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# Consumer Perceptions of Product and Service Quality Attributes in Six U.S. States<sup>1</sup>

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## Abstract

Of seven dimensions contributing to garden center quality, customers ranked plant quality as the most important dimension (30%) and responsiveness and assurance as half as important (15%); the other dimensions (tangibles, reliability, empathy, quality of non-plant products) were slightly less important (10%). Plant health and condition (32%) was the most important plant or product characteristic, followed by price (22%) and assortment and variety (21%). Large gaps between customer expectations and perceptions existed for 'clearly marking plant price' (0.9), 'willingness to offer guarantees' (0.8), 'plant health' and 'name labeling' (0.7). Service quality gaps were reported for the tangibles dimension in the range of 0 to -0.29 and in the other four dimensions (reliability, empathy, responsiveness and assurance) in the range of -0.30 to -0.59. More frequent purchasers (Buyer 3—people who made more than 10 purchases from surveyed outlets) purchased over two-thirds of their plants from the survey outlet and had higher reliability perceptions as compared to less frequent purchasers (Buyers 1 and 2). When respondents were categorized by their expenditure at the survey outlet, those with lower expenditures (\$1–50) had lower perceptions in all five service quality dimensions. Traditional retail customers responded with higher perceptions in all five service quality dimensions than mass merchandiser customers.

**Index words:** survey, customer, garden center, service.

## Significance to the Nursery Industry

The addition of mass merchandisers to the green goods market place and the expansion of large independent garden centers has resulted in a highly competitive market for landscape plants and related products. Strategies that could potentially help businesses achieve a competitive advantage include delivering high quality customer service, providing high quality merchandise and offering a large variety of merchandise selections. Assessing the product and service quality of a retail outlet can be crucial to an effective marketing strategy. Discovering which service quality dimensions are important to customers and how current customers perceive the level of product and service quality can indicate to retailer managers areas that need improvement and strengths on which the retailer could capitalize. This research provides retailers with information to help them understand how consumers perceive and evaluate a variety of garden centers in six different states. While similarities and overall conclusions exist, this research also shows the variability between individual garden centers, indicating a need for each garden center to conduct its own customer service research to pinpoint individual strengths and weaknesses. The SERVQUAL instrument can also serve as a means to produce benchmark

figures, against which a business measures the effectiveness of changes made. The instrument is also simple enough to administer and analyze that business managers should be encouraged to consider its usefulness in evaluating their customers perceptions and expectations.

## Introduction

Customer service is the provision of courtesy and or kindness extended in the process of delivering a product. It is critical for repeat business, to build customer loyalty. Companies that understand the lifetime value of a customer place significant emphasis on excellent customer service. It is much easier to retain current customers than prospect for new customers (2). Yet somehow, businesses fail to keep their customers. When asked why customers stopped purchasing from a store, the reason provided by the greatest number of respondents (68 %) was 'they were treated poorly by a salesperson or employee' (21). Whiteley (26) reported that customers are five times more likely to switch vendors due to perceived service problems than for price or product quality concerns. Customers in an Oklahoma survey cited unfriendly help and lack of prompt service as the most common complaints related to service (8). Service quality delivered by employees is a key to business success.

Plant quality and selection consistently rank as the most important reasons for selecting a retail outlet (9, 11, 12, 15, 18, 22, 24). A focus group study conducted by Day in 1994 indicated that perceived quality of plants is very important and that quality was equated with 'health' (6). Trained professional sales staff often was selected as a third most important reason for retail outlet selection (11, 12, 18, 24).

A focus group study (18) indicated that a majority of potential customers expect independent garden centers to have better quality plant material than mass merchandisers because garden center personnel were better trained to care for the plants. The focus group indicated that customers view garden centers as 'specialty stores' and expect a larger selection than mass merchandisers. Customers generally expect plant prices to be higher at garden centers than at chain stores.

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Product sourcing has enabled many retailers to obtain the high product quality desired by most customers. This leaves service quality as an important differentiation opportunity.

A popular method for assessing the quality of service is a survey questionnaire called SERVQUAL (28). The SERVQUAL questionnaire consists of 22 pairs of questions, half of each pair measures expectations and half measures perceptions. Questions are asked using a five-point Likert scale where 1 = 'strongly disagree' and 5 = 'strongly agree.' Expectations are defined as what the customer would expect from the 'ideal' outlet. Perceptions are defined as what the customer receives at his or her current chosen shopping outlet. The level of service quality delivered is then defined as the perceptions of the customer minus the expectations of the customer. If the service quality is negative, Zeithaml *et al.* describes this as a service quality gap. A positive service quality gap means the retailer is exceeding the customer's expectations.

The SERVQUAL instrument was developed to include five dimensions of service quality (28). Each of the original five dimensions was defined as one component of the complex concept of service quality from factor analysis of dozens of survey questions. The term dimension is also used to refer to components of product quality: a) tangibles dimension—the appearance of physical facilities, equipment, personnel, and communication materials (comprised of four questions); b) reliability dimension—retailer's ability to perform the promised service dependably and accurately (comprised of 5 questions); c) responsiveness dimension—willingness to help customers and provide prompt service (comprised of 4 questions); d) assurance dimension—knowledge and courtesy of employees and their ability to convey trust and confidence (4 questions); e) empathy dimension—caring, individualized attention the firm provides its customers (5 questions).

SERVQUAL was designed to be usable across a wide variety of industries. The authors developed a basic skeleton to address the five dimensions of service quality. Other researchers were then encouraged to add or adapt sections relevant to the industry being evaluated.

The SERVQUAL methodology has been used extensively in other industries (7, 13, 17, 23, 27), most frequently health care (1, 5, 16, 20, 25). Becker adapted the SERVQUAL methodology to identify service quality gaps in traditional and non-traditional florists in Texas (3). He found differences in perceptions and expectations on several service quality dimensions and differences between customers from both retail outlets, with traditional retail florists having more narrow service quality gaps than non-traditional retailers. Hudson *et al.* (10) found that garden centers had a competitive advantage as compared to mass merchandisers with smaller, less negative service quality gaps.

In this study, expectations and perceptions of customers at 14 garden center outlets (11 traditional garden centers and 3 mass merchandisers) in six states were compared. The objectives were:

1. To evaluate the relative importance of seven dimensions that contribute to the quality of an individual garden center.
2. To analyze characteristics of plants and products as perceived by garden center customers.
3. To analyze the components of service quality as perceived by garden center customers and to evaluate the ability of garden centers to meet customer ex-

pectations of service quality. To assess the differences between individual outlets.

4. To determine whether purchasing frequency affected service and product quality expectations and perceptions.
5. To evaluate the differences in service quality expectations, perceptions and gaps between traditional garden centers (TR) and mass merchandisers (MM).

## Materials and Methods

For this project, we used the modified SERVQUAL instrument developed by Hudson *et al.* (9), who added eight product specific questions to the basic 22-question SERVQUAL instrument. These eight questions were designed to measure product quality expectations and perceptions for the retail horticulture industry. They also asked participants to allocate 100 points among the five service quality dimensions (defined by Zeithaml *et al.* (28)) and two product quality dimensions (added by Hudson *et al.*). Specifically, these seven dimensions were described as (a) appearance of displays, buildings, personnel, and communications materials [tangibles]; (b) ability to perform the promised service dependably and accurately [reliability]; (c) willingness to help customers and provide prompt service [responsiveness]; (d) knowledge and courtesy of personnel and their ability to convey trust and confidence [assurance]; (e) caring individualized attention provided to customers [empathy]; (f) quality of their plants; (g) the quality of their other products (excluding live plants).

To dissect product quality, Hudson *et al.* created five product quality questions (9). Consumers were asked to allocate 100 points among these five product quality questions: (a) plant health; (b) price of nursery plants; (c) assortment and variety of nursery plants; (d) labeling of nursery plants with names and price; and (e) ability of employees to custom-design landscape plans for participants.

In order to make comparisons by the volume of purchases, participants were asked to report, (1) how many times they purchased items from any garden center and their average spending, (2) how many times they had purchased items from the particular garden center where the survey was obtained and their average spending, and (3) the number of hours spent in and the size of their garden. Demographic questions included year of birth, gender, income level, and family status.

Researchers in six states (AL, DE, KY, NC, TN and TX) contacted local garden centers to schedule survey distribution. Surveys were distributed at 14 garden centers on Saturdays in May 1997. Shoppers in the retail outlets were approached by a university student and offered a survey form with a business-reply envelope. Surveys were returned to Alabama where they were checked for usability and completeness. A total of 680 useful surveys were returned for data analysis using PC-SAS 6.08. Approximately 500 surveys were distributed per site resulting in an average 10% return rate.

Respondents were divided into two groups based upon the store from which they received the survey form. Traditional retail (TR) customers obtained a form from free-standing retailers who primarily sold garden-related products (11 outlets). Mass-merchandise (MM) customers had purchased plants and/or related products and received the survey form from retailers whose primary product line was not horticultural (3 outlets). Respondents were divided into three groups

**Table 1. Ranking of individual garden centers in descending order based on the number of points assigned to each of seven garden center service quality factors. (Only factors with significant differences between individual garden centers are reported.)**

Appearance of facility	Plant quality	Product quality
4	14	6
10	2	12
6	8	9
12	3	3
3	11	5
5	13	11*
13	1	4*
11	7	2*
9	4	10*
1*	10*	1*
2*	5*	7*
7*	6*	8*
8*	9*	13*
14*	12*	14**

\*Garden centers with points significantly different from the highest-ranking garden center's point allocation in that category based on Least Square Means at the 5% level.

\*\*Garden centers with points significantly lower than the point allocation at any garden center with out two stars.

based on the frequency of purchases; (a) 1–2 times per year, (b) 3–9 purchases per year, and (c) more than 10 purchases per year. Buyers were categorized based on total dollars spent in a particular garden center: a) \$1 to \$50, b) \$51 to \$100, c) \$101 to \$200, and d) more than \$200. Responses were analyzed based on purchasing frequency and purchasing volume.

## Results and Discussion

The median age of the survey respondent was 48 years old with a range of 23 to 93 years and the median income was approximately \$45,000, with a range of over \$75,000. Respondents on average lived in a household that contained 2.5 people (including themselves). Of the respondents, 75% were female and 25% were male, 65% were college graduates and most (80%) were married. Of the married respondents, approximately half had dependents. While overall about 75 percent of the shoppers were female, two garden centers had a significantly different ratio of male to female customers (approximately 50/50).

### Objective 1: Evaluate the relative importance of seven dimensions that contribute to the quality of an individual garden center.

When asked to allocate 100 points among seven dimensions that contribute to a garden center's quality, plant quality ranked as the most important dimension (30%). A garden center's willingness to help customers and provide prompt service (responsiveness) as well as the knowledge and courtesy of personnel and their ability to convey trust and confidence (assurance) were both about half as important to respondents (15%). The other dimensions, appearance of displays, buildings, personnel and communication materials (tangibles); ability to perform the promised service dependably and accurately; caring (reliability), individualized attention provided to customers (empathy), and the quality of other products (excluding live plants) were slightly less im-

portant (approximately 10%). Service quality dimensions account for 60% of the customer's perceived satisfaction and product quality dimensions account for 40%.

Customers of individual garden centers varied significantly in the importance they placed on appearance of facilities, plant quality and product quality (Table 1). It was interesting to note that one garden center which consumers ranked highest in plant quality was also ranked lowest on the importance placed on appearance of facilities and product quality.

### Objective 2: To analyze the characteristics of plants and products, as perceived by garden center customers.

When asked to allocate 100 points among five product questions, respondents placed the highest priority on plant health and condition (32%) followed by price (22%) and assortment and variety (21%). Properly labeled plants including name and price was fourth in importance (17%) and the ability of employees to custom-design landscape plans was least important (8%). For most consumers, the landscape capability of these garden centers was unimportant.

Individual garden centers differed significantly in the importance their customers placed on price, labeling and ability to custom-design (Table 2).

This survey supports the conclusion of many other surveys that plant quality (32%) (in this case defined as plant health) is more important to customers than plant price (22%) (8, 17, 21, 23).

In an effort to better understand how well garden centers meet customer's plant quality expectations we used the eight additional plant/product oriented questions developed by Hudson *et al.* Respondents were asked to rate their expectations and perceptions of how the garden center at which they were surveyed performed in the area of plant/product quality for these eight questions. The ratings were made on a five-point Likert scale and resulting gaps are summarized in Table 3. Customers had the highest expectations for plant health, variety and name labeling (4.8), followed closely by guarantees, clearly marked price and easy and convenient buying (4.7). They had a numerically lower expectation for

**Table 2. Ranking of individual garden centers in descending order based on the number of points assigned to each of five features pertaining to garden centers and the products they offer. (Only factors with significant differences between individual garden centers are reported.)**

Price	Labeling	Ability to custom-design
14	12	4
9	5	8
2	9	3
8	6	11*
7	4	10*
6	7	13*
5	11	1*
11	2	7*
12	13*	12*
13*	8*	6*
3*	8*	5*
1*	10*	2*
10*	14*	9*
4*	3*	14*

\*Garden centers with points significantly different from the highest-ranking garden center's point allocation in that category based on Least Square Means at the 5% level.

**Table 3. Mean expectations, perceptions and gaps in plant quality perceived by survey respondents from 14 garden centers in six U.S. market areas. (Likert scale of 1–5.)**

Plant quality question	Expectation	Perception	Gap
sells only the healthiest plants	4.8	4.1	0.7
guarantees their plants	4.7	3.9	0.8
stocks many different plants	4.8	4.4	0.4
carries a wide variety of plants	4.8	4.4	0.4
clearly labels all of their plant with the correct name	4.8	4.1	0.7
clearly marks the prices of plants	4.7	3.8	0.9
will custom-design a landscape to meet customers' specifications	4.1	3.5	0.6
makes buying plants easy and convenient	4.7	4.3	0.4

**Table 4. Ranking of individual garden centers in descending order based on the perception score for each of the five service quality and one product quality dimension(s).**

Tangibles	Reliability	Responsiveness	Empathy	Assurance	Product	Overall
10	3	13	3	7	13	3
3	7	10	4	4	3	10
13*	10	7	7	3	10	7
6*	9	3	2	13	4	13
7*	1	4	13	9	7	9
4*	13	9	10	10	2	4
1*	2	1	9	2	9	1
9*	4	2	1	1	11	2
2*	6*	8	6	8	1	8
8*	8*	11	8*	11*	8	6*
11*	11*	6*	11*	6*	6	11*
5*	14*	14*	14*	14*	14	14**
12*	5*	5**	5**	5**	5	5**
14**	12*	12**	12**	12**	12**	12**

\*Garden centers with perception scores significantly different from the highest-ranking garden center's perception score in that category based on Least Square Means at the 5% level.

\*\*Garden centers with perception scores significantly lower than the perception scores at any garden center with out two stars.

custom-designed landscapes provided at the garden center (4.1). The largest gap (0.9) and therefore weakest performance in meeting customer expectations was for clearly marking the price of plants. The respondents also noted a large gap (0.8) in the garden center's willingness to guarantee plants and in plant health and name labeling (0.7). While a fairly large gap existed in the garden centers ability to custom-design landscapes (0.6), that factor was less important to respondents. The smallest gaps existed for plant variety and easy and convenient shopping (0.4).

**Objective 3: To analyze the components of service quality as perceived by garden center customers and to evaluate the ability of garden centers to meet customer expectations of service quality. To assess the differences between individual outlets.**

In this study, customers' expectations of service quality expectations were similar among outlets (Table 4). The only significant difference in expectations among traditional retailers was in their expectation of tangible characteristics (i.e., the appearance of physical facilities, equipment, personnel, and communication materials). One traditional retailer's respondents (the same retailer whose customers placed little importance on appearance of facilities when asked to rate seven garden center features) had significantly lower tangible expectations than all other retail outlets. This garden center probably places little emphasis on facilities and that is clear to the customers. Unlike expectations, service quality perceptions were significantly different in all service quality

components among both traditional retailers and mass merchandisers. Since expectations were similar and perceptions were different, higher service quality gaps (more negative) are due to lower perception's scores. When a gap is reported as a negative number it indicates a perception that is lower than the expectation. All service quality gaps at the garden centers surveyed were negative (except tangible gaps in three cases) (Table 6). Since gaps are a result of differences in perceptions, the perception data will be presented.

Survey respondents rated some garden centers consistently higher than others in service quality perceptions (Table 4). When we study the service quality dimensions individually, we find that garden centers had lower service quality gaps in the tangible dimension (Table 5). Lower gaps indicate more success in meeting expectations. Most garden centers (8 out

**Table 5. Service quality expectations, perceptions and gaps in the five service quality and one product quality dimension(s). (Likert scale of 1–5.)**

Dimension	Expectations	Perceptions	Gap
Tangibles	4.1	3.9	–0.2
Reliability	4.7	4.1	–0.6
Responsiveness	4.7	4.0	–0.7
Assurance	4.6	4.0	–0.6
Empathy	4.6	4.0	–0.6
Product	4.7	4.0	–0.7
Overall	4.6	4.0	–0.6

**Table 6.** The number of garden centers with gap scores in the following ranges in each of the five service quality and one product quality dimension(s) (n = 14).

Dimension	> 0	0 to -0.29	-0.30 to -0.59	-0.60 to -1.00	< -1.00
Tangibles	3	8	1	2	0
Reliability	0	0	8	3	3
Responsiveness	0	1	7	3	3
Assurance	0	4	5	3	2
Empathy	0	3	8	1	2
Product	0	1	9	3	1
Overall	0	4	7	2	2

of 14) had tangible gaps in the range of 0 to -0.29. This represents anywhere from a 0 to a 6 percent difference between expectations and perceptions. Tangible expectations were lower on the average as compared to other service quality expectations, but perceptions were consistent with other service quality dimensions, resulting in smaller gaps. In other words, garden centers are not providing better tangible service, customers just did not expect as much in this area. For the other service quality dimensions, most garden centers had gap scores that ranged from -0.30 to -0.59 (Table 6). This represented from a 6 to a 12 percent difference between expectations and perceptions. Individual garden centers had specific service quality dimensions in which they scored higher or lower but in general the performance of garden centers in the other five service quality and one product dimension(s) was similar. We cannot conclude that garden centers in general should pay more attention to one area of service quality. In fact, from the customers' perspective, there is room for improvement in all areas of service quality.

**Objective 4: To determine whether purchasing frequency and dollars spent affected service and product quality expectations and perceptions.**

In this study the average respondent made 11 garden plant and supply purchases during the survey year. About half (5.7) of those purchases were from the surveyed store. That result is consistent with early research in which Padgett (1965) found that many customers (72%) purchase plant material and supplies from more than one firm.

A review of floral marketing literature identified that consumers who purchase more of a product have been considered to be more involved with that product than consumers who purchase less of it (4). So, we looked at purchase frequency as a method of differentiating buyers. Buyers were divided into three categories, as defined in materials and methods. There were no differences in the demographic characteristics, the value placed on customer service and plant quality factors or in expectations and perceptions of service based on the categorization. There were significant differences between buyers in purchasing frequency. The more frequently a customer purchased plants, the more money they spent at that particular outlet and in general on plants (Table 7). More frequent purchasers had greater store loyalty to the outlet at which they were surveyed. 'Buyer 1' shoppers made about one-third of their plant purchases from the survey outlet. 'Buyer 2' purchased about half of their plant purchases from the survey outlet. 'Buyer 3' purchased over two-thirds of their plant purchases from the survey outlet. Service and product quality expectations were similar regardless of purchasing frequency. Very frequent purchasers ('Buyer 3') had

**Table 7.** Significant differences in survey responses based on the frequency of purchases at a particular outlet.

	Buyer 1 (1-2 purchases)	Buyer 2 (3-10 purchases)	Buyer 3 (> 10 purchases)
\$ spent	\$327	\$495	\$854
\$ spent at outlet	\$92	\$207	\$578

higher reliability perceptions as compared to less frequent purchasers ('Buyer 1' and 'Buyer 2') (Table 8). Less frequent purchasers ('Buyer 1') had significantly lower perceptions of the tangible dimension at their survey outlets.

When customers were categorized based on total dollars spent and, with purchasing frequency, there were no significant differences between categories. However, there were several significant differences when respondents were categorized based on their expenditures at the survey outlet. Survey respondents were divided into four categories, based on how much they spent in this particular garden center. This distribution allocated about 25 percent of the sample to each category, with 194, 153, 134, and 150 respondents in each category, respectively. Tangibles, or the appearance of the physical facilities was less important to consumers who spent more at the garden center. Assurance, or the ability of employees to convey knowledge and trust, was more important on average to consumers who spent more at the garden center. Non-plant product importance decreased as spending at the garden center increased. Labeling of plants, with both name and price, decreased as well (Table 9). These results seem intuitive since customers who purchase more are more

**Table 8.** Differences in the five service quality and one product quality perception dimension(s) based on frequency of purchases at a particular outlet. (Likert scale of 1-5.)

Dimension	Buyer 1 (1-2 purchases)	Buyer 2 (3-10 purchases)	Buyer 3 (> 10 purchases)
Tangibles	3.8*	4.0	4.1
Reliability	4.0*	4.1*	4.4*
Responsiveness	4.0	4.0	4.3
Assurance	4.0	4.0	4.1
Empathy	4.0	4.1	4.2
Product	4.0	4.0	4.2
Overall	4.0	4.1	4.2

\*Indicates a value significantly different from others in that row based on Least Square Means at the 5% level.

**Table 9.** Comparison of the importance of four garden center characteristics for consumer groups divided by the dollar volume spent in the garden center. Values represent the amount of points assigned to each characteristic from a total of 100 possible points that were assigned to seven characteristics.

Importance variable	Consumer categories based on total yearly expenditure at a particular garden center			
	\$1 to \$50	\$51 to \$100	\$101 to \$200	More than \$200
Importance of tangibles	9.6	9.8	9.1	7.7
Importance of assurance	13.6	16.4	14.9	16.6
Importance of non-plant product quality	11.8	10.2	9.6	9.4
Importance of labeling plants with name and price	17.7	18.9	16.4	15.6

**Table 10.** Comparison of service quality perceptions for consumer groups divided by the dollar volume spent in the garden center.

Dimension	Consumer categories based on total yearly expenditure at a particular garden center			
	\$1 to \$50	\$51 to \$100	\$101 to \$200	More than \$200
Tangibles	3.7	4.0	4.1	3.9
Responsiveness	3.7	4.1	4.2	4.2
Reliability	3.8	4.1	4.2	4.5
Assurance	3.8	4.1	4.2	4.2
Empathy	3.8	4.0	4.2	4.3
Service quality	3.8	4.1	4.2	4.2

likely to be purchasing plants, and therefore not concerned about non-plant product quality. They are also more likely to be helped by a salesperson, and therefore labeling is less critical for these consumers. Big spenders are also more interested in services than in the physical facility, as evidenced by the lower point values assigned to the tangibles dimension.

The most significant differences occurred in consumers' perceptions of all five service quality dimensions (Table 10). In nearly all cases, perception scores increased as the amount spent in the garden center increased. Consumers who spent more in the particular garden center felt they received better responsiveness, reliability, assurance, tangibles, and empathy when compared to consumers who spent less there. Expectations however, were similarly high regardless of the volume spent.

**Objective 5: To evaluate the differences in service quality expectations, perceptions and gaps between traditional garden centers (TR) and mass merchandisers (MM).**

Researchers in three of the states surveyed customers of both TR and MM. We used their responses, 219 MM and

425 TR customer responses, from three MM stores and five TR stores to we compare expectations, perceptions, and gap scores of TR and MM customers.

Comparison of mean expectations scores from TR and MM garden center customers, revealed four differences: reliability, empathy, assurance, and overall service quality expectations (Table 11). In all instances, TR customers had higher mean expectation scores than MM garden center customers. Expectations were similarly high for tangibles, responsiveness, and product quality dimensions.

When we examined customer perceptions, we found differences on each factor evaluated. Consistently, TR customers had higher mean perception scores on all factors when compared to MM customers. The differences ranged from 8% (tangibles) to 20% (empathy). This meant that in every case, customer perceptions of what the TR retailer was delivering to customers in terms of product and service was better than what the MM garden center customers felt they were receiving.

We calculated gap scores for each respondent by subtracting perceptions from expectations on each factor. When we compared TR and MM garden center customers, mean gap

**Table 11.** Comparisons of mean expectations, perceptions, and gaps of service and product quality for survey participants at mass merchandisers and traditional retailers in three U.S. market areas.

Dimensions	Expectations			Perceptions			Gaps		
	MM	TR	Sig.	MM	TR	Sig.	MM	TR	Sig.
Tangibles	4.1	4.1	NS	3.7	4.0	*	-0.4	-0.1	*
Reliability	4.6	4.8	*	3.7	4.2	*	-0.9	-0.5	*
Responsiveness	4.6	4.7	NS	3.6	4.3	*	-1.1	-0.5	*
Assurance	4.5	4.7	*	3.7	4.3	*	-1.1	-0.4	*
Empathy	4.6	4.7	*	3.5	4.2	*	-1.0	-0.4	*
Product	4.7	4.7	NS	3.6	4.2	*	-1.2	-0.5	*
Overall	4.5	4.6	0	3.7	4.2	*	-0.9	-0.4	*

\*Significant at 5% using Wilcoxon Rank-Sum test.

scores were consistently negative for both retail outlets. For responsiveness, assurance, empathy, and product quality, the gap was 1.0 or more, or 20% or more, on the scale. In these cases, the retailers fell far short of customer expectations. Mean gap scores for TR were  $-0.50$  or less, or 10% or less, on the scale. While both retailers fell short of customer expectations, TR were better at meeting the customers' expectations than were MM outlets. This was consistent with Hudson *et al.*'s findings (1997).

We found one difference in the demographic characteristics of the two groups. TR customers were an average age of two years older (49) than MM customers (47). There was one significant difference between TR and MM in the importance placed on each of the five service quality dimensions (by assigning 100 points across five dimensions). MM customers placed a greater importance on responsiveness (13 points) compared to 10 points assigned by TR. TR felt this dimension of service quality was more important when compared to the average importance placed on it by MM customers.

None of the customers placed a low emphasis on price or product quality. They were similarly high. However, TR customers (22) valued the assortment and variety of plants more than did MM (20) by assigning two more points on the average. MM customers placed a higher importance on the labeling of nursery plants with price and name (19) than did TR customers (17).

We compared purchase number and amount for both groups. The total number of purchases from any outlet and the store from which the received the survey were similar, as was the average spent in total (Table 12). However, the mean amount spent per purchase in the store and in total was not. TR customers spent 42% more per transaction in total and 43% more per transaction at the surveyed retailer than MM customers (Table 12).

Garden centers should focus on stocking and maintaining only the healthiest plants. Respondents placed the highest priority on plant health and condition and a significant gap currently occurs in the ability of participating garden centers to meet customer expectations. Another way to address plant health is to offer a guarantee in case the plant does not survive. Garden centers could better meet customer expectations by providing plant guarantees. Plant assortment and variety was also fairly important to respondents, but garden centers are doing a better job of meeting customer expectations in this category. An additional area for improvement is plant labeling, especially with the price. For inexperienced customers or ones who spend little, this factor is important.

Garden centers differ in their customers' perceptions of their quality of service. There were almost no differences in

the service and product quality expectations of customers surveyed at different garden centers. People expect a high level of service quality when they enter a retailer, regardless of their characteristics or the retailers. But there were significant differences in perceptions of specific outlet performance in all service and product quality dimensions. There appears to be a fairly consistent expectation for service and product quality among customers throughout the county. But there are differences among outlets' perceived abilities to meet these expectations. Individual outlets should conduct this type of research to determine how their customers perceive their effectiveness in providing both service and product quality. We cannot conclude that garden centers in general should pay more attention to one area of service quality. In fact, there is room for improvement in all areas of service quality.

Customers throughout the country vary in the level of importance they place on both service and product factors. There were significant differences in the importance customers placed on appearance of the facility and plant and product quality. Generally, plant quality expectations are high while facility expectations are lower. There were also significant differences in the importance of price, labeling and the ability to provide custom designs. These differences in the importance of specific service and quality factors are probably affected by the marketing strategy of individual garden centers. If successful garden centers understand their market, they will establish policies that meet the needs of that particular market and expect that needs may vary between markets. Garden centers with customers who placed a low importance on price tended to receive higher rankings in their perceived service and product quality. It is likely that those garden centers are targeting less price-sensitive customers by providing higher levels of service.

Garden centers are doing a good job of providing service to customers who spend significant amounts of money or make frequent purchases yearly in their establishments. But consumers who spend less money yearly do not have lower expectations for service, so one strategy to enhance customer relations would be to provide service equally to all customers, not just the frequent buyers with whom the sales people are familiar. This strategy might turn the less frequent buyer in to a more frequent buyer.

Results from this study were consistent with Hudson *et al.* (10), thus providing validation on a larger scale for the differences found between TR and MM and the usefulness of surveying in an accepted test market. Customers of both TR and MM outlets had similarly high expectations, except for reliability, responsiveness and assurance. However, TR had smaller, less negative service quality gaps. This should indicate a competitive advantage for these retailers. While there was no significant difference in the importance of plant price between TR and MM customers, there were differences between individual garden centers. Since none of the MM surveyed was among the group where customers placed a lower emphasis on price, we can assume that price was more important to MM customers than to some TR customers. MM customers have some lower service quality expectations and lower perceptions in all dimensions; therefore they appear to be willing to trade service for price. MM fall short of meeting their customers' expectations. They could adopt policies that allow them to improve service without impacting price.

Finally, these results provide a benchmark for service quality perceptions and expectations. These may be useful to other

**Table 12. TR and MM purchases of garden plants and supplies of survey participants in three U.S. market areas. (Significance is based on Least Square Means at the 5% level.)**

Purchases	MM	TR	Significance
Total number	11.4	10.8	NS
Total dollars	\$358	\$479	NS
\$/transaction	\$37.55	\$53.40	0
Store number	5.5	6.0	NS
Store dollars	\$141.05	\$242.75	*
\$/store transaction	\$35.40	\$50.62	*



garden center retailers as a means of comparison. We suggest all garden center retailers engage in an evaluation of product and service quality periodically. The SERVQUAL instrument proved useful and relatively simple to use. Periodic assessment can be a way for the retailer to evaluate the progress or impact of a new training program or TQM activities.

If retailers would like to receive a copy of the survey instrument, they should contact Bridget Behe at behe@msu.edu or Susan Barton at sbarton@udel.edu or adapt their own from the original SERVQUAL instrument (28).

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