

# Development of SERVQUAL Model for Enhancing the Service Quality by Examining Retail Output Service Gaps

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## **Abstract**

In the present scenario, retail sector in India is mounting in a swift manner particularly organized retail is mounting at an awesome speed. Organized retailing has many advantages as compared to the unorganized retailing like better utilization of manpower, better service and reduction in wastage of products. The organized retailing is facing a heavy competition from the unorganized sectors as well as from new competitors to the organized sector, especially from multinationals with the revision of foreign direct investment policy. An organized sector may survive the stiff competition by increasing its competitive advantage such as to improve the quality of service levels of the organization. Focusing the consumer may be one area to understand the level of quality of services. The aim of this research is to enhance the service quality in retail outlet of a perishable product based on a Chennai corporation in Tamilnadu. A modified survey instrument was developed using SERVQUAL model consisting fourteen perishable items to find out the service gaps. Based on 144 responses, results reported positive values for the gap analysis in all the service attributes except one. Importance-performance matrix was used to identify the potential service attributes for improvement in service quality. From the results it was found that, a cronbachs alpha value of 0.924 and 0.946 were obtained which greater than the recommended value of 0.70 and therefore exhibiting good internal consistency of the constructs.

Keywords: Perishable Product, Gap Analysis, Service Quality, SERVQUAL Model, Minitab 16.

## **INTRODUCTION**

According to the food corporation of India report the Indian retail market accounts for around 14 to 15% of gross domestic product for the different

country's which is estimated to grow at a compound annual growth rate of 6%. India's retailing industry is essentially owner manned small shops which accounts for more than 90% which are classified as unorganized retailing. Unorganized retailing refers to the traditional forms of retailing like owner-operated general stores, convenience stores, pan shops, hand cart and street vendors etc. The growth of unorganized retail sector is around 6%. On the other hand organized retail contributes nearly 8percent of the total retail sector in India. Organized retailing refers to the trading activities undertaken by licensed retailers. This includes corporate backed hypermarkets and retail chains and also privately owned large retail chains. It has been estimated that the organized retailing would contribute 20% of the total retail sector in India against 8% at present [1-2]. Organized retailing in India is rapidly growing in the recent years especially in the urban areas. Rising income, increased number of working women population, growing health and quality consciousness, changing consumer preferences, attitudinal shifts, and nuclearization are some of the driving factors for the growth of organized retail sector [3-4]. The main objectives of the study are to determine the service expectation for services by using consumer research studies such as to assess the gap between the expectation and perception.

## **LITERATURE SURVEY**

A SERVQUAL scale was used to evaluate the quality of the services in street markets and section of fruits and vegetables in supermarkets in the city of Brazil and pointed out the strength and weakness of these marketing channels [5-6]. The SERVQUAL scale was used and measured the consumers' expectation levels of service quality in food retail sector against their perceptions levels of the service quality at Pick n Pay supermarket store in South Africa and determined the gap between consumers' expectations and their perceptions of the service quality [7-8]. In a research study it was suggested that a company can have a competitive advantage by focusing on the consumer thereby improving the service quality. Interaction between the company and the consumer is an important moment to nurture and improve the consumer relations [9-10]. In an another research it was pointed out that, since consumer satisfaction and focus are so critical to competitiveness of firms; any company interested in delivering quality service must begin with a clear understanding of its consumer. Gaps model of service quality provides a structured way of measuring the service quality of an organization. The consumer gap and the provider gap are the two broad categories of gaps model. The former concentrates in identifying the difference between consumer expectations and perception whereas the latter concentrates on identifying the gap that exists within the organization providing the service [11-13]. Some of the antecedents to measure the consumer experience for retail industry were internal factors controlled by the company like promotion, price, product, supply chain and location and the macro environment were identified [14-15]. It was suggested that, the social environment, self service technology, retail atmosphere, assortment, price, consumer experience in alternative channels, retail brand and

consumer experience as some of the antecedent to measure the consumer experience in retail sector [16].

Consumers do not perceive quality in a uni-dimensional way but rather judge the quality based on multiple factors relevant to the context. Five dimensions have been identified as the drivers of service quality that applies across variety of service context. A scale, named SERVQUAL has been developed to measure these dimensions [17]. A survey was conducted to understand the users' perception of academic library services quality in a university library in Malaysia. LibQUAL model, which is specific to library services, was used for gap analysis. A survey instrument was developed based on the model with 30 items to measure the service quality under various dimensions. Cronbach's alpha analysis was used to test the reliability of the constructs [18]. The use of Cronbach's alpha analysis to assess and improve the reliability of the variables of the summated scales, which are often used in survey instruments to probe underlying constructs that the researcher wants to measure. Cronbach's alpha determines the internal consistency or average correlation of items in a survey instrument to gauge its reliability was illustrated [19]. Similarly in another study Cronbach's alpha analysis was used to validate the nursing checklist for receiving patients in tertiary care hospital in Chandigarh, India [20]. Based on the above literature an attempt was made to develop a SERVQUAL model to improve the service quality in the retail shop.

## **METHODOLOGY**

The consumer requirement or the expectation for service was discovered by conducting a closed ended questionnaire based survey with the consumers of the retail outlet selling fruits and vegetables at different places of a corporation of Chennai. Convenient random sampling technique was adopted for conducting the survey. The service quality was measured under a broad category of responsiveness, reliability, tangibility, empathy, assurance and product related. A pilot survey was conducted prior to the main survey in order to validate the questionnaire. The pilot survey was followed by main survey, based on the outcomes of the pilot survey some changes were made in the questionnaire. The gaps in the service quality were measured based on the survey results and the various service attributes were prioritized for improvement. The performance – importance matrix was used to prioritize the service attributes which are to be concentrated in order to improve the service quality of the retail outlet.

## **QUESTIONNAIRE DESIGN**

The questions were categorized into three sections as follows. First section being the service attributes which adopted SERVQUAL scale of five point continuous scale, Second section captured the demographics of the consumers like age gender, educational qualification, annual income, marital status and occupation and finally the third section had general questions which aimed at understanding frequency of buying, word of mouth marketing, return rate of consumer, preference toward home delivery

and consumer pick-up options. There exist various approaches for consumer research studies, varying in objectives, cost, time and frequency. Table 1 summarizes some of the most common approaches for consumer research studies. Critical incidence studies, requirement researches, database consumer researches are some of the approaches whose objective is to identify consumer requirements as input for quantitative studies. Whereas relationship surveys and SERVQUAL surveys, lost consumer research are two approaches whose objective is to assess the gap between consumer expectation and perception.

Table 1. Service Industries- Consumer Research Program

<b>Sl. No.</b>	<b>Consumer Research Program</b>
1	Requirements research
2	Critical incident studies
3	Complaint solicitation
4	Relationship and SERVQUAL surveys
5	Trailer calls or post-transaction calls
6	Social media
7	Service expectation meetings and reviews
8	Process checkpoints
9	Market oriented ethnography
10	Mystery shopping
11	Consumer panels
12	Lost consumer research
13	Future expectations research
14	Database consumer research

Table 2 shows the comparison between various approaches especially on the basis of money, time and frequency. One of the characteristics of consumer research studies is that it should be a blend of qualitative as well as a quantitative study. Critical incident studies were selected to collect qualitative data from the consumers, which serve as an input for the quantitative studies. The cost of conducting this test is low and also this type of study best suits the retail sector compared to the Requirement Researches. SERVQUAL survey was selected because it is quantitative in nature and time and cost requirements are comparatively low, with an added advantage it eliminates the practical difficulty of carrying out the lost consumer research.

Table 2. Consumer Research Program- Comparison Matrix

Research Type	Qualitative/ Quantitative	Information about Cost		
		Monetary	Time	Frequency
Critical Incident Studies	Qualitative	Low	Reasonable	Periodic
Requirements Research	Qualitative	Reasonable	Reasonable	Periodic
Database Consumer Research	Quantitative	High	High	Continuous
Link and SERVQUAL Surveys	Quantitative	Reasonable	Reasonable	Annual
Lost Consumer Research	Qualitative	Low	Low	Continuous

Critical Incident Studies: In Critical Incident Studies, various incidents leading to satisfaction and dissatisfaction of consumers were captured and it was then converted into service attributes to prepare questionnaire. In this study the following questions were asked to 15 consumers both female and male, falling in the age group of 20 to 50. Several responses from the consumers were captured and finally it was converted to a service attribute to be included in the questionnaire.

SERVQUAL Surveys: The original SERVQUAL scale is designed in the form of a survey containing twenty service attributes, grouped into the five quality dimensions. Consumers’ rate statements on the service attributes in terms of their expectations and perceptions. The level of service quality is determined by subtracting the average score obtained from the expectation section to that obtained from the perception section. The calculated difference between the expectations and perceptions ratings constitutes a quantified measure of service quality. The service gap was calculated using the equation, Gap = Expectation – Perception.

Table 3. Service Characteristics in the Questionnaire

Type	Code	Service Characteristics
Tangibles	A1	Store should have the state-of-the-art equipment
	A2	Store should be clean and employee must appear neat
	A3	Store should be air conditioned
	A4	Product descriptions and its prices should be clearly indicated
	A5	Clearly specified sales slips (bills) should be given
	A6	Store layout should enable consumer to move and find the goods easily
Reliability	B1	Store should provide the right service at the time they promise to do so
	B2	There should always be stocks of products desired by the consumer
Reaction	C1	Waiting time at cash counter should be short
Assurance	D1	Employees should be informative
	D2	Employees should be cordial and willing to help the consumers
Empathy	E1	Operating hours of the stores should be convenient to



		consumers
Product Related	F1	A broad variety of products and well-known brands should be available
	F3	Store should guarantee the quality of products and ensures its freshness

The SERVQUAL scale has been adopted in this study with some modification in the service attributes to suit the requirements of retail outlet under study. The modifications were made based on inputs from literatures, critical incident studies and brainstorming sessions with the retail outlet’s management. In addition to the five dimensions of quality another category namely product related were included in the section one of the questionnaires which measures the service quality related to the products. Section one of the final questionnaire consisted of fourteen service attribute. Consumers were asked to rate each service attribute in two categories, expectations/importance on five-point scale ranging from 5 of extremely important to 1 of not at all important and perceptions on five-point scale ranging from 5 of completely achieved to 1 of not at all achieved. The following Table 3 shows the various services attributes used in the questionnaire under six dimensions.

**SAMPLING TECHNIQUE**

The survey is conducted among a small group of consumers who are representatives of the whole population, hence to project the findings of this study to the entire population a minimum number of sample size has to be determined. The survey instrument measures the service attributes in a continuous scale. The minimum sample size for studies with continuous scales is calculated using the following equation.

$$\eta_0 = \frac{Z^2XS^2}{d^2}$$

Where,

- $\eta_0$  - Sample size according to Cochran’s formula
- Z - Value for selected alpha level of confidence interval in this case for 95% of Z=1.96
- s - Estimate of standard deviation in the population = 1.25
- d - Acceptable margin of error for mean being estimated = 0.25

With a 95% of confidence level, 0.05% of error and a standard deviation of 1.25, the minimum sample size were calculated to be 96 according to the Cochran’s formula. If this  $\eta_0$  is greater than 5percent of the population size then Cochran’s correction formula has to be used. But an approximate consumer base for the retail store under study was 2500. Estimating response rate is not an exact science. Hence based on the similar past researches a response rate of 65% was assumed. Thus the corrected minimum sample size adjusted for response rate becomes  $\eta_2 = 148$ .

**RESULTS AND DISCUSSION**

Pilot Survey: The questionnaire developed to conduct the pilot survey consisted of 14 service attributes to be evaluated. The internal consistency of the service attributes were measured by calculating the Cronbach's alpha value for each category namely expectation and perception. Cronbach's alpha value ranges from 0 to 1. In general an alpha value of more than 0.7 means that there exists internal consistency between the services attributes. Minitab 16 was used to calculate the Cronbach's alpha value. For the expectation category the Cronbach's alpha value for 14 service attributes was 0.963, hence it shows that the service attributes are internally consistent and each attribute is measuring the same output, which is service quality in this study. However, correlation matrix and omitted item statistics suggests that Cronbach's alpha value may be further improved by eliminating the attribute C1, the service attribute has not contributed much to the test output. The reason behind this may be the interaction between consumer and the employees occur mainly at the cash counter, and there exist a specific service attribute to measure the performance at cash counter in the questionnaire, so that the responder may feel the attributes may be redundant in the questionnaire. Hence this attribute is eliminated from the questionnaire and found that the improved Cronbach's alpha value was 0.924.

For the perception category the Cronbach's alpha value for 14 service attributes was 0.934, hence it shows that the service attributes are internally consistent and each attribute is measuring the service quality. However, correlation matrix and omitted item statistics suggests that Cronbach's alpha value may be further improved by eliminating the attribute C1 and F1. The attribute F1 is not contributing to the objectives of the study. The reason behind this may be that consumers are unaware about the value added services. Hence the attributes C1 and F1 were removed from the questionnaire and Cronbach's alpha value was improved to 0.946 and hence, the final questionnaire for the main survey consisted of 14 service attributes in section one. Based on the inputs from the pilot survey, the annual income and educational qualification were made optional in section two of the questionnaire. In section three, two questions were added, one regarding the price of the products in the store and other regarding the reason for opting the particular store.

Main Survey: Basic demographic data was gathered on responders who made a shopping in the store. Face-to-face interview was conducted with the consumers. The following are the summary of the data. Around 48.9% of the responders were female and remaining was male, which indicates that the study results are gender unbiased. Nearly 87.4% of the responders were below 45 years of age, which indicates the consumers buying in these stores are fairly young population. Around 36.7% of the responders were self-employed or employed in private sectors, 30% of the responders were students, 20% of the responders were home maker, and nearly 9% were government servants. Closely 63% of the responders were married and remaining is single. Certain questions were present in section three of

questionnaire to understand the buying frequency of consumers, reason for buying in these stores and to know their opinion regarding the price of the products in the stores. Close to 44% of the responders were buying fruits and vegetables once in a week, 38% of responders buy once in three days and nearly 10% of responders buy fruits and vegetables daily.

Nearly 72% of the responders feel that the price of the products in this store is worth for the quality they provide. Close to 64% of the responders decided to buy in these stores because all products are available in one roof and quality of the products offered is good. To figure out the return rate of the consumers, to ascertain whether the store enjoys word of mouth marketing, and to know their opinion regarding the home delivery and consumer pick-up option, certain questions were present in the section three of the questionnaire in a dichotomous scale such as yes or no, true or false, etc. From data analysis it has been observed that nearly 81% of the responders were regular consumers. More than 90% of the responders suggest these stores to their friends and family members, which clearly shows that the store enjoys word of mouth marketing.

More than 50% of the responders say they do not support either the home delivery or consumer pick-up options. The reason behind may be that since the products are perishable there may be a tendency among the consumers to feel the product before buying which may not be possible in home delivery or consumer pick-up option. It is to be noted that the above data are captured in dichotomous scale.

The above analysis is based on 144 responses which is the minimum sample size for a continuous scale, but for dichotomous scale the minimum sample size would be further more. Hence these results cannot be statistically validated, but it can be assumed that similar trend may be followed with slight modification in these results. A significance-sensitivity matrix was plotted which is shown in Figure1. Conclusions were drawn from the significance-sensitivity matrix in conjunction with the gaps between the expectation and perception to prioritize the service attributes. Results of the main survey are represented in Table 4.

The gap between the expectation and perception for each service attribute is shown. Significance-sensitivity matrix is the one which is split into four quadrants. The horizontal axis represents the perception from a low to high value. The vertical axis represents the importance from a low to high value. The expectation and performance scores are plotted in this graph. The graph is plotted from 1 to 5, since a five-point scale was used for survey. The graph is split at the point 3 because it is the median of the scale which represents the neutral response.



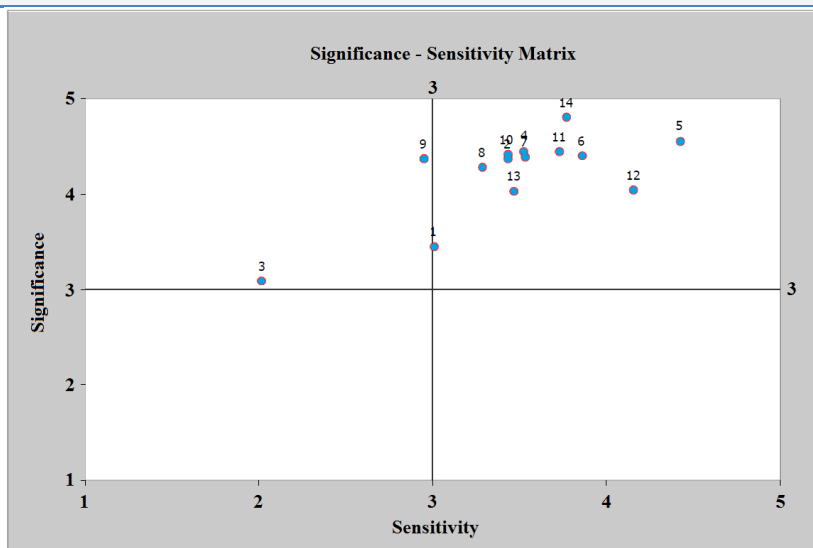


Figure 1. Significance-Sensitivity Matrix

The service attributes falling in the top-left quadrant must be improved, since the expectation is high and perception is low in this quadrant. The service attributes falling in the bottom-right quadrant must be deemphasized, since the expectation is low and perception is high in this quadrant, which means the organization is over-performing in these attributes. The service attributes falling in the bottom-left quadrant must be maintained since both the expectation and perception are low in this quadrant. Care should be taken in analyzing the attributes falling in the top-right quadrant, since both expectation and perception are high in this quadrant, certain attributes need to be improved and some other need to be deemphasized. The gap value may be used to identify the attributes to be improved or deemphasized. The attributes with positive gaps has to be improved and those with negative gaps need to be deemphasized.

Table 4. Report for Gap Analysis

Sl. No.	Code	Service Characteristics	Expectation Weighted Score	Perception Weighted Score	Service Gap
1	A1	Store should have the state-of-the-art equipment	3.33	3.10	0.43
2	A2	Store should be clean and employee must appear neat	4.27	3.33	0.93
3	A3	Store should be air conditioned	3.11	2.22	1.06
4	A4	Product descriptions and its prices should be clearly indicated	4.44	3.55	0.92
5	A5	Clearly specified sales slips should be given	4.55	4.44	0.17
6	A6	Store layout should	4.42	3.88	0.55

		enable consumer to move find out the goods easily			
7	B1	Store should provide the right service at the time they promise to do so	4.33	3.55	0.87
8	B2	There should always be stocks of products desired by the consumer	4.22	3.22	0.99
9	C1	Waiting time at cash counter should be short	4.33	2.99	1.44
10	D1	Employees should be informative	4.44	3.44	0.99
11	D2	Employees should be cordial and willing to help the consumers	4.44	3.77	0.73
12	E1	Operating hours of the stores should be convenient to consumers	4.03	4.15	-0.11
13	F1	A broad assortment of products and well-known brands should be available	4.02	3.44	0.55
14	F2	Store should guarantee the quality of products and ensures its freshness	4.77	3.78	1.01

From significance-sensitivity matrix it has been observed that attributes 3 (A3) and 9 (C1) lies in the top-left quadrant and hence these are the potential attributes for further improvement. Attribute A3 is the service gap for this attribute was found to be 1.07 air conditioning of the store is under the scope of the organization, which involves investment. Hence the requirement was conveyed to the organization’s management. Attribute C1 is the service gap for this attribute was found to be 1.44, which was taken for further analysis for improvement. Most of the consumers felt the waiting time at cash counter was more, especially at peak hours. Out of the service attributes which fell in top-right quadrant, two service attributes namely F2 and B2 needs to be concentrated since it has got a high value of service gap. From the gap analysis it was observed that the store is performing well in the service attributes E1 got a negative gap value (-0.11), which means that the store is providing more than what is expected. The consumers are very much satisfied with the service attribute A5 as the service gap was found to be 0.17.

**CONCLUSION**

In this study we have developed SERVQUAL model, composed with fourteen items for measuring the service quality levels of a perishable product retail outlet in Chennai city under five dimensions of service quality and one category to understand level of service quality related to products. Based on the study and results the following conclusions were drawn.

- The gap analysis results revealed that the positive values for thirteen characteristics and negative value for one service characteristic.
- The result clearly shows that, the apparent service quality is below the expected service quality in most of the service characteristic.
- The consumers were very much satisfied with the operating hours of the store and the detailed sales slips given by the store.
- Potential area for improvement is reducing the waiting time at cash counters, especially at the peak hours and many consumers felt that it would be better if the stores are air conditioned.
- Other areas which are to be concentrated for improvement are ensuring the freshness and quality of the products at the store and availability of the products in the stores which are desired by the consumers.

For future work, the information gathered from this study may provide valuable input for the management of the retail store to improve the level of service quality and the overall satisfaction of the consumers.

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