3. RESEARCH METHODOLOGY

3.1 INTRODUCTION

This chapter summarizes the research methodology used in the study. It begins with the detailed sketch of the research framework developed for testing. Thereafter, hypotheses that have been developed are presented. Further, this chapter will discuss on the structure and design of the research instrument, scales employed, and the method of data collection. Finally, the statistical tools and techniques used for analyzing collected data are also presented.

3.2 RESEARCH DESIGN

Research design refers to the overall plan of a research work [67]. It includes the set of methods and procedures that are employed to collect and analyze data pertaining to certain behaviour of the respondents. The present research is exploratory as well as descriptive in nature. Descriptive research in general describes the behavioural characteristics of the population considered for the study. The present study has employed the survey method to collect data from the respondents. Survey research method is quantitative in nature, in which the researcher administers a survey instrument to the sample or population in order to describe the attitudes, opinions, behaviour or characteristics of the population [68].

The study has been conducted in the metropolitan city of Chennai which has both traditional grocery stores and supermarkets in reasonable numbers. The reason for choosing Chennai for conducting the study is due to the population of Chennai which is presently estimated at 7.4 million and the mushrooming modern retail store formats across the city. Chennai is witnessing the entry of all types of retail stores from various players in the retail business.
3.3 SAMPLING DESIGN

A sample refers to the sub group of the population considered for the study for generalizing about the population. Sample of individuals considered for the study are the representatives of the population [68].

3.3.1 Population of the Study

A research population indicates the large and well-defined group of individuals who exhibit similar characteristics. The population for the present study includes the customers of food and grocery retail stores who had visited both traditional stores as well as supermarkets in the metropolitan city of Chennai, in the state of Tamil Nadu, India. They also represent the regular shopper of food and grocery items for their household consumption.

3.3.2 Sampling Unit

The sample for the present study includes the adult retail grocery customers who had visited traditional retail stores and supermarkets in Chennai. Sampling unit refers to every single individual who had participated in this survey.

3.3.3 Sampling Technique

Convenience sampling technique has been employed to choose the respondents for the present study. This technique is non-probabilistic in nature. This technique, as the name implies is convenient in nature. The researcher selects respondents because they are readily available and are willing to participate in the study [68].
3.3.4 Sample Size

Sample size determination is very important in any descriptive study. The general rule of thumb is to select as large a sample as possible. A larger sample size potentially leads to less number of errors [68]. However, in order to eliminate error in sample size determination, we use formula to calculate minimum sample size needed for the defined population. The formula given below has been used to arrive at the same.

\[
n = \frac{Z^2 \cdot p \cdot (1-p)}{c^2}
\]

where,
Z = Z value (2.03 for 99% confidence level)
p = probability of choosing an alternative, (0.5)
c = confidence interval (e.g., .04 = ±4)

Based on the above formula, for 99% confidence level, the probability of 0.5 and the confidence interval of .04, sample size (n) would be 644.

3.4 DATA COLLECTION PROCEDURE

The data employed in the present study is primary in nature. The responses have been collected for a period of six months. Data collection has been done by self-administering the structured questionnaire developed based on previous studies and focus group interviews. Data has been collected from the respondents either at their residence or at their work place. Respondents have been asked to recollect their experiences they had with traditional retail stores and supermarkets while buying food and grocery items. A total of 900 useful responses have been collected from customers by following the above procedure.
3.5 RESEARCH QUESTIONS

The present study attempts to answer the following questions:

- What is the role of consumer demographics on the retail store choice decision?
- Do the customers shop across retail formats for buying food and grocery items?
- Which retail format is preferred to shop for food and groceries most often by customers?
- Which of the retail store attributes influence the customers while making retail store choice decision?
- Which of the retail store attributes influence the attitude of customers towards retail stores?
- What is the role of shopping motives in retail store preference?
- What is the role of customer satisfaction on retail store patronage?

3.6 HYPOTHESIS DEVELOPMENT

Based on the research evidences, this study attempts to examine the relationship between store attributes and store format choice as well as attitude of customers towards retail store types. The role of shopping motive and consumer demographics is also examined in this study. In addition, the mediating role of customer satisfaction between attitude towards retail store and repatronage intention is also examined. Thus, the following hypotheses have been developed:

H1: Consumer demographics has a significant impact on retail store format preference of customers

H1a: Gender has a significant impact on retail store format choice of customers
H1b: Marital status has a significant impact on retail store format choice of customers
H1c: Age has a significant impact on retail store format choice of customers
H1d: Educational qualification has a significant impact on retail store format choice of customers
H1e: Occupation has a significant impact on retail store format choice of customers
H1f: Monthly household income has a significant impact on retail store format choice of customers
H1g: Family size has a significant impact on retail store format choice of customers

H2: There exists a significant relationship between the dimensions of store attributes and store format choice of customers
   H2a: Product has a significant relationship with the store format choice of customers
   H2b: Price has a significant relationship with the store format choice of customers
   H2c: Location has a significant relationship with the store format choice of customers
   H2d: Service has a significant relationship with the store format choice of customers
   H2e: Promotion has a significant relationship with the store format choice of customers
   H2f: Facility has a significant relationship with the store format choice of customers

H3: There exists a significant relationship between the dimensions of store attributes and attitude of customers towards retail stores
   H3a: Product has a significant relationship with attitude of customers towards retail stores
   H3b: Price has a significant relationship with attitude of customers towards retail stores
H3c: Location has a significant relationship with attitude of customers towards retail stores
H3d: Service has a significant relationship with attitude of customers towards retail stores
H3e: Promotion has a significant relationship with attitude of customers towards retail stores
H3f: Facility has a significant relationship with attitude of customers towards retail stores

H4: The dimensions of store attributes have a significant impact on retail store format choice of customers

H5: The dimensions of store attributes have a significant impact on attitude towards retail stores

H6: Shopping motives moderate the strength of relationship between retail store attributes and retail store preference
   H6a: Customer engagement moderates the strength of relationship between retail store attributes and traditional retail store preference
   H6b: Shopping occasion moderates the strength of relationship between retail store attributes and traditional retail store preference
   H6c: Customer experience moderates the strength of relationship between retail store attributes and supermarket preference
   H6d: Value for money moderates the strength of relationship between retail store attributes and supermarket preference

H7: The dimensions of store attributes have a significant impact on customer satisfaction of retail stores

H8: Attitude formed towards a retail store mediates the relationship between store attributes and store preference

H9: Retail store preference mediates the relationship between store attributes and re-patronage intention

H10: Customer satisfaction mediates the relationship between retail store attributes and re-patronage intention
3.7 RESEARCH INSTRUMENT

The research instrument employed in the present study is the structured questionnaire. The questionnaire begins with two basic questions to understand whether the respondent is the primary shopper of the household and whether he has visited both traditional retail stores and modern supermarkets for buying food and grocery items. The structured questionnaire consists of a total of six pages (see Appendix A). The questionnaire consists of ten sections. Part one is aimed at collecting the demographic information of the respondents. Grocery shopping pattern of the respondents were measured in Part two. Part three measures the extent of influence of retail store attributes in the respondents’ choice of retail stores. Part four of the questionnaire measures the attitude of customers towards traditional retail stores. Part five measures the shopping motive for traditional retail stores. Attitude towards supermarkets are measured in Part six. Part seven measures shopping motive for supermarkets. The eighth part ranks the store attributes from one to ten. Customer satisfaction is measured in the ninth part and Re-patronage intention of customers is measured in the tenth part of the questionnaire.

3.8 MEASUREMENT OF KEY VARIABLES

The constructs used for measuring key variables have been adopted from already existing scales that measure retail consumer behaviour. These constructs have been modified based on the understanding ability of Indian retail customers Constructs for shopping motives are based on research evidences as well as focus group interviews conducted. All the items have been measured with five point Likert scale. The measures of the variables have been tested for face validity with six academicians of a private higher education institution. The various measures used in the study are presented below.
3.8.1 Independent Variables

Independent variable is the factor that stands unaffected by other variables and helps to predict the dependent variable. The present study has employed three independent variables to understand the cross shopping behaviour of customers: consumer demographics, retail store attributes and shopping motive.

3.8.1.1 Consumer demographics

The measures and scale for demographic characteristics of customers have been extracted from different studies that are more relevant to the present study. These studies include: Crask and Reynolds (1978); Zeithaml (1985); Arnold (1997); Fox et al. (2004); Carpenter and Moore (2006); Carpenter (2008); Prasad and Aryasri (2011).

3.8.1.2 Retail store attributes

The measures and scale for retail store attributes have been adopted from various studies. The measures have been redesigned to be more relevant, meaningful and easy to understand for Indian retail customers to get their response. Similarly, studies conducted across the countries measured the agreement or disagreement of a customer towards the importance of retail store attributes on their choice of retail store or frequency of visit to a store (5 – strongly agree to 1 – strongly disagree). In the present study, the scale has been redesigned to understand the extent of their agreement that a particular store attribute influenced their shopping behaviour (5 – to a great extent to 1 - to a little extent). The constructs pertaining to retail store attributes have been considered from various studies that include: Lindquist (1974); Baltas and Papastathopoulou (2003); Sinha and Banerjee (2004); Yoo and Chang (2005); Carpenter and Moore (2006); Pan and Zinkhan (2006); CheWel, et al. (2012).
3.8.1.3 Shopping motives

The present study has considered four different shopping motives to predict the dependent variable. Different shopping motives have been employed for the two types of retail stores considered in the study. The shopping motives considered for traditional stores as well as supermarkets are based on different rounds of focus group interviews conducted among various groups of customers. A total of seven statements each pertaining to traditional retail stores and eight statements each pertaining to supermarkets are finalized for further analysis.

3.8.2 Dependent Variables

Dependent variable, as the name indicates is dependent on other independent factors. The value of a dependent value is predicted by independent variables. Dependent variables used in the study include, retail format selection, attitude towards retail stores, customer satisfaction and re-patronage intention.

3.8.2.1 Store format choice

Retail format selection is measured using a five-point scale (Always = 5, usually = 4, Often = 3, Sometimes = 2, Rarely = 1) that measured the preference of traditional retail stores and supermarkets by customers for buying food and grocery items.

3.8.2.2 Attitude towards retail stores

The variable, attitude towards retail stores, measured using Likert-type items ranging from 1 = Disagree to 5 = Strongly agree has been developed based on focus group interviews allowing the members to freely express their
attitude towards traditional retail stores and supermarkets based on their preference to shop from a store. Four statements each for attitude towards traditional retail store and supermarket are employed in the study.

3.8.2.3 Customer satisfaction

The extension of this study measures customer satisfaction and re-patronage intention of customers. The measures for customer satisfaction have been adopted from Koo (2003) and Hsu et al. (2010). The items were measured using five-point Likert scale (5 – Strongly agree, 4 – Agree, 3 – Neutral, 2, Disagree, 1 – Strongly disagree).

3.8.2.4 Re-patronage intention

Re-patronage intention of customers towards traditional retail stores and supermarkets for buying food and grocery items have been adopted from Bloemer and Ruyter (1998), Koo (2003) and Hsu et al. (2010). These items were measured using five-point Likert scale (5 – Strongly agree, 4 – Agree, 3 – Neutral, 2, Disagree, 1 – Strongly disagree).

3.9 PILOT STUDY

Pilot study was conducted to validate the measurement scales used in the study and to refine the constructs employed for measuring key variables. Pilot study would also ensure that there is no difficulty for the participants in terms of understanding the content and time taken to fill up the questionnaire. Pilot study was conducted with a sample size of 100. Respondents were self administered with the pilot study questionnaire. Respondents did not find any difficulty in filling up the questionnaire. They were able to understand the content as well as constructs used in the study. Exploratory factor analysis and reliability test conducted on the data collected has been presented below.
3.9.1 Exploratory Factor Analysis

Exploratory factor analysis was performed on all the key measurement variables to test construct validity of the measures. Factor analysis conducted on the 20 statements pertaining to retail store attributes arrived at six factors as expected. The purpose of conducting factor analysis on all these variables is to validate the constructs and all the constructs were found to be valid. Exploratory factor analysis conducted on shopping motive was to extract factors that can be taken for further analysis. The analysis eliminated two statements from traditional retail store shopping motive and one statement from supermarket shopping motive. Based on the feedback from the participants in the pilot study, few minor changes were incorporated and the questionnaire shown in Appendix – A was finalized for further analysis.

Factor analysis is conducted to extract the factors, which are the underlying constructs that describe a set of variables [69]. The first step in factor analysis is to decide which factors to retain based on face validity. However, SPSS default will retain all factors with an eigen value larger than 1.0. While conducting factor analysis in SPSS, first we check for KMO (Kaiser-Mayer-Olkin) and Bartlett’s test. The Kaiser-Mayer-Olkin test is a measure of sample distribution adequacy and should be greater than 0.8. Bartlett’s test of sphericity, which is a measure of multivariate normality of distributions, should be significant (<0.5).

Principal components analysis is used to analyze total variance explained by each factor. Varimax rotation is chosen for further interpretation and to obtain high and low factor loadings on factors. If the given sample size is more than 100, a factor loading of 0.40 or higher is considered for a construct to be a part of the measurement variable [70]. However, in the present study, the statements with factor loadings below 0.5 were dropped and factor analysis allowed running again.
3.9.1.1 Factor analysis for retail store attributes

Attributes of a retail store were measured using twenty statements in the Indian retail context. The twenty statements derived from various research studies were considered for factor analysis in order to ascertain the construct validity of items.

<table>
<thead>
<tr>
<th>Factor</th>
<th>Statement</th>
<th>Factor Loading</th>
<th>Eigen Value</th>
<th>% of variance</th>
<th>Cumulative % of variance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Service</td>
<td>S4 - Shorter waiting lines/fast check out</td>
<td>.781</td>
<td>3.244</td>
<td>16.218</td>
<td>16.218</td>
</tr>
<tr>
<td></td>
<td>S3 - Willingness to arrange for unavailable products</td>
<td>.779</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>S2 - Home delivery service on time</td>
<td>.740</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>S5 - Easy exchange of products</td>
<td>.724</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>S6 - Error-free billing service</td>
<td>.616</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>S1 - Adequate number of knowledgeable sales personnel</td>
<td>.573</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Facility</td>
<td>F2 - Organized display of products</td>
<td>.859</td>
<td>3.083</td>
<td>15.413</td>
<td>31.631</td>
</tr>
<tr>
<td></td>
<td>F1 - Neat and clean store</td>
<td>.829</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>F3 - Store size, design and layout</td>
<td>.816</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>F4 - Availability of parking facilities</td>
<td>.727</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
From the above analysis, it is found that the KMO measure of sampling adequacy is 0.834 which is closer to 1. A total of six factors were extracted by the principal component analysis method using varimax rotation based on their eigen value. The components were named “Product”, “Price”, “Location”, “Service”, “Promotion” and “Facility”. All the six factors together explain 71.5 per cent of the total variance (Table 3.1).
3.9.1.2 Factor analysis for traditional store shopping motives

Factor analysis was conducted for a set of seven variables intended to measure shopping motives for traditional retail store. The purpose of running an exploratory factor analysis for the items is to eliminate irrelevant constructs and extract factors pertaining to traditional retail store shopping motives.

Table 3.2 Factor Analysis for Traditional Store Shopping Motives

<table>
<thead>
<tr>
<th>Factor</th>
<th>Statement</th>
<th>Factor Loading</th>
<th>Eigen Value</th>
<th>% of variance</th>
<th>Cumulative % of variance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Customer Engagement</td>
<td>I chose traditional retail store as it refunds the amount if products are returned</td>
<td>.791</td>
<td>2.389</td>
<td>34.122</td>
<td>34.122</td>
</tr>
<tr>
<td></td>
<td>The shopkeeper in the traditional retail store is very friendly and courteous to all our family members</td>
<td>.764</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>I go to traditional retail store as I buy products in credit and pay later</td>
<td>.737</td>
<td></td>
<td>34.122</td>
<td>34.122</td>
</tr>
<tr>
<td></td>
<td>I go to traditional retail store as the store provides personal attention to me and my family</td>
<td>.714</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
From the above analysis, it is found that the KMO measure of sampling adequacy is 0.791 and the Bartlett’s test of sphericity to normality of distributions is found to be significant at 1% level. The principal component factor analysis conducted arrived at two components with eigen value greater than one. The components were named “Customer engagement” and “Shopping Occasion”. The two components explain a total variance of 61 per cent (Table 3.2).

### 3.9.1.3 Factor analysis for supermarket shopping motives

Factor analysis was conducted for a set of eight variables intended to measure shopping motive for supermarket. The purpose of running an exploratory factor analysis for the items is to eliminate irrelevant constructs and extract factors pertaining to supermarket shopping motives.

<table>
<thead>
<tr>
<th>Factor</th>
<th>Statement</th>
<th>Factor Loading</th>
<th>Eigen Value</th>
<th>% of variance</th>
<th>Cumulative % of variance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Shopping Occasion</td>
<td>My family members generally prefer traditional retail store for an urgent purchase</td>
<td>.801</td>
<td>1.864</td>
<td>26.633</td>
<td>60.755</td>
</tr>
<tr>
<td></td>
<td>I chose traditional retail store as I am unable to put more effort to visit supermarket</td>
<td>.729</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>I am able to buy products in small quantities in traditional retail store</td>
<td>.626</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Table 3.3 Factor Analysis for Supermarket Shopping Motives

<table>
<thead>
<tr>
<th>Factor</th>
<th>Statement</th>
<th>Factor Loading</th>
<th>Eigen Value</th>
<th>% of variance</th>
<th>Cumulative % of variance</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Customer Experience</strong></td>
<td>I prefer supermarket because it encourages family shopping opportunity</td>
<td>.759</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Supermarket provides opportunity to spend more time inside the store as compared to traditional retail store</td>
<td>.727</td>
<td>2.426</td>
<td>30.62</td>
<td>30.326</td>
</tr>
<tr>
<td></td>
<td>I go to a supermarket because it makes my shopping more convenient by providing shopping bags/trolleys, etc.</td>
<td>.727</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>I go to supermarket because it is like shopping under a single roof</td>
<td>.638</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Value for Money</strong></td>
<td>I am forced to choose a supermarket because I can use my food coupons and shopping cards only there</td>
<td>.831</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>I go to a supermarket as I make payment using debit card/credit card</td>
<td>.825</td>
<td>2.236</td>
<td>27.953</td>
<td>58.279</td>
</tr>
<tr>
<td></td>
<td>I go to a supermarket because it provides me membership/loyalty benefits</td>
<td>.672</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>I go to a supermarket as I get private brand products (own brand) at a lower price</td>
<td>.514</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
From the above analysis, it is found that the KMO measure of sampling adequacy is 0.841 which is closer to 1 and the Bartlett’s test of sphericity is found to be significant at 1% level. The principal component factor analysis arrived at two components that explain a total variance of 58 per cent. The components were named “Customer Experience” and “Value for Money” (Table 3.3).

3.9.2 Reliability Analysis

Reliability is the measure of an instrument’s consistency in producing the same result each time in the same research setting. There are two types of reliability: Chronbach’s alpha and split-half reliability. In this study, Chronbach’s alpha is employed to measure the internal consistency of various constructs.

<table>
<thead>
<tr>
<th>S. No.</th>
<th>Variable</th>
<th>Cronbach’s Alpha</th>
<th>Number of items</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Product</td>
<td>0.820</td>
<td>4</td>
</tr>
<tr>
<td>2</td>
<td>Price</td>
<td>0.870</td>
<td>2</td>
</tr>
<tr>
<td>3</td>
<td>Location</td>
<td>0.882</td>
<td>2</td>
</tr>
<tr>
<td>4</td>
<td>Service</td>
<td>0.813</td>
<td>6</td>
</tr>
<tr>
<td>5</td>
<td>Promotion</td>
<td>0.885</td>
<td>2</td>
</tr>
<tr>
<td>6</td>
<td>Facility</td>
<td>0.872</td>
<td>4</td>
</tr>
<tr>
<td>7</td>
<td>Attitude towards traditional retail store</td>
<td>0.891</td>
<td>4</td>
</tr>
<tr>
<td>8</td>
<td>Customer Engagement</td>
<td>0.789</td>
<td>4</td>
</tr>
<tr>
<td>9</td>
<td>Shopping Occasion</td>
<td>0.745</td>
<td>3</td>
</tr>
<tr>
<td>10</td>
<td>Attitude towards traditional retail store</td>
<td>0.849</td>
<td>4</td>
</tr>
<tr>
<td>11</td>
<td>Customer Experience</td>
<td>0.729</td>
<td>4</td>
</tr>
<tr>
<td>12</td>
<td>Value for Money</td>
<td>0.761</td>
<td>4</td>
</tr>
<tr>
<td><strong>Average</strong></td>
<td><strong>0.826</strong></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
From the above table (3.4), it is observed that the Chronbach’s Alpha is satisfactory and above 0.7 for all the variables as per the reference from Nunnally [71]. In general, the value of alpha varies between 0 and 1. A negative alpha value for an item indicates that the particular item measures the opposite of what the other items measure. The nearer the alpha is to 1.0, the greater is the internal consistency of measurement items in the research instrument being tested.

**3.10 DATA ANALYSIS & STATISTICAL TECHNIQUES EMPLOYED**

Data analysis has been carried out with the help of SPSS application software version 18. Responses from the customers have been properly coded to enable error free and easy data entry into the SPSS software. Data entered has been checked for completeness and error free with the available tools in the software. Data has been analyzed with the help of both descriptive as well as inferential statistics. In the second step, descriptive analysis like frequency, mean and standard deviation have been employed to understand the demographic profile of respondents and their shopping pattern. Factor analysis is then carried out on retail store attributes as well as shopping motives for traditional retail store and supermarket. Finally, inferential statistical techniques like independent sample ‘t’ test, one way ANOVA, Pearson’s correlation, multiple and step-wise regression analysis, and structural equation modeling are applied to test all the hypotheses proposed in the model. The section below describes the statistical tools and techniques employed in the study.

**3.10.1 Independent Sample ‘t’ Test**

Independent Samples t Test is a parametric test which compares the means of two different samples. It is used to determine whether there is any statistically significant difference between the means of two independent categories. The two samples should be unrelated to each other though they
share some variable of interest in common. The formula to compute the same is given below

3.10.2 Analysis of Variance (ANOVA)

The one-way analysis of variance (ANOVA) is employed to determine whether there exist any statistically significant differences between the means of three or more independent categories. It is used to compare sample means and to know if there is any evidence to conclude that the means of the respective population also differ.

3.10.3 Pearson’s Correlation Analysis

The Pearson correlation coefficient is a measure of the strength of linear relationship between two continuous variables in the study. It is denoted by $r$. Pearson’s correlation coefficient ($r$) measures the direction and strength of relationship between two metric variables.

The Pearson correlation coefficient ($r$) takes a range of values between +1 and -1. A value, 0 indicates that there is no relationship among the two variables considered for study. A value, greater than 0 indicates positive association between variables. That is, if the value of one variable increases, the value of other variable also increases. A value, less than 0 indicates a negative relationship. Thus, if the value of one variable increases, the value of the other variable decreases.

3.10.4 Multiple Regression Analysis

Multiple regression analysis is used to find out the impact of independent variable on the dependent variable. It is a parametric test and employs more than one independent variable to predict the dependent variable. The variables
which are independent are also called predictor variable and the variable that is dependent is also called criterion variable.

3.10.5 Step-Wise Multiple Regression Analysis

Step-wise Multiple Regression Analysis is used to simultaneously regress more than one independent variable to find out their impact on the dependent variable. In step-wise regression, the most important predictor variable enters the model first and the least important enters the model at the last. In this analysis, only one variable enters the model at a time and the other variables remain excluded. The number of models is based on the number of predictor variables that impact the dependent variable.

3.10.6 Structural Equation Modeling

Structural Equation Modeling (SEM) is a multivariate statistical analysis that is employed to analyze multiple relationships between variables at a time. It combines the techniques of factor analysis and multiple regression analysis in a single analysis. SEM employs a conceptual model and represented by path model that captures multifaceted and dynamic associations between a set of observed and unobserved variables. The variables used in the study include: endogenous variables and exogenous variables. The endogenous variables are similar to dependent variables used in regression analysis. Exogenous variables are similar to the independent variables used in regression analysis.
### 3.10.7 Summary of Statistical Techniques Employed

The table (3.5) below summarizes the statistical techniques employed as well as part of the questionnaire that would be tested using the identified technique.

**Table 3.5 Summary of Statistical Techniques Employed**

<table>
<thead>
<tr>
<th>S. No.</th>
<th>Analysis</th>
<th>Statistical Technique</th>
<th>Part of the questionnaire</th>
<th>Objective</th>
</tr>
</thead>
<tbody>
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<td>1</td>
<td>Descriptive</td>
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<td>To examine the demographic mix of customers and their shopping pattern</td>
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<td>2</td>
<td>Construct validity</td>
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<td>To ensure that a large number of observable instances measure an unobservable construct.</td>
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<tr>
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<td>One way analysis of variance</td>
<td>ANOVA</td>
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3.11 OPERATIONAL DEFINITION OF VARIABLES EMPLOYED IN THE STUDY

3.11.1 Store Attributes

Store attributes is a collective phenomenon of the attributes like product, price, location, customer service, promotion and facility of a retail store as understood by the customer based on their experience with the store. It is measured by taking the average of all the individual attribute means rated by customers in the study.

3.11.1.1 Product

The attribute, product refers to the offerings of the retailer in terms of variety, assortment, quality, freshness and according to local needs of customers. This is measured by taking the average rating of all the four items under it.

3.11.1.2 Price

Price refers to the low price of the products compared to other retail stores as well as less than a product's maximum retail price. Price is measured by calculating the average rating of items under study provided by respondents.

3.11.1.3 Location

Location refers to a retail store's proximity as well as accessibility from the residence of a retail customer. Location is measured by taking the average rating of the items under it.
3.11.4 Customer service

Customer service refers to those services provided by the employees of the store in terms of on-time door delivery, willingness to arrange products that are unavailable, error free billing service, faster check out at billing counters and easy exchange of products.

3.11.5 Promotion

Promotion refers to those activities of a retailer that are aimed at providing special discounts and offers to customers and accepting vouchers and coupons for redemption.

3.11.6 Facility

Facility of a store refers to the neat and clean store environment with an impressive layout design and product display in addition to the availability of parking facilities. It refers to the store environment in which the retailer offers service to the customers.

3.11.2 Shopping Motives

Shopping motives are those factors that stimulate a customer to shop from a particular retail store for buying food and grocery items. Shopping motives may vary depending upon the shopping premises of retail customers. The shopping motives considered in the present study are based on the responses of the focus group.
3.11.2.1 Customer Engagement

Customer engagement refers to the personalized and friendly approach of a shopkeeper as well as his willingness to accept payments on a later date and refund the money if the product is returned after purchase. It refers to the overall engaging attitude of the shopkeeper that stimulates a customer to buy from a particular shop.

3.11.2.2 Shopping occasion

Shopping occasion are those discrete events like urgent shopping, not willing to put more effort for shopping and wanting to shop in smaller quantities as and when the need arises. Customers may prefer to shop from a particular store on various occasions.

3.11.2.3 Customer experience

Customer experiences are those entertaining moments for customers like spending more time inside a store with family as they get to see more products under a single roof and convenience of shopping facilitated by shopping trolleys, bags, etc. It is the collective experience that the customers carry home after shopping from a store.

3.11.2.4 Value for money

Value for money indicates the monetary benefits received by a customer whenever a shopping trip is conducted by him in terms of cash less transaction, membership programs and competitively priced private label brands in a retail store.
3.11.3 Attitude towards Retail Stores

Attitudes are the developed positive emotions and behaviour of a customer towards a particular retail store based on his experiences with the store. These are measured by asking the customers to rate his experiences against various positive statements about a store.

3.11.4 Customer Satisfaction

Customer satisfaction refers to the expectation of a customer that has been met by the store's offerings and services based on his experiences with the store.

3.11.5 Re-patronage Intention

Re-patronage intention refers to the willingness of a customer to do a repeat purchase in a particular store and recommend the store to others in his acquaintance.