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Research Paper

Consumer preferences for selected exotic flowering pot plants: A market assessment study

W.M.T. Prasadini  and H.S.R. Rosairo* 

Faculty of Agricultural Sciences, Sabaragamuwa University of Sri Lanka

*Corresponding Author: rosairo@agri.sab.ac.lk

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Abstract: The factors affecting consumer perception on up-country flowering pot plants were analyzed. Simple random samples of 100 end-users and 100 traders; wholesalers and retailers, who purchased flowering pot plants from nurseries in Badulla and Ratnapura districts were selected as interviewees to collect data using a researcher-

administered structured questionnaire. Gerbera (*Gerbera jamesonii* Bolus ex Hook f.), Petunia (*Petunia hybrida*) and Rose (*Rosa hybrida* L) were the three flowering pot plant species considered in this study as they are among the most popular exotic flowering pot plant species in the market at present. A half of the respondents was in the age category of 25 to 44 years, in the income category of Sri Lanka Rs. 15,000 to 30,000 (approx. USD 95-190) per month and had a formal education up to General Certificate of Education (Ordinary Level). The key intentions of purchasing flowering potted plants were for outdoor decoration or for planting in the home garden (78%). Other uses included indoor decorations (19%) and for gifting (3%). There were relationships ($p < 0.05$) between the plant variety with stage of blooming and flower colour at buying. However, there was no relationship ($p > 0.05$) between plant variety and petal type; single, double and multi-petal. Most flowering pot plants were purchased from large nurseries by intermediaries to be sold as wholesale and/or retail. Results showed that the price, but not the variety, affected the purchasing decision. A seasonal effect was observed in purchasing flowering pot plants *i.e.* sales peaks were observed during February to April and June to September, due to special days such as Valentine's Day. The less requirement for care was an important consideration when purchasing these plants. Majority of the customers got to know about the nurseries through word of mouth. Lack of new varieties such as spider gerbera, dwarf gerbera and spray roses, which were in demand, is one of the major constraints in purchasing flowering pot plants. Promotional campaigns including exhibitions, open fairs and home deliveries are suggested as suitable promotional strategies for nurseries. The results of this study could benefit the companies to gain a competitive advantage while expanding their market share in this important industry.

Keywords: Consumer preference, buying behaviour, market assessment, flowering pot-plants, Sri Lanka



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Introduction

Floriculture in Sri Lanka started as a commercial venture in the early 1970s. Since then, it has grown substantially during to become one of the major commercial and foreign exchange generating

industries of the country (Beneragama and Peiris, 2016). Commercial floriculture includes production of cut flowers, foliage and flowering potted plants, bedding plants and growing bulbs

and corms of flowering pot plants for wholesale and retail sales (Arora, 2003). Floriculture industry has become more specialized and thus, the floriculturists have to ensure a steady supply of flowers and foliage plants irrespective of seasons, and minimize losses to the industry because of the perishable nature of flowers (Prasad and Kumar, 2003).

Consumers tend to buy potted plants due to traditions, culture and lifestyle. Institutional use of potted plants has grown contributing to image building. Buyers require products with high quality, low price and added value. While most of the products end up at outlets such as florists, and local stores, the development of chains for florists, garden centres, warehouses and supermarkets is healthy. Due to clear market positioning, increased purchasing power and brands promotion, these chains have become large buyers with high-end and specific demands. This affects the wholesale of products, which has started specializing, professionalizing, and growing rapidly. To be service providers, cooperation with growers is steady and close, and coping together with the demands of the supermarkets with labels, certificates and quality audits to prove that the production is sustainable while incorporating environmental concerns.

Floriculture and nursery industries have developed rapidly in the recent years. Compared to food products such as milk, meat or citrus, floriculture and nursery crops lack an extensive marketing literature. In general, the demand for products depends on its attributes, especially in floral products (Reid, 2005). For most food products, the prevailing characteristics are to satisfy nutritional needs and/or taste. Even though ornamental plants do not satisfy any nutritional needs, they possess other important characteristics that influence the buying decision. Moreover, as ornamentals are not essential for survival, a substantial portion of the population is comprised of non-buyers or infrequent buyers. Therefore, it is likely that there is a considerable gap between the decision of buying or not, and the buying intensity. This decision seems to be linked to consumer demographics and the buying occasions and periods. Understanding how consumers make

choices of whether to buy or not and the perceptions of the characteristics of the products they buy are essential for predicting the demand for ornamental plants.

Consumers are influenced by consumer needs and wants, perspectives, attitudes and the experience at previous usage. They are also influenced by advertising and promotion programs, personal selling efforts, word of mouth effects, availability of the product, and differences in products, services and price. The consumer has to make decisions regarding what products to buy, at what prices and where to buy the products. All of these factors contribute to a post-buying experience in the customer's mind after the purchase takes place. Based on these factors, a consumer may choose depending on the level of satisfaction or utility obtained from the product whether to re-purchase the product (repeated buying) or not.

Floriculture and nursery products are purchased by people for numerous reasons such as expression of love or friendship and thankfulness or appreciation, and beautification purposes either for self-use or as gifts. These attributes of flowers and plants are difficult to be quantified directly. Therefore, the satisfaction gained from the consumption of these goods is closely related to the purpose of the purchase (Girapunthong, 2002).

Purchasing of flowers and ornamental (pot) plants in the last few years has undergone radical changes due, on the one hand, to the phenomenon of market globalization and on the other hand, to the economic development of societies. Consumer profile has changed deeply, particularly in western countries, where demand is made of recurrent purchases. This is partly due to the habits and traditions and partly to satisfy broader needs, related to recreation, embellishment of the environment and generally, to all positive values deriving from a plant or a flower. Choices between the two segments by consumers are basically related to various factors, such as season, price, product presentation such as packaging, etc., elements that can bring about different purchase attitudes (Sullivan, 1980).

The aforementioned literature regarding the demand for floral and other ornamental products indicates that there are many factors that affect their demand. Seasonal factors may also affect the demand for floricultural products. Pre-research inquiries by the researchers revealed a seasonal effect in purchasing flowering pot plants, *i.e.* there were annual sales peaks during February to April and June to September. Moreover, there are certain

Methodology

Numerous factors can motivate a consumer to decide on purchasing flowering pot plants. Some of these may be attributed to demographics of a consumer (*e.g.* age, education and income), while others can be characteristics of flowering plants and other factors such as price, season and demand for care. A cross-sectional survey was conducted to assess the factors that determine the consumer's buying behaviour on exotic flowering pot plants. A simple random sampling technique was adopted for the survey consisting of 100 end users who visited nurseries to purchase flowering pot plants, and 50 wholesalers and 50 retailers who purchased potted flowering pot plants from nurseries in Badulla and Ratnapura districts. These districts were identified as areas where a considerably large number of flowering pot plants nurseries are located.

Primary data related to consumer's buying behaviour of exotic flowering pot plants, was collected by interviewing the end users (consumers). A questionnaire was developed with open-ended questions and closed-ended questions to assess the consumer behaviour. Data were collected from persons who had different literacy levels. Therefore, the questionnaire was pre-tested prior to the data collection procedure. A structured questionnaire was developed to assess consumer preference for exotic flowering pot plants consisting of questions on general personal information such as gender, age, education level and income level representing the demographic profiles of the consumers. Data on the consumer preference on plant characteristics such as blooming stage, petal type and flower colour were gathered by using a table included in the questionnaire. Questions to check the consumers'

calendar occasions where the demand for flowers is higher compared to other non-calendar occasions. The most common calendar occasion dates are the Mother's Day and Valentine's Day (Ward, 1997). Therefore, this study attempted to identify the governing factors that influence the buying behaviour of flowering pot plants that help to increase sales volumes of nurseries while satisfying the consumer preferences.

consideration on the price, season and demand for care when making the purchasing decision for flowering plants were included in the questionnaire. Questions related to plant characteristics and factors influencing the purchasing decision for plants too were included. Ranking questions were used to collect data on consumer buying behaviour for flowering pot plants. In addition, the questionnaire consisted questions to collect data on the awareness namely through word of mouth, World Wide Web, advertisements and leaflets, and questions to identify difficulties when purchasing flowering pot plants.

Local information and statistics on current status of the floriculture sector of Sri Lanka, status of potted plant industry of Sri Lanka were collected from secondary sources such as text books, research publications, and online resources. The primary data on end consumers, wholesalers and retailers were processed to yield descriptive statistics of the sample such as mean comparison and through cross tabulation using the Chi-square test ($p=0.05$). Pre-research inquiry revealed that Roses (*Rosa hybrida* L), Gerberas (*Gerbera jamesonii* Bolus ex Hook f.) and Petunias (*Petunia hybrida*) were the species that had the highest sales among the flowering pot plants. Therefore, only these three varieties were selected for this study. The pre-study investigations also suggested that there is an association between the plant variety (Rose Gerbera or Petunia) and the blooming stage (budding, half bloomed or fully bloomed) of the pot plants at the time of purchase. Associations have also been suggested between the plant variety and its' petal type (single, double or multi-petal), and the plant variety and colour of flower (light, dark or

bi-colour) when buyers are purchasing the flowering pot plants. Therefore, the hypotheses tested were the association between the plant variety and (1) its blooming stage, (2) petal type and (3) the flower colour at the time of purchase.

Cross tabulation with Chi-square test was applied to determine the association between consumer preferences for characteristics of flowering pot plants including blooming stage, petal type and flower colour across plant varieties. One way ANOVA was conducted to analyse factors influencing purchasing decisions for different

flowering pot plants. Factors influencing purchasing flowering pot plants considered were price, season, and (less) care requirement of the plants. Customers were asked to rank these factors as important, neutral, and not important by assigning a value from one to three according to importance. Mean comparison was done to evaluate the relative importance of the factors mentioned when making a purchasing decision for flowering pot plants. A pictorial representation of the links between the factors studied and the consumer preference was developed.

Results and Discussion

The basic characteristics of different groups in the sample are given in Table 1.

Table 1. Key characteristics of the different groups in the sample

Key characteristic		Percentage response		
		End users	Traders	Overall
Gender	Male	46	49	47
	Female	54	51	53
Age distribution (yrs.)	< 25	4	2	3
	25 - 44	50	52	51
	45 - 55	45	45	45
	> 55	1	1	1
Level of education	No schooling	16	18	17
	GCE Ordinary Level	48	46	47
	GCE Advanced Level	27	33	30
	Graduate or above	9	3	6
Monthly income (Rs)	< 15,000	7	27	17
	15,000 - 30,000	45	51	48
	> 30,000	48	22	35

The sample had approximately equal proportions of gender (47% males and 53% females). This could facilitate any strategy to be implemented to enhance the sales volume despite the gender of the buyer and hence, gender specific moves are not necessary. A half of the respondents was in the age category of 25 to 44 years. People in such age groups are opinion leaders to popularize the products and nurseries among the other age categories. Majority of the customers had an education up to G.C.E. O/L while a majority has a monthly income range of Sri Lanka Rs. 15,000 to 30,000 (approx. USD 95-190), while a minority had a monthly income below Rs.15,000.

Buyer's preferences for uses and plant characteristics

Wholesalers and retailers purchased the flowering pot plants (Roses, Gerberas and Petunias) from nurseries for resale. Fifty percent of the sellers were in the retailing business; and 10% were in the wholesale business while the balance 40% engaged in both forms of the business. Seventy eight percent of the end users bought flowering pot plants for outdoor decorations. Other uses included indoor decorations (19%) and for gifts (3%).

Preferences of buyers (end users and traders) towards the plants varied mainly from blooming stage to petal type and the flower colour. The

Pearson's Chi-square statistic was 25.28 (df = 4; $p < 0.05$) indicating that there is a relationship between the blooming stage and the plant variety purchased. Eighty percent of the customers tend to buy plants with half bloomed flowers than buds and fully bloomed flowers when purchasing Rose

plants as the customers can clearly see the flower colour that the and flower can stay on the plant in that stage. Plants with buds are more preferred by the customers when buying Gerbera (65%) and Petunia (60%) (Figure 1).

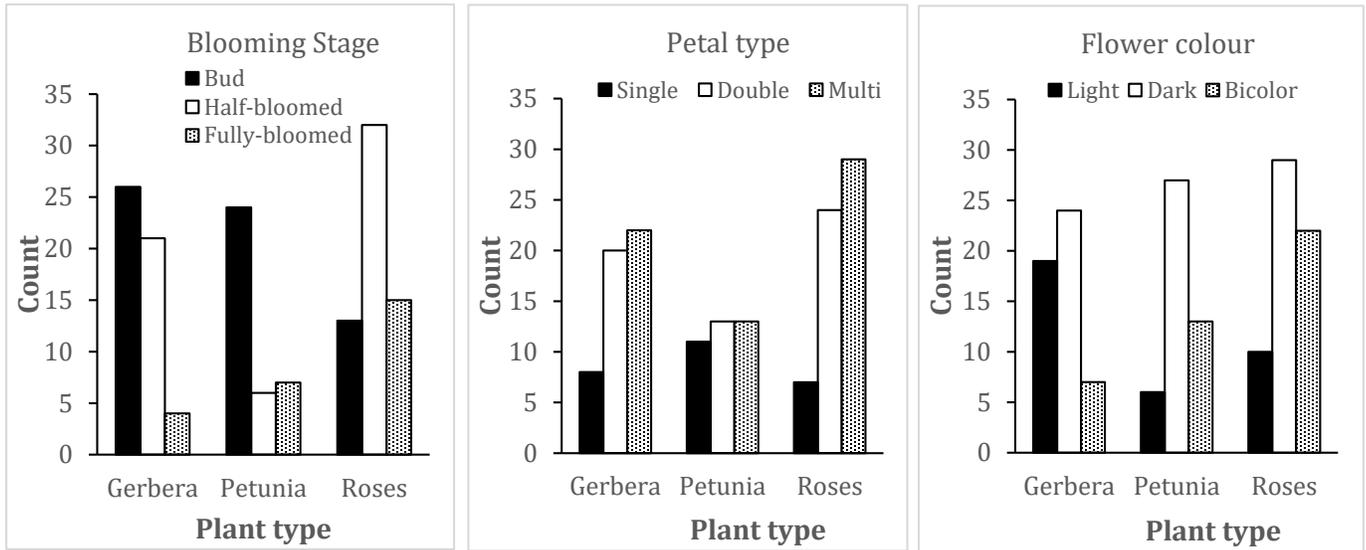


Figure 1. Preferences for blooming stage, petal type and flower colour of flowering pot plants (criteria for petal type of Roses: if number of petals <10 = single-petal; if number of petals 10-20 = double petal; if number of petals >20 = multi-petal).

The Pearson's Chi-square statistic related to the association between the plant variety purchased and its petal type was 3.76 (df=4; $p=0.44$) indicating that there was no significant relationship between the petal type and the plant variety purchased. However, the data showed that the end users tend to buy plants with multi petal flowers when buying all the three flowering plant varieties (73% for Gerberas, 43% for Petunias and 97% for Roses). Less number of consumers tends to buy plants with single petal flowers when purchasing all the three plant varieties (27% for Gerberas, 37% for Petunias and 23% for Roses) (Figure 1). However, the consumer preference for double petal and multi-petal flower are same (43%).

The Pearson's Chi-square statistic was 11.58 (df=4; $p=0.021$) for the relationship between the plant variety purchased by the end users and its flower colour (light, dark or bi-colour). Of the buyers who purchased Gerberas, Petunias and Roses, 80%, 90% and 96%, respectively, preferred dark flower colour when purchasing the three plant varieties.

However, customers gave the least priority for bi-colour flower plants (23%) when purchasing Gerbera. Light shade of any major colour was the least preferred petal colour in the cases of Petunias (20%) and Roses (33%) (Figure 1).

Factors influencing the purchasing decision: price, season and demand for care

A results of the one-way ANOVA for price and plant variety ($p=0.462$) indicated that the preference of end users for price does not differ significantly across the variety of the plant. A comparison of means of relative importance revealed that the consumer's preference of relative importance for price did not differ significantly ($p > 0.05$) across the three plant varieties, Gerbera, Roses and Petunia had mean values of price close to each other (Sri Lanka Rs. 1.75, 1.81 and 1.86, respectively). However, the relative importance placed on price became an important factor at purchasing Gerbera, Roses and Petunia when compared with other pot plant varieties in the market (mean of relative

importance of price collectively is Sri Lanka Rs. 1.00).

The relationship between the season (or weather) and the plant variety purchased ($p=0.952$) and with the plants' demand for care ($p=0.712$) indicated the acceptance of the hypotheses tested that the consumer's preference for season did not differ significantly with the plant variety purchased, and that the consumer's preference for plants demanding low care did not differ significantly with the plant variety purchased. Gerbera, Petunia and

Roses and other exotic flower plants showed mean values to conclude that the relative importance of season (2.1, 2.1, 2.1, and 2.3, respectively) and the demand for care for plants (means of 2.2, 2.1, 2.3 and 2.6 respectively) were not important factors when purchasing those pot plants. Therefore, the study results contradicted the general idea that the sales of potted exotic flower plants are dependent on weather (season) and care. Figure 2 depicts the conceptual model to display the factors affecting the consumer preference of these products.

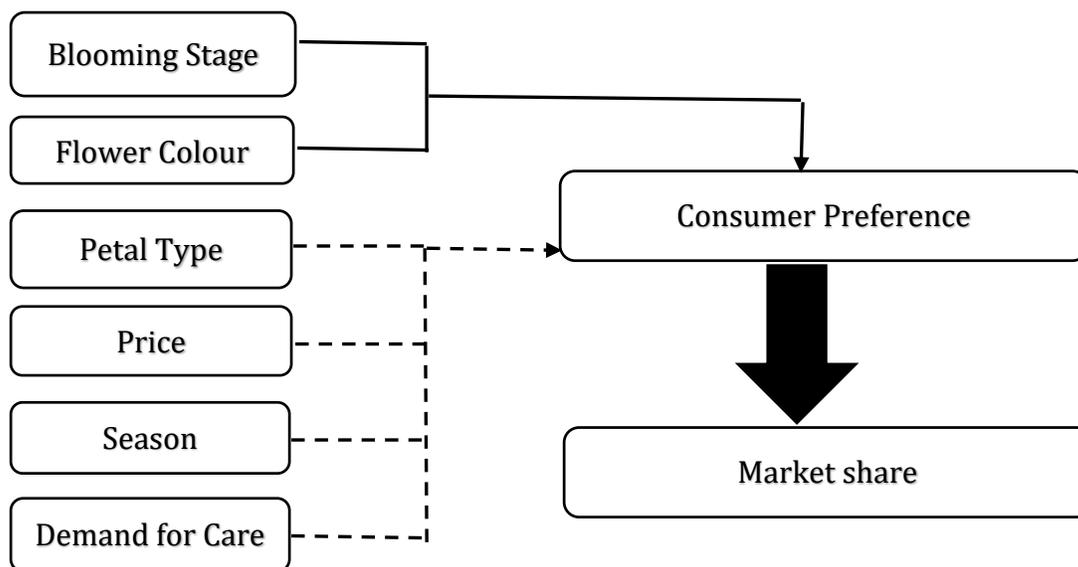


Figure 2. Factors affecting consumer preference of selected flowering pot plants (solid lines indicate significant relationships)

Awareness methods

Customers got to know about the nurseries through various communication methods. Word of mouth (81%), World Wide Web (18%), advertisements on TV and newspapers (23%), and leaflets/handbills (16%) were the main communication methods used by the flowering pot plants nurseries.

The majority of respondents have got to know about the nurseries of flowering pot plants through word of mouth. Mass media tools were less popular as the nurseries were localized. Although majority of nursery owners used word of mouth to promote their products, it would be better to use other modern methods such as online resources, TV/radio or newspaper articles as these methods

are more familiar to the end users. However, it may not be feasible for small and medium scale nursery businesses to use TV/Radio or other mass media due to high costs involved in such methods and localized nature of their businesses.

Reasons for difficulties in purchasing flower plants

Some of the customers have faced difficulties in purchasing flowering pot plants. Among such difficulties, lack of plants with new characteristics (24%), high price (6%) and inconvenience due to location of nurseries (11%) were the most predominant. Absence of new characteristics of flowering pot plants is a major issue in purchasing them. High price was also a concern to the consumers. It was revealed that the varieties such

as Dwarf Gerbera, Spider Gerbera and Spray Roses, which suits the current demand, were not regularly available in the market. It was also revealed that inconvenience due to factors such as nursery being

located away from the main road and lack of facilities such as parking and billing have affected the sales of potted flower plants.

Conclusion

The study revealed that the sales strategies should be planned according to the special features of the socio-demographic profile of the target group such as age distribution, status of education level and monthly income. There were different consumer preference levels with regard to the blooming stage and the colour of flowers associated with the different varieties of flowering pot plant. The multi-petal flowers were preferred by consumers in all plant varieties tested.

Though customers may exhibit different kind of behaviour for the price, season, and demand for care when purchasing flowering pot plants available in the market, the consumers' preference for these aspects do not differ significantly among Roses, Petunias and Gerberas. Due to the high sensitivity of the customers to the price across plant types, producers should make changes in

price of flowering pot plants like Roses, Petunias and Gerberas after careful study of market demand and supply. Word of mouth is main mode of receiving information on the nurseries. Promotional activities are important in the marketing of flowering pot plants. The producers should use modern methods such as online sales, TV/radio or newspaper advertisements to attract more customers. Participation at exhibitions, open fairs and deliveries could be suggested effective methods to sell plants from nurseries. Absence of flower plant types with new characteristics is a key constraint to the development of the industry. Inconveniences caused due to location of nurseries have also affected the plant sales due to less customers. Appropriate policy decisions are required to improve the performance of sales outlets of ornamental potted plants to maintain a high market share in the industry.

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