay for a loose bunch	4.38	2.31	443
I9A	Bought for self	1.65	.48	462
I9B	Bought for spouse	1.22	.42	462
I9C	Bought for female friends	1.50	.50	462
I9D	Bought for parent	1.51	.50	462
I9E	Bought for grandparent	1.15	.35	462
I9F	Bought for family	1.36	.48	462
I9G	Bought for son	1.03	.17	462
I9H	Bought for daughter	1.17	.38	462
I9I	Bought for male friends	1.13	.33	462
I9J	Bought for other relative	1.22	.41	462
I9K	Bought for coworker	1.21	.41	462
I9L	Bought for other person	1.06	.25	462
I10A	Put flowers in kitchen	1.60	.49	461
I10B	Put flowers in dining room	1.67	.47	461
I10C	Put flowers in bedroom	1.34	.47	461

Table 5. Continued.

Variable	Label	Mean	Standard Deviation	N
I10D	Put flowers in living room	1.84	.36	461
I10E	Put flowers in bathroom	1.10	.30	461
I10F	Put flowers in bathroom	1.16	.37	461
I10G	Put flowers in entrance	1.18	.38	461
I10H	Put flowers on porch or patio	1.39	.49	461
I11A	Bought for office or workplace	1.22	.41	463
I11B	Bought for place of worship	1.13	.34	463
I11C	Bought for cemetery	1.26	.44	463
I11D	Bought for yard, lawn or patio	1.61	.49	463
I11E	Bought for no outside place	1.17	.37	463
I11F	Bought for other place	1.03	.17	463
I12	Day most often grocery shop	1.87	1.17	441
I13	How often grocery shop	2.55	.79	462
II1	Color importance rating	3.42	1.90	443
II2	Price importance rating	3.25	2.22	445
II3	Fragrance importance rating	6.14	2.11	435
II4	Size importance rating	4.38	1.94	439
II5	Package importance rating	6.63	2.08	431
II6	Freshness importance rating	2.32	1.69	447
II7	Mix importance rating	4.10	2.09	440
II8	Instruction importance rating	7.57	1.98	435
II9	Lasting importance rating	5.34	2.33	443
III1	Supermarket flowers as fresh as florist's.	3.25	.98	460
III2	Supermarkets sell same kinds of flowers.	3.25	.95	454
III3	Flowers should be given only on special occasions.	2.17	1.09	459
III4	Flowers were on shopping list before purchased.	2.70	1.20	457
III5	Men like to receive as much as women	3.08	1.10	456
III6	Flowers are easy to care for.	3.53	.91	459
III7	Display of flowers catches my eye.	4.32	.69	461
III8	Knew what was wanted before purchase made.	2.86	1.03	460
III9	Same number of flowers arranged should be priced similarly.	3.34	1.03	457

Table 5. Continued.

Variable	Label	Mean	Standard Deviation	N
III10	Use information on package.	3.78	.87	458
III11	Planned to buy before seeing.	3.33	1.07	460
III12	Florists give more care information.	3.17	.99	457
III13	Fragrant flowers better than non-fragrant flowers.	3.27	.99	461
III14	Supermarket floral prices are too high.	2.77	.99	458
III15	Delivered flowers have more meaning.	2.24	1.00	460
III16	Supermarket flowers are a better bargain.	3.43	.95	461
IV1	Novel flower preference	3.68	1.43	428
IV2	Casual flower preference	3.79	1.32	418
IV3	Designed flower preference	2.18	1.40	422
IV4	Store-bought flower preference	3.05	1.41	414
IV5	Pastel color preference	2.68	1.44	422
IV6	Domestic flower preference	3.97	1.13	403
V1	Like to buy flowers for self	3.68	1.09	456
V2	Enjoy giving as much as receiving.	4.14	.81	460
V3	Know how to make flowers last	3.54	.96	458
V4	Use some additive	3.25	1.07	457
V5	Like to have help choosing	2.81	1.07	458
V6	Know name of plants and flowers.	3.13	1.08	458
V7	Like to arrange own flowers.	3.09	1.11	457
V8	Supermarket more convenient place to buy flowers.	3.74	.89	456
V9	Supermarket flowers same quality as florist's.	2.98	.86	457
V10	Usually have fresh flowers at home.	2.94	1.12	454
V11	Like to have flowers near at work.	3.44	.97	445
V12	Can only afford flowers on special occasions.	2.90	1.14	453
V13	Like to touch flowers before buying.	3.14	1.08	456
V14	Like to try new kinds.	2.97	.93	453
V15	Important to have flowers near.	3.36	1.07	458

Table 5. Continued.

Variable	Label	Mean	Standard Deviation	N
V16	Like to wear flowers.	2.40	1.06	442
V17	Grow flowers for cutting.	2.86	1.32	440
V18	Like to smell before buying.	3.78	.95	441
V19	Plants in home as child.	3.59	1.12	441
VI1	Age on last birthday.	4.21	1.50	443
VI2	Highest level of education.	3.57	1.04	442
VI3	Household income last year.	5.15	2.45	421
VI4	Marital status.	2.92	.90	442
VI5	Sex.	1.85	.35	444
VI9	Coded title or occupation	222	101	463

## APPENDIX C

MEANS AND STANDARD DEVIATIONS  
OF FIVE CONSUMER SEGMENTS  
FOR 34 FLORAL PURCHASING FACTORS AND  
DEMOGRAPHIC VARIABLES

Table 6. Means of five consumer segments on five demographic variables and 34 floral purchasing factors.

<u>Variable</u>	<u>Friendly Buyers</u>	<u>Married Men</u>	<u>Selfers</u>	<u>Annuals</u>	<u>Educated Mothers</u>
Age	-0.16	0.05	-0.25	0.13	0.16
Education	-0.22	0.06	0.12	0.04	0.34
Income	0.01	0.25	0.02	-0.22	0.18
Sex	0.10	-0.17	0.22	-0.07	-0.33
Occupation	-0.18	0.07	-0.09	0.18	-0.19
<u>Factor</u>					
1 Number of purchases	0.04	0.07	0.41	-0.48	0.74
2 Self use	0.06	-0.29	0.59	-0.19	-0.31
3 Do-it-yourself	-0.05	-0.28	0.39	-0.16	-0.12
4 Planned purchases	0.01	-0.01	0.01	0.08	0.25
5 Post-harvest knowledge	0.11	-0.01	-0.30	0.09	-0.28
6 Try new kinds of floral products	-0.19	-0.04	0.05	0.17	-0.01
7 Price perception	-0.09	0.02	0.02	0.18	-0.23
8 Help in floral selection	0.02	-0.01	0.07	0.01	0.30
9 Grocery shopping frequency	0.04	0.08	-0.11	-0.05	0.06
10 Floral fragrance	0.01	0.23	0.07	-0.38	-0.17
11 Formal product preference	-0.15	0.22	0.18	-0.47	0.48
12 Post-harvest info- rmation importance	0.08	-0.25	-0.34	0.34	1.11
13 Price importance	-0.37	0.14	0.26	0.01	0.37
14 Flower color importance	0.25	0.06	-0.34	0.10	-1.25
15 Package importance	0.12	-0.05	-0.02	-0.13	0.23
16 Delivery importance	0.23	0.04	-0.08	-0.09	0.12
17 Bright color preference	-0.09	-0.03	0.05	-0.04	0.30
18 Supermarket floral image	-0.09	0.14	0.06	0.19	0.08
19 Supermarket floral product assortment	0.13	-0.12	0.20	-0.10	-0.14
20 Family meal holiday purchasing	-0.06	-0.27	-0.04	0.09	1.10
21 Purchasing for Mother	0.47	-0.18	0.01	-0.38	0.73
22 Purchasing for sympathy	0.29	-0.39	0.17	-0.11	0.23

Table 6. Continued.

<u>Factor</u>	<u>Friendly Buyers</u>	<u>Married Men</u>	<u>Selfers</u>	<u>Annals</u>	<u>Educated Mothers</u>
23 Purchasing for male friends	0.13	-0.32	-0.23	0.18	0.58
24 Purchasing for coworker	0.72	-0.17	-0.29	-0.27	-0.14
25 Purchasing for wife	-0.27	0.37	0.04	-0.33	0.16
26 Purchasing for wedding	0.16	-0.10	-0.47	-0.10	1.75
27 Purchasing for special event	0.13	-0.02	0.05	-0.02	-0.02
28 Purchasing for Father	-0.21	-0.17	0.02	0.16	0.22
29 Purchasing for outdoors	-0.02	0.47	-0.26	-0.02	-0.13
30 Purchasing for kitchen	0.03	0.52	-0.30	-0.22	0.25
31 Like to wear flowers	-0.08	0.02	-0.02	0.06	-0.07
32 Purchasing for other rooms in home	-0.15	0.03	-0.01	0.10	0.03
33 Purchasing for other occasions	-0.04	0.03	-0.06	0.07	0.18
34 Purchasing for other outside place	0.03	0.08	-0.10	0.03	0.26



APPENDIX D

CORRELATIONS BETWEEN CANONICAL DISCRIMINANT FUNCTIONS  
AND 34 FLORAL FACTORS

Table 7. Correlations between canonical discriminant functions and discriminating variables.

Factor or Variable	Function 1	Function 2	Function 3	Function 4
19	.41	-.05	.28	.14
16	-.27	.20	-.01	-.15
7	.26	.21	.04	-.13
14	.21	-.11	-.06	.04
22	-.07	-.05	-.03	.03
9	.06	-.01	-.04	.04
1	.05	.35	.09	.09
2	-.04	.28	-.28	.01
11	-.03	.25	.20	.08
8	.07	-.16	-.14	.08
10	.02	-.13	.02	-.12
z9	-.07	-.12	.01	.05
33	.01	.11	-.10	-.06
28	-.06	-.07	-.05	.02
25	-.03	-.04	.00	.02
13	-.04	-.02	.37	-.08
5	-.09	-.09	.26	-.07
17	-.12	.12	.24	.07
3	-.01	.19	-.19	.05
12	.16	.12	-.18	-.05
z3	-.03	.09	.16	-.01
z5	-.01	.09	-.14	-.06
30	.02	-.03	.07	.04
34	-.01	.01	-.07	.04
15	.24	.04	.01	-.43
21	.09	.18	.03	.34
20	.09	-.07	-.04	-.25
6	.21	.00	-.02	.22
26	.02	-.05	-.08	.16
z2	-.03	.02	.03	.16
18	-.04	-.06	-.06	.11
z1	-.02	-.06	.02	.10
24	-.06	-.02	-.05	.10
32	.02	.04	.02	.08
27	-.04	-.05	.01	.07
4	-.05	-.06	.02	.08
31	.02	.03	-.03	-.05
29	.01	-.04	.03	.04