Discriminating Factors Influencing Consumer's Floral Buying Decisions

Sohail Ahmed Panezai[*], Hadi Hassan Khan[†], Bilal Sarwar[‡]

Abstract

The study aims to provide the discriminate relationship among the sensory hedonics, emotional conditioning, curiosity fulfillment, monetary benefit, and showing care with the buying decision of consumers. The data were collected through a self-administrative questionnaire from 260 respondents. Discriminant analyses were applied to identify the relative variables of consumption values because of the dependent categorical variable. The discriminant analysis showed that the curiosity fulfillment which is consumers need to seek novelty and variety was found to be the strongest predictor along with sensory hedonics that includes essential flower characteristics, in particular scent, freshness, and appearance while emotional conditioning and showing care to others was next in importance as a predictor and monetary worth was the worst predictor. This study also provides insights for flower retailers, marketing managers, and horticultural practitioners about the prioritization of cut flower features by floral buyers.

***Keywords*:** consumers, sensory hedonics, emotional conditioning

Introduction

The florist industry is competing against many other markets in which fresh-flowers are selling at low prices due to the high increase in demand for flowers ordering directly from the farm to consumers in the early 20th century (Berkshire, 2015). It is known now that giving of "gifts" is one of the key aspects that drive the increase in the growth of the overall global floral industry. It is known that almost 60% of Americans use flowers for gifts at least once, and nearly 80% of the purchases of fresh flower are for gifts (Li et al., 2016). Cut flower attributes and their consumer preferences have been intensively studied in the USA (Behe et al., 1999; Behe & Yue, 2008). (Huang, 2005) describes the key factor behind influencing the choice of flowers for gifts are flowers. Li et al. (2016) identified factors affect buying decision of consumers in United State and the most effecting factor are price, visual appeal, Quality of blooms and foliage, availability, and colors which are 21%, 18.7%, 15.9%, 10.2%, and 9.8% respectively.

Flowers are used to creating an ambiance that suits the home and business environments. The use of flowers as gifts to express

[*]MS Scholar, Department of Management Sciences, Balochistan University of Information Technology Engineering & Management Sciences (BUITEMS), Quetta, Pakistan.

[†]Assistant Professor, Department of Management Sciences, BUITEMS, Quetta, Pakistan. Email: hadi.hasssan@buitms.edu.pk

[‡]Assistant Professor, Department of Management Sciences, BUITEMS, Quetta, Pakistan. Email: bilal.sarwar@buitms.edu.pk

feelings of thankfulness, sympathy, affection, or status (Huang & Lin, 2015; Palma & Ward, 2010). Consuming, purchasing, choosing, and using up commodities like roses is a complicated social and cultural process (Ziegler, 2004). Flowers are used for religious, corporate, and other social events as well. In line with the findings of (Huang, 2005) academic research reveal that gift giving is a key aspect that compels the consumer to buy cut flowers. It is mainly used for decorative purposes, but many flowers have medicinal and other commercial uses. Their prettiness and emblematic importance of affection towards others, belongingness, status, festivity, kindness, are the basis that cut flowers have long been used as gifts to augment social relationships between people or to symbolize something vital in customs. (Ziegler, 2004).

In Pakistan, the floral business is for the most part located around the large urban communities like Karachi, Lahore, and Islamabad and the trade and production of flowers by (Manzoor et al., 2001). Consumer preferences drive consumer demand for flowers but there is a lack of knowledge about consumer preferences of cut-flowers in the floral market of Quetta and also the selling and cutting flowers in the floral market has always been a concern for the florists and traders (Huang & Yeh, 2009b). Studying what drives consumers or what factors influence consumers choice of what to buy, what kinds of flowers to buy, and how much to buy can help to lessen the concerns of florists and traders.

Literature Review

In purchasing goods and services the motivation and reason behind it are clarified by the theory of "consumption values" (Long & Schiffman, 2000). The theory consists of a range of products and services it includes Industrial goods and both physical and non-physical consumption goods. (Sheth et al., 1991b). The five proposed consumption values are functional and social (Huang, 2005; Ziegler, 2004), emotional (Huang & Lin, 2015), epistemic, and conditional value (Sheth et al., 1991b). These values tend to influence the choice of the consumer in buying a specific brand, buy" or "not to buy, and what type of brand to buy (Huang & Yeh, 2009a). Product categories and different types of products may deliver different types of consumption values to consumers. Similarly, flowers deliver different consumption values to consumers that are sensory hedonics, emotional conditioning, monetary worth, curiosity fulfillment, and showing care to others" (Huang & Yeh, 2009b).

The pleasure and joy aroused through human senses are known as sensory hedonics. The sense of sight, smell, and touch all included in sensory hedonics (Huang & Yeh, 2009b). Sensory hedonics here refers to a functional value which according to the theory of "consumption values" describes functional value as the perceived advantage that is acquired from the practical, functional, and material performance of circumstances. (Sheth et al., 1991). A consumer decides based on the properties and qualities that a product is made of or the lack of such properties makes him decide whether not to purchase a product or to purchase (Huang, 2017). Moreover, in his study, they discussed various metaphors most often used as a gift and building social relationships.

Emotion conditioning is a value that is more psychological in nature and that conditions the consumer's mind into a calm, peaceful, and pleasant status (Huang & Yeh, 2009b). Consumer behaviors within a framework can be described as expressions of feelings or emotional responses towards "product, advertisements, brands and situations"(Hawkins & Mothersbaugh, 2010). The value that is emotional in nature can be a gain or benefit acquired due to sensational or emotional conditions which change with the mood changes like, fragrance, location, and multi-colors (Ongy et al., 2018). This type of consumption value is a result of reactions consumers express for a product (Xiao & Kim, 2009). In a study by (Matsuo, 2008) it was observed: "*that plants have the function of healing and can satisfy the human being need for self-esteem"*. Hardly attention is paid to flowers' intrinsic value and mostly it is seen to be of symbolic value. It may not satisfy the basic human needs of food clothing and shelter but it does incorporate the feelings of self-esteem (Behe, 1989; Behe, 1993).

Curiosity fulfillment is a consumption value related to consumers' need to explore and seek variety. Value is delivered when it satisfies the consumer's need to seek variety (Huang & Yeh, 2009b). Curiosity fulfillment which has been referred to as "epistemic value" by (Sheth et al., 1991b) can be explained as the perceived or attained curiosity from the purchase of a product, and his need or desire for novelty is fulfilled. Consumers with the motive to seek novelty or variety are sometimes willing to pay high prices on basis of attributes (Rombach et al., 2018b).

In the case of flowers, men prefer red roses over other colors while women had preferences other than red and the least preferences for pink colors (Hutchison & Robertson, 1979). In addition, Wang et al. (2017) stated that the red color is most predominant in the selection of roses in Beijing. One can see that women tend to vary. Flower

composition, display in vase flowers other than red roses that are with more variety improved the marketability of flower baskets or flower arrangements as identified by (Dzokoto et al., 2018; Robertson & Chatfield, 1982). Monetary worth is the consumption value that refers to the value related to the performance of the product. In the case of flowers, it refers to the longevity or quality and that is assessed in conditions of the value in term of the cost that the consumers are ready to pay (Huang & Yeh, 2009a). The price affects many consumer decisions, the background of consumers such as the personal values of customers, and the socio-economic background of consumers may be responsible to influence consumer decisions. Therefore the price is an important factor in making a purchase decision. (Huang & Lin, 2015).

The consumption value that is "showing care to others" is related to the "Social value" of consumption value theory. According to (Sheth et al., 1991b), social value is explained as the "perceived and attained benefit as about one social faction or several social factions". The attained social advantage for the customer might be contrarily or emphatically identified with other financial, social, and statistic gatherings. Opinion leaders or reference gatherings are the ones that influence the utilization of references (Sheth et al., 1991). This is further explained by (Schiffman & Kanuk, 2009) that "in society, there is a hierarchy among the individuals according to their status and this hierarchy generates the concept of social classes".

Theoretical Background

In considering the driving factors that in fluence buyers' decision to pay for the flowers, such as not to purchase or to purchase, how much to purchase, or what type of flowers to purchase, will assist floral retailers in resolving such concerns (Sheth et al., 1991b). In Literature we go through models and theories that explain and analyze consumer behavior. These models are not adequate to explain post-modern consumer behaviors. The model that is most up to date in explaining and analyzing consumer behavior is developed by (Sheth et al., 1991b). The model is known as the "consumption values model" and it focuses on explaining consumer behavior using consumption values.

Purchase of durable goods the consumption values such as social value, emotional value, quality, and price were considered (Sweeney & Soutar, 2001), In the case of flowers "consumption values" that were identified for floral buyers were more relevant to the epistemic value and the emotional value (Oppenheim & Fly, 2000). Plants have the utility of curative for human beings and delight for

them when they share their experiences of taking care of flowers with their family members and friends; this incorporates the social values and emotional values (Matsuo, 2008).

The findings of the previous studies were used to identify the consumption values for floral buyers, as a result, five consumption values that were digger out included sensory hedonics, curiosity fulfillment, emotional conditioning, showing care to others, and monetary worth of flowers. This study gives more insights into the literature related to consumers buying decisions and consumers' values related to the floral market. These relationships will also add a new contribution to the existing models in the modern era of consumer buying behavior.

H_1: *Sensory Hedonics discriminate against the floral buying decision of the consumer.*

H_2: *Emotional Conditioning discriminate against the floral buying decision of the consumer.*

H_3: *Curiosity Fulfillment discriminates against the floral buying decision of the consumer.*

H_4: *Monetary Worth discriminate against the floral buying decision of the consumer.*

H_5: *Showing Care to others discriminate against the floral buying decision of the consumer.*

Research Design and Methodology

The research has used primary sources of data to investigate the relationships. The nature of research is the deductive approach (quantitative analysis). The survey questionnaire method is used to collect the data and from respondents from Pakistan generally not from specific target groups of people. Finally, 260 responses were collected through a self-administrative questionnaire using a convenience sampling technique. The questionnaire consists of 36 questions out of which the first three questions are related to the socio-economic details of respondents and the rest are about the variables under study. The Instrument used for data collection is adopted by (Huang, 2005) and (Huang & Yeh, 2009a). It was applied to examine the key variation across the floral consumer groups to their "consumption values" for flowers. SPSS software (SPSS 25) was used to conduct a statistical analysis. Discriminate analyses were used to find the consumption values and discriminate between floral buying decision that is between those who are “More Likely to buy” and “Less likely to buy”. Discriminant Analysis is used when the dependent is a categorical variable.

Results

The purpose of "Discriminant analyses" is to find or foresee a group-membership , so we look at if there are any "significant differences" between the groups on every one of the "independent variables" using data results showing group means. Means tables give this information that when and if there are no huge group differences it is not important going on or continuing any further with the work or investigation. A rough indicator of variables that might be significant can be gotten by looking at the group mean's standard-deviations. Here we can see that all five variables show differences in mean scores, it suggests that they all are discriminators Table 1. Table 2 also supports this as inter-correlations between these Independent variables are low.

Table 1- Group Statistics

Purchase Decision		**Mean**	**S.D.**
Less likely to purchase	Monetary worth	2.8792	.96528
	Showing Care	3.7800	.76397
	Emotional Conditioning	3.6781	.88517
	Curiosity Fulfillment	3.1571	.72722
	Sensory Hedonics	3.5625	.65778
Likely to purchase	Monetary worth	2.6838	.95331
	Showing Care	3.5205	.95474
	Emotional Conditioning	3.9776	1.07750
	Curiosity Fulfillment	3.7106	.79355
	Sensory Hedonics	3.9145	.84845
Total	Monetary worth	2.7827	.96134
	Showing Care	3.6519	.87044
	Emotional Conditioning	3.8259	.99309
	Curiosity Fulfillment	3.4304	.80748
	Sensory Hedonics	3.7363	.77585

Table 2- Pooled Within-Group Matrices

		(1)	**(2)**	**(3)**	**(4)**	**(5)**
Correlation	(1) Monetary worth	1				
	(2) Showing Care	-.021	1			
	(3) Emotional Conditioning	-.163	.119	1		

	(4) Curiosity Fulfillment	-.164	.140	.385	1	
	(5) Sensory Hedonics	-.028	.146	.352	.211	1

Log determinants and Box's M

In Discriminant Analyses the essential supposition will be that the "variance" and "co-variance" matrices are proportional/equivalent. The Null hypothesis is tested by Box's M test that the covariance-matrices do not vary between groups made by the dependent. The analyst needs this test not to be significant with the goal that the null hypothesis that the gatherings do not vary can be held.

Table 3- Log Determinants

Purchase Decision	Rank	Log Determinant
Less likely to buy	5	-2.711
More likely to buy	5	-1.294
Pooled within-groups	5	-1.886

Note: The ranks and natural logarithms of determinants printed are those of the group covariance matrices.

The log determinants should be equal for this assumption to hold. *When tested by Box's M, we are looking for a non-significant M to show similarity and lack of significant differences*. In the below-mentioned case, the log determinants have appeared alike or similar and Box's M is 19.642 with F = 1.264 which is significant at p <.215 (Tables 3 and 4).

Table 4- Box-M and Eigen Value

Test Results	
Box's M	19.642
F (prob.)	.215
Eigenvalues	
Function	1
Eigenvalue	.214
Canonical Correlation	.420

Note: Tests null hypothesis of equal population covariance matrices and canonical discriminant functions were used in the analysis.

Eigenvalues

The greatest number of "discriminant function" delivered is the number of groups less than 1. We are just utilizing two groups here, to be specific "less likely to buy" and "more likely to buy", so just one function is shown. The value of .420 in Table 4 suggests the model

explains 17.64% of the variation in the "grouping variable", i.e. whether a consumer is "less likely to buy" or "more likely to buy'.

The significance of the discriminant function is indicated by Wilks lambda. The above (Table 5) indicates a highly "significant function" ($p < .000$) and it provides the proportion of "total variability not explained", i.e. it is the opposite of the squared "canonical correlation". So, the 82.4% unexplained variance is shown.

Table 5- Wilks' Lambda

Wilks' Lambda	Chi-square	Sig.
.824	29.724	.000

Standardized Canonical Discriminant Function Coefficients

The clarification or understanding of the discriminant coefficients (or loads) resembles that in "multiple regression". Table 6 gives a file of the significance of each indicator. The sign shows the heading or course of the relationship. Curiosity Fulfillment and Sensory Hedonics score was the most grounded indicator while "showing care to others" (note negative sign) was of subsequent significance as an indicator. "These three factors with big coefficients emerge as those that firmly foresee allotment to the "Less likely to purchase" or "more likely to purchase group". The emotional conditioning score is not as successful as the predictor or we can say it was not large enough to be categorized as a successful predictor.

Structure Matrix

The structure matrix table (Table 6) shows the correlations of each variable with each discriminate function. These Pearson coefficients are structure coefficients or discriminant loadings. They serve like factor loadings in factor analysis. By identifying the largest loadings for each discriminate function, the researcher gains insight into how to name each function. The results show that curiosity fulfillment and sensory hedonics suggest that it discriminates between "Less likely to buy" and "More likely to buy". Generally, just like factor loadings, (0.30) is seen as the cut-off between main and less important variables. Monetary Worth is not loaded on the discriminant function i.e. is the weakest predictor and suggests that Monetary Worth is a function of other un-assessed factors.

Table 6- Canonical Discriminant Function and Structure-Matrix Coefficients

	Canonical Discriminant Coefficients	Unstandardized Canonical Discriminant Coefficients	Structure Matrix
Monetary worth	-.105	-.109	-.222
Showing Care	-.494	-.572	-.327
Emotional Conditioning	-.084	-.085	.331
Curiosity Fulfillment	.784	1.031	.792
Sensory Hedonics	.439	.580	.506
Constant		-2.983	

Note: Pooled within-groups correlations between discriminating variables and standardized canonical discriminant functions Variables ordered by the absolute size of correlation within the function.

Canonical Discriminant Function Coefficients

These "unstandardized coefficients" are utilized to make the discriminant function equation. It works simply like a regression equation. For this research study the discriminant function equation is:

D = (1.031 × *Curiosity fulfillment*) + (.580 × *Sensory Hedonics*) + (−.109 × *Monetary Worth)* + (−.572 *Showing Care to others*) + (-.850 x *Emotional Conditioning*) − 2.983.

The discriminant function coefficient or “beta” of the standardized form both indicates the fractional contribution of each variable to the "discriminate function" and “controlling for all other variables in the equation”.

Classification

The classification results reveal that 72.6% of respondents were classified correctly into “Less Likely to Purchase” or “More Likely to Purchase” groups. ‘Less Likely to Purchase’ have been classified with somewhat good accuracy (77.5%) ‘More Likely to Purchase’ are classified as (76.9%).

Discussion and Conclusion

Discriminant analysis was carried out to predict whether a floral buyer was "Less likely to buy flower" or More likely to buy flower". Predictor variables were Monetary Worth, Sensory Hedonics, Curiosity Fulfillment, Showing Care to others, and Emotion Conditioning. Significant mean differences were observed for all the

predictors on the DV, while the log-determinants were rather alike. A significant association between all predictors and groups was revealed by discriminate function accounting for 17.64%, between-group variability, although as structure matrix was closely examined it revealed two significant predictors specifically, "Curiosity Fulfillment" (.792) and "Sensory Hedonics" (.506) were the strongest predictors while "Emotional Conditioning"(.331) and "Showing care to others" (-.327)" were next in importance as a predictor and monetary worth was the worst predictor. Overall, 75.6% were correctly classified as shown by cross-validated classification.

Hypothesis H_1, H_2, H_3, and H_5 are accepted as the results show that all variables discriminate for floral buyers, although "Monetary Worth" is seen to discriminate the lowest between floral buyers who are less likely to buy and more likely to buy therefore we can reject the H_4 hypothesis. According to the results "Curiosity Fulfillment" turned out to be the strongest predictor for floral buyers. This shows that floral buyers seek variety and novelty in flowers and always want to explore something new about flowers. Secondly, Sensory Hedonics turned out to be the strong predictor that is consumers give more importance to essential flower characteristics in particular "scent", "freshness" and "appearance" as earlier studies have also shown (Rombach et al., 2018a).

The variable explains that floral consumers give more importance to the functional attributes of the product. This is the case with fresh flowers as consumers want the floral products to perform better that is for how long the fresh flowers can stay fresh to grow quickly. (Behe, 1993) also admitted that consumers tend to smell flowers just before buying them, this is in line with our results as consumers find scent an attribute of importance in buying flowers. Consumers usually evaluate the flower's attributes with the use of their senses, so the scent of the flowers can give them a good indicator of the freshness of the flower. It is known that older flowers do not have a good scent as compared to fresh flowers therefore consumers prefer flowers that have scent with those without scent.

The study included the consumption values, it is recommended that future studies can evaluate the potential of specific varieties, multi-group analysis on gender and age basis in the Pakistani context, with cultural and cross-cultural level, supply and demand level, and national and international levels. Further, it is suggested that it can be imperative to investigate in-depth analysis to answer how farmers can develop their sector and maximize opportunities to marginalize in the floral market.

References

Behe, B., Nelson, R., Barton, S., Hall, C., Safley, C. D., & Turner, S. (1999). Consumer preferences for geranium flower color, leaf variegation, and price. *HortScience*, *34*(4), 740-742.

Behe, B. K. (1989). *Floral purchase behavior of Pennsylvanians* The Pennsylvania State University]. University Microfilms International.

Behe, B. K. (1993). Floral Marketing and Consumer Research. *HortScience*, *28*(1), 11-14.

Behe, B. K., & Yue, C. (2008). Estimating U.S. Consumers' Choice of Floral Retail Outlets. *HortScience*, *43* (3), 764-769.

Berkshire, D. L. (2015). *Marketing Effects on Consumer Retention and Expenditures in Central Kentucky and North Central Tennessee Floral Industry* Western Kentucky University]. Bowling Green, Kentucky.

Dzokoto, J., Obeng-Sarkodie, K., & Badu-Prah, C. (2018). What Drives Purchase Decisions of Cut Flower Consumers? *UDS International Journal of Development*, *5*(1), 144-159.

Hawkins, D. I., & Mothersbaugh, D. L. (2010). *Consumer Behavior: Implications For Marketing Strategy* (11 ed.). McGraw Hill Irwin.

Huang, L. C. (2005). Floral Product Behaviours and Their Influence on Consumer Floral Purchase Frequency. *HortTechnology*, *15*(4), 766-771.

Huang, L. C. (2017). Self-congruity in the purchase behavior of floral gifts. IV International Conference on Postharvest and Quality Management of Horticultural Products of Interest for Tropical Regions 1278,

Huang, L. C., & Lin, Y. C. (2015). Who Decides to Give a Gift of Fresh Flowers? The Effects of Givers and Receivers on the Likelihood of Buying Fresh Flowers for Gifts. *HortScience*, *50*(7), 1028-1034.

Huang, L. C., & Yeh, T. F. (2009a). An analysis of floral consumption values and their difference for genders and geographic regions. *HortTechnology*, *19*(1), 101-107.

Huang, L. C., & Yeh, T. F. (2009b). Floral Consumption Values for Consumer Groups with Different Purchase Choices for Flowers. *HortTechnology*, *19*(3), 563-571. https://doi.org/https://doi.org/10.21273/HORTSCI.19.3.563

Hutchison, N., & Robertson, J. (1979). Consumer demand analysis for roses. *Journal of the American Society for Horticultural Science*, *104*(3), 303-308.

Li, Z., McCracken, V., & Connolly, J. (2016). *An Evaluation of Factors Influencing Consumer Purchase Decisions of Cut Flowers: A Study of Washington Consumers*.

Long, M. M., & Schiffman, L. G. (2000). Consumption Values And Relationships: Segmenting The Market For Frequency Programs. *Journal of Consumer Marketıng*, *17*(3), 214-232. https://doi.org/https://doi.org/10.1108/07363760010329201

Manzoor, R., Shahid, S. A., & Baloch, M.-U.-H. (2001). Economics of floriculture in Pakistan: A case study of Lahore market. *Pakistan Economic and Social Review*, *39*(2), 87-102.

Matsuo, E. (2008). Humanity in horticulture: Healing and pleasure. Proceedings of the VIII International People-Plant Symposium on Exploring Therapeutic Powers of Flowers, Greenery and Nature,

Ongy, E. E., Bulayog, E., Bales, M., Gravoso, R., & Cagasan, E. (2018). Market Potential of Cut Flowers Produced in the Marginal Upland Communities in Leyte. *Journal of Educational and Human Resource Development*, *6*, 12-23.

Oppenheim, P., & Fly, T. (2000). A multinomial logit model of floral choice. Proceedings of the XXV International Horticultural Congress, Part 14: Horticultural Economics at Micro and Macro Level, International Trade and Marketing, International Cooperative Programs,

Relations between Research, Development, Extension and Education, Brussels.

Palma, M., & Ward, R. (2010). Measuring demand factors influencing market penetration and buying frequency for flowers in the US. *International Food and Agribusiness Management Review*, *13*(1), 65-82.

Robertson, J., & Chatfield, L. (1982). Fresh flower merchandising in loose bunches. *HortScience*, *17*, 593-595.

Rombach, M., Widmar, N., Byrd, E., & Bitsch, V. (2018a). Understanding preferences of German flower consumers: the desire for sustained beauty. *International Journal of Retail & Distribution Management*, *46*(6), 560-576.

Rombach, M., Widmar, N. O., Byrd, E., & Bitsch, V. (2018b). Do all roses smell equally sweet? Willingness to pay for flower attributes in specialized retail settings by German consumers. *Journal of Retailing and Consumer Services*, *40*, 91-99.

Schiffman, L., & Kanuk, L. (2009). *Consumer Behavior*. Prentice-Hall.

Sheth, J. N., Newman, B. I., & Gross, B. L. (1991). Why We Buy What We Buy: A Theory Of Consumption Values. *Journal of Business Research*, *22*, 159-170.

Sheth, J. N., Newman, B. I., & Gross, B. L. (1991b). *Consumption values and market choices: Theory and application*. South-Western Publishing Co.

Sweeney, J., & Soutar, G. (2001). Consumer perceived value: The development of a multiple item scale *Journal of Retailing*, *77*(2), 203-220.

Wang, H., Yang, Y., Li, M., Liu, J., & Jin, W. (2017). Residents' preferences for roses, features of rose plantings and the relations between them in built-up areas of Beijing, China. *Urban Forestry & Urban Greening*, *27*, 1-8.

Xiao, G., & Kim, J. (2009). The Investigation of Chinese Consumer Values, Consumption Values, Life Satisfaction, and Consumption Behaviors. *Psychology & Marketing*, *26*(7), 610-624.

Ziegler, C. (2004). *Favored Flowers Culture and Markets in a Global Commodity Chain* (Publication Number 3119689) New School University]. USA.