This chapter outlines the need for the study, the research questions, and objectives of the research, research design and methodology.

3.1 NEED FOR THE STUDY

The review of literature has thrown light on the need to provide high quality service which acts as the differentiating variable between competing retail outlets (Parasuraman et al, 1985, 1988; Cronin & Taylor, 1992). Service quality represents an important and particularly relevant construct in virtually all service firms, especially those offering what Chase (1978) referred to as 'high customer contact' services. Customers are more likely to generate favourable evaluations of service encounters, experience higher satisfaction, and increase their purchases and the frequency of their future visits when high quality service is delivered (Borucki & Burke, 1999).

The Review of Literature throws light on the fact that the SERVQUAL is the most used instrument for measuring service quality in a variety of contexts across service industries and across cultures. The SERVQUAL + uses the same battery of 22 scale items as the SERVQUAL; the only difference being in the measurement of expectations. The SERVQUAL + is a better instrument than the SERVQUAL in that all the criticisms by various researchers have been addressed by the authors (Parasuraman, Berry & Zeithaml, 1994) however it has not been used as widely as the SERVQUAL. The grocery retailing industry has not been widely researched for service quality as shown in the services literature. The SERVQUAL + has not been used for any study in India and grocery retail has been the subject of study in a very small way by Parikh (2005) where out of 102
samples of various retailers taken, some of them were small grocers to hypermarkets. Thus there is a gap in the services literature on use of SERVQUAL+ in grocery retailing industry to measure service quality.

As retailing is a sunrise industry for the next decade and grocery being the biggest opportunity, this service sector is going to witness tough competition and will see major changes in the structure of the industry. Growth rates for Food & Grocery stands at the lowest at 6.5% as they are necessary goods and will neither grow or decline due to growth/decline in incomes, economy or change in lifestyles. What has to be noted is that the share of organised retailing in the Food & Grocery sector grew at an unprecedented 55.2%. This reflects a major shift in buying habits of consumers who are expecting more and more services from this sector. The heavy investments made during the boom period is going to give organised retail an additional edge over unorganised retail once this economy recovers. Major challenges of the grocery retailing sector lies in retaining existing and loyal customers when the economy brightens and there is more disposable income with the consumers. One route to tackle these challenges would be improving Service Quality. The SERVQUAL+ could be an ideal instrument to help grocery retailers’ measure and diagnose existing levels of service quality and make improvements to attract and retain customers.

This study purports to use the SERVQUAL+ in the Grocery Retail setting to measure and diagnose shortfalls in service quality and help grocery retailers design strategies that fit their customer segments and retail service environments.
3.2 RESEARCH QUESTIONS

In the light of the need for this research study, the following research questions were asked.

1. What are the factors that consumers look for when buying groceries?
2. What is the impact of different retail formats, demographic factors and different cities on the perceptions of service quality of grocery retail outlets?
3. What is the impact of different retail formats, demographic factors and different cities on the Zone of Tolerance of consumers?

3.3 RESEARCH OBJECTIVES

The following are the research objectives of this study.

1. To identify the factors that influence consumers when shopping at a grocery retail store or Store Patronage Criteria (SPC)
2. To ascertain the perceptions of consumers regarding the Service Quality of Grocery Retailers
   - To analyze and compare the perception of consumers among different grocery retail formats
   - To analyze and compare the perception of consumers in different cities
   - To examine the impact of demographic characteristics of consumers on Service Quality perceptions
3. To ascertain the Zone of Tolerance of consumers regarding service quality of grocery retailers
   - To analyze and compare the perceptions of consumers relative to the Zone of Tolerance among different grocery retail formats
- To analyze and compare the perceptions of consumers relative to the Zone of Tolerance in different cities
- To examine the impact of demographic characteristics of consumers on the Zone of Tolerance of consumers

3.4 SCOPE OF THE STUDY

The scope of this study is limited to outlets that sell groceries as their main product. The study was done in two cities – Chennai and Coimbatore and two formats were used in this study – kiranas and combination stores. The study was limited to empirical testing of the SERVQUAL+ instrument (PZB, 1994) to measure Service Quality in grocery retail outlets and no instrument comparisons were made.

3.5 RESEARCH DESIGN

The research design used in the study is descriptive design. Here in this study, the service quality perceptions and expectations of consumers were described for grocery retail outlets. They were described for independent variables like age, gender, marital status, income and volume of monthly purchases of the respondents. The data collected for this research study is primary data collected through a survey where the SERVQUAL+ instrument was used to collect data on the service quality of grocery retail outlets. The survey instrument also collected details of demographic variables and retail store formats. Secondary data in terms of research reports, research articles in journals and newspaper articles were collected.

3.6 DATA COLLECTION INSTRUMENT

The review of literature has illustrated various ways in which service quality could be
measured. However, SERVQUAL+ (PZB, 1994) which used the 22 items of the SERVQUAL, to measure the perceived service quality, the desired service quality and the minimum or adequate level of service quality fulfils all norms for reliability and validity measures and was superior in terms of diagnostic value of information obtained, the difference score measures performed as well as direct measures on all psychometric criteria except predictive power thus able to identify critical service shortfalls. The SERVQUAL+ also provides separate perception ratings for maximizing predictive power. The SERVQUAL+ has not been empirically tested across service sectors.

The SERVQUAL+ (Appendix B) was used to collect data on expectations and perceptions of consumers about grocery retail outlets. The expectations as given by this instrument define expectations at two levels – the desired level of expectations and the adequate or minimum level of expectations. Respondents were required to give their separate ratings of minimum, desired and perceived service on identical, side-by-side 5 point rating scales with ‘1’ called ‘strongly disagree’ and ‘5’ called ‘strongly agree’ and the mid-points not defined. The respondents were required to give their ratings on two different levels of expectations – the minimum level of service performance that the respondent would consider adequate and the desired level of expectations which is the level of service performance the respondent believes that an excellent grocery store can and should deliver. The respondents were also asked to rate their grocery store based on their perceptions of its service performance. The perceived scale had a ‘No Opinion’ column also for respondents who did not want to give a response on an item scale.

The questionnaire also asked respondents to allocate 100 points among the five store patronage criteria (Gagliano & Hathcote, 1994) – merchandise, price, service, location
and advertising according to the importance it had for them when shopping for grocery items. This was to determine the factors most important to customers while shopping at a grocery retail store.

Personal details on age, gender, marital status, monthly family income and monthly volume of purchase of groceries were also collected from the respondents.

3.7 PILOT STUDY & INSTRUMENT VALIDATION

A pilot study was conducted in Coimbatore to test the questionnaire and ensure that the content and meanings of the item scales were easily and rightfully understood and the form was easy to complete. The researcher also wanted to know the average time it took to complete the questionnaire.

The piloted version of the questionnaire (Appendix A) used a 9 point rating scale with ‘1’ indicating ‘strongly disagree’ and ‘9’ indicating ‘strongly agree’ as in the original PZB 1994 format. The questionnaires were given to 40 shoppers at various grocery retail outlets and 10 faculty colleagues.

The respondents found the 9 point rating scale very difficult to handle and felt a smaller rating scale would be easier to complete. 19 of the 40 shoppers refused to complete the questionnaire citing the 9 point rating scale, another 8 of them marked all their responses to either 1 or 9 of the rating scale. All the 10 faculty colleagues in spite of finishing the questionnaire commented that the 9 point rating scale was time consuming. They also said that the service quality at the retail grocery stores were neither high tech nor sophisticated as in developed countries that a 9 point rating scale was needed; a 3 or 5
point scale would suffice. The respondents however were unanimous in their opinion about the ease of understanding the 22 SERVQUAL items.

A pilot retest was done with the only change being the rating scales changed to a 5 point one with ‘1’ indicating ‘strongly disagree’ and ‘5’ indicating ‘strongly agree’. The second pilot test was done with 50 new respondents. All the respondents found the 5 point rating scale much easier to respond to and were able to better reflect their extent of agreement or disagreement to the SERVQUAL items.

Reliability coefficients (alphas) were computed for the Perceived, MSS and MSA scores for each of the five dimensions - reliability, responsiveness, assurance, empathy and tangibles. All the reliability coefficients (alphas) were above 0.7 and hence indicate high internal consistency among items within each SERVQUAL dimension (Nunnally, 1978). The reliability of the difference scores ($r_D$) MSS and MSA were calculated by using a formula specially recommended for calculation of reliability of difference scores (Peter et al, 1993). Table 5 presents the reliability coefficients for the reconfigured questionnaire.

The formula for calculating the reliability of a difference score is:

$$r_D = \frac{\sigma_1^2 r_{11} + \sigma_2^2 r_{22} - 2r_{12}\sigma_1\sigma_2}{\sigma_1^2 + \sigma_2^2 - 2r_{12}\sigma_1\sigma_2}$$

where $r_{11}$ and $r_{22}$ are reliabilities of the first and second component scores, $\sigma_1^2$ and $\sigma_2^2$ are variances of the component scores and $r_{12}$ the correlation between the component scores (calculations of the $r_D$ scores are given in Appendix D).
Table 5 Reliability Coefficients (Alphas) for Service Quality Dimensions

<table>
<thead>
<tr>
<th>Dimensions</th>
<th>No. of items</th>
<th>Perceptions only</th>
<th>MSS</th>
<th>MSA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reliability</td>
<td>5</td>
<td>.84</td>
<td>.80</td>
<td>.72</td>
</tr>
<tr>
<td>Responsiveness</td>
<td>4</td>
<td>.81</td>
<td>.78</td>
<td>.74</td>
</tr>
<tr>
<td>Assurance</td>
<td>4</td>
<td>.82</td>
<td>.76</td>
<td>.73</td>
</tr>
<tr>
<td>Empathy</td>
<td>5</td>
<td>.80</td>
<td>.72</td>
<td>.77</td>
</tr>
<tr>
<td>Tangibles</td>
<td>4</td>
<td>.90</td>
<td>.74</td>
<td>.80</td>
</tr>
</tbody>
</table>

3.8 SAMPLING AND TARGET POPULATION

3.8.1 Target population

Two cities from the state of Tamilnadu – Coimbatore and Chennai were targeted for the purpose of this study. They are the two largest cities of Tamilnadu and are cosmopolitan in nature. The target population consists of all consumers who buy their bulk monthly grocery provisions from either a ‘kirana’/convenience store (otherwise called a ‘mom and pop’ store) or a combination store. The definitions for a ‘kirana’ and a combination store for the purpose of this study are given below:

Kirana/Convenience Store – stores which were less than 300 sq.ft. and where the owner along with family members or 1 or 2 employees were the only salespeople

Combination Store – large stores where grocery, food and related product lines make up about 75% and general merchandise around 25%. It is a combination of supermarket and general merchandise.

3.8.2 Sampling procedure

The sampling technique used to select a customer as a respondent was Stratified Random Sampling. The cities were divided into zones/strata as given by the zone map of the
respective city corporation website (Appendix E). A fixed number of respondents were chosen from each zone or strata. Every fifth kirana store was chosen. The number of combination stores in each zone were limited and were chosen till the target sample size was reached for that zone. Every 5th customer that walked into a retail outlet was selected after confirming if they were regular customers of the store as they came to shop for groceries at the retail outlets. They were also asked if they were willing to spend some time with the researcher in filling up a questionnaire.

3.8.2.1 Chennai

The city of Chennai is divided into 10 zones. From each zone 50 respondents who shopped at ‘kiranas’ and 50 respondents who shopped at combination stores were selected and the questionnaire was administered. A total of 500 respondents for ‘kiranas’ and 500 respondents for combination stores filled up the SERVQUAL + questionnaire. The filled up questionnaires were checked to see if all the columns were filled up and incomplete questionnaires were rejected. The questionnaires were also checked to see if the ‘desired’ scores were greater or equal to the ‘minimum/adequate’ scores as it is logical for the desired level of expectations to be greater or equal to minimum/adequate level of expectations, but cannot be lesser than the minimum/adequate level. All questionnaires that did not fulfil these two criteria were rejected.

The final sample size for Chennai city was as follows:

<p>| | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Kiranas</td>
<td>384</td>
<td>77%</td>
</tr>
<tr>
<td>Combination stores</td>
<td>388</td>
<td>78%</td>
</tr>
</tbody>
</table>

77% of the filled up questionnaires for kiranas and 78% for combination stores were found valid and used for final analysis.
3.8.2.2. **Coimbatore**

The city of Coimbatore is divided into 4 zones. From each zone 75 respondents who shopped at ‘kiranas’ and 75 respondents who shopped at combination stores were randomly selected and the questionnaire was administered. Since the number of zones in Coimbatore was smaller than Chennai, a larger sample size was collected from each zone. A total of 300 respondents for ‘kiranas’ and 300 respondents for combination stores filled up the SERVQUAL + questionnaire. The filled up questionnaires were checked to see if all the columns were filled up and incomplete questionnaires were rejected. The questionnaires were also checked to see if the ‘desired’ scores were greater or equal to the ‘minimum’ scores as it is logical for the desired level of expectations to be greater or equal to minimum level of expectations, but cannot be lesser than the minimum level. All questionnaires that did not fulfil these two criteria were rejected.

The final sample size for Coimbatore city was as follows:

- Kiranas: 253 (84%)
- Combination stores: 183 (61%)

84% of the filled up questionnaires for kiranas and 61% for combination stores were found valid and used for final analysis. The distribution of the sample respondents is shown in Table 6.

**Table 6: Distribution of respondents in the sample.**

<table>
<thead>
<tr>
<th>Retail Format</th>
<th>Coimbatore</th>
<th>Chennai</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kiranas</td>
<td>253</td>
<td>384</td>
<td>637</td>
</tr>
<tr>
<td>Combination store</td>
<td>183</td>
<td>388</td>
<td>571</td>
</tr>
<tr>
<td>Total</td>
<td>436</td>
<td>772</td>
<td>1208</td>
</tr>
</tbody>
</table>
3.9 DATA COLLECTION

First, it was ascertained by the researcher if the respondent was a regular customer of the store and if she/he has been purchasing his monthly bulk purchase of groceries from that store. Once this was confirmed, the respondent was asked if he/she was willing to spend 15 to 20 minutes of their time filling a questionnaire on service quality of the store they were visiting. This would help the shopkeeper improve service quality at the store. If the respondent was willing, the questionnaire was given and doubts were clarified. Once the questionnaire was filled up, it was collected back from the respondent.

The data was collected from September 2007 to February 2008 in both Coimbatore and Chennai for a total period of 6 months. Four students of Services Marketing from the MBA program were used to collect the data. They were trained on the questionnaire and on doubt handling in order to ensure that researcher bias did not occur and consistency during data collection was maintained.

3.10 DATA ANALYSIS

Data analysis was performed in five parts. Excel 2003 and SPSS version 11.0 was used for analysis. The first part presents the profiles of the sample respondents. Independent variables like the demographic variables of age, gender, marital status, monthly family income and monthly volume of purchases were tabulated for the overall sample data. Cross tabulations between the two cities and demographic variables and between retail formats and demographic variables were done to get an overall picture of respondent profiles. The second part presents the descriptive statistics – mean and standard deviation for all the independent and dependent variables under study- cities, retail formats, age groups, gender and marital status, income and volume of monthly purchases. The third
section presents the ranking of the five factors of store patronage – merchandise, price, location, service and advertising. Friedman’s test was used to test if the mean ranks given to the five factors of store patronage: merchandise, price, location, service and advertising were the same. Significance testing using ANOVA for mean scores of Store Patronage criteria was also done. The null and sub-hypotheses were:

**H01**: There is no significant difference between the mean rankings for store patronage criteria.

**H01a to H01f**: There is no significant difference between the mean rankings for store patronage criteria between cities, retail formats, age groups, gender, marital status, incomes and volume of monthly purchase.

**H02a to H02f**: There is no significant difference in Store Patronage criteria between cities, retail formats, age groups, gender, marital status, incomes and volume of monthly purchases.

**H03a to H03f**: There is no significant difference in Store Patronage criteria in Chennai between retail formats, age groups, gender, marital status, incomes and volume of monthly purchases.

**H04a to H04f**: There is no significant difference in Store Patronage criteria in Coimbatore between retail formats, age groups, gender, marital status, incomes and volume of monthly purchases.

**H05a to H05f**: There is no significant difference in Store Patronage criteria for kiranas between cities, age groups, gender, marital status, incomes and volume of monthly purchases.

**H06a to H06f**: There is no significant difference in Store Patronage criteria for combination stores between cities, age groups, gender, marital status, incomes and volume of monthly purchases.
There is no significant difference in Store Patronage criteria for male consumers between cities, retail formats, age groups, marital status, incomes and volume of monthly purchases.

There is no significant difference in Store Patronage criteria for female consumers between cities, retail formats, age groups, marital status, incomes and volume of monthly purchases.

There is no significant difference in Store Patronage criteria for single consumers between cities, retail formats, age groups, gender, incomes and volume of monthly purchases.

There is no significant difference in Store Patronage criteria for married consumers between cities, retail formats, age groups, gender, incomes and volume of monthly purchases.

The fourth section presents the tests of significance using one way analysis of variance for the five dimensions of service quality and overall service quality. This will highlight differences in the various sub-samples of the respondents thus helping firms to develop strategies that fit their respondent profiles. The following hypotheses were tested using ANOVA.

There is no significant difference in perceived Service Quality between cities, retail formats, age groups, gender, marital status, incomes and volume of monthly purchases.

There is no significant difference in perceived Service Quality in Chennai between retail formats, age groups, gender, marital status, incomes and volume of monthly purchases.
H0_{13a} to H0_{13f}: There is no significant difference in perceived Service Quality in Coimbatore between retail formats, age groups, gender, marital status, incomes and volume of monthly purchases.

H0_{14a} to H0_{14f}: There is no significant difference in perceived Service Quality for kiranas between cities, age groups, gender, marital status, incomes and volume of monthly purchases.

H0_{15a} to H0_{15f}: There is no significant difference in perceived Service Quality for combination stores between cities, age groups, gender, marital status, incomes and volume of monthly purchases.

H0_{16a} to H0_{16f}: There is no significant difference in perceived Service Quality for male consumers between cities, retail formats, age groups, marital status, incomes and volume of monthly purchases.

H0_{17a} to H0_{17f}: There is no significant difference in perceived Service Quality for female consumers between cities, retail formats, age groups, marital status, incomes and volume of monthly purchases.

H0_{18a} to H0_{18f}: There is no significant difference in perceived Service Quality for single consumers between cities, retail formats, age groups, gender, incomes and volume of monthly purchases.

H0_{19a} to H0_{19f}: There is no significant difference in perceived Service Quality for married consumers between cities, retail formats, age groups, gender, incomes and volume of monthly purchases.

The fifth section presents the Zone of Tolerance (ZOT) analysis which provides precise information about the perceived service levels across dimensions relative to the adequate/minimum and desired service levels. It also provides information on different dimensions that offer insight into the emphasis a firm should place on different
dimensions in initiating quality improvement programmes. The ZOT analysis was done for data across all the respondent groups – between cities, retail formats, age groups, gender, marital status, income, volume of monthly purchases and within cities, retail formats, gender and marital status.

3.11 CONCLUDING REMARKS

The research design was descriptive in nature, the data collection instrument chosen was the SERVQUAL+ based on the literature review, which was then pilot tested twice and validated. The target population was all consumers who buy their bulk monthly grocery provisions from either a kirana or a combination store. The sampling technique used was stratified random sampling. The two cities from where data was collected were Chennai and Coimbatore. The cities were divided into zones and a fixed number of respondents were picked from these zones on a random basis. The total sample size was 1208 with 772 from Chennai out of which 384 were from kiranas and 388 from combination stores and 436 respondents from Coimbatore out of which 253 were from kiranas and 183 from combination stores. Data was collected over a period of 6 months. Data analysis was done using cross tabulations, mean scores and standard deviation, ranking, Friedman’s test, ANOVA and ZOT analysis.