CHAPTER 3
RESEARCH METHODOLOGY

3.1 INTRODUCTION

The chapter deals with research methodology used for the study. The major objective of study is to analyze the influence of facts and cognition on buyer’s perception towards online and traditional promotional offer. As promotional strategy is widely accepted marketing technique used by almost all type of industries, FMCG sector is chosen for the same and from wide range of promotional techniques available, two widely used strategies of online and retail channel-‘price off’ and ‘buy & get free’ strategies are selected for current research. The study begins by exploring more than ninety literature works and it was understood that studies regarding consumer directed promotional offer, though popular in developed nations, the scope was abundant in case of India since such works were not conducted much and was even less in the case of southernmost state of India i.e. Kerala.

The existing Indian literatures concentrated on any one of promotional strategies like ‘coupon insertion’ or ‘price off’ and proceeding with analyzing whether they created consumer satisfaction or not. Exploring wide range of literature also assisted in analyzing various facts and cognitive variables that can influence buying behavior and hence this was used to develop a model connecting facts and cognitive variables as input factors and buyer’s perception and ability to recall regarding promotional offer as output or dependent variable (figure 2.1). The model discussed has taken inputs from various studies like (i) ‘Consumer Perception of Promotional Activity’ conducted by
Aradhana Krishna, Imaran Currum and Robert Shoemaker, (ii) ‘Pleasant Surprises: Consumer Response to Unexpected Instore Coupons’ by Carrie Heilman, Kent Nakamoto and Ambar Rao, (iii) Elaborate Likelihood model by Richard E. Petty and John Cacioppo and also (iv) studies conducted by Leon G Schiffman, Leslie Lazar Kanuk and Joseph Wisenblit. The reliability of input variables chosen for is tested using Cronbach’s alpha test and different analysis tools like ANOVA, Chi square, Correlation and regression using SPSS software are used to determine whether they created any influence on perception and recalling ability of Keralite’s with respect to that of promotional offers.

As the research try to analyze relationship between different independent variables with that of dependent variables like buyer’s recalling ability and buyer’s perception towards consumer directed promotional offers, it can be pointed out that the work is ‘analytical’ in nature. Besides this the research work is descriptive in nature as sample has representation from different age groups, income status, geographical locations giving a miniature model of the state of Kerala. Owing to this questionnaire (online and also using white & black paper) and survey methods were used to collect data from buyer’s of FMCG products. Consideration was taken to give representation to different categories of FMCG products like skin care representing personal care category, fabric care like detergent representing household care and branded cereal representing food and beverage sector is included in the questionnaire.

3.2 PILOT STUDY

Pilot study being a preliminary analysis to assess the feasibility and effective size required for actual research was conducted with at most care and 100 buyers of FMCG category was randomly selected from different parts of Kerala for this purpose. The buyers representing different areas of habitation including panchayat, municipality and corporation were considered and included in the pilot study. The standard deviation obtained from the analysis
of this sample is used to determine the sample size, \( n \) for research work and is given in the equation 3.1

\[
Sample Size, n = \left[ \frac{(Z \times S)}{E} \right]^2
\]  
(3.1)

Where \( Z \) = Standardized value corresponding to confidence level of 95%

\( S \) = Sample standard deviation from pilot study

\( E \) = Acceptable error of 5%

The pilot study giving a standard deviation of 0.64 limited the maximum sample size for actual research to be 629. Owing this in mind about 750 questionnaires were circulated and the received data was limited to 610 based on completeness and timely reception of questionnaire.

The variables used for pilot study is subjected to reliability test and variables with reliability greater than 0.8 were included in the actual research.

### 3.3 RESEARCH DESIGN

Research design comprises of answering decisions like ‘what, where, when, how much and by what means’ that concerns about the research cram and selection of suitable design is highly necessary as it facilitates smooth sailing of research work. The study adopts descriptive and analytical method of research design. It is descriptive in nature as the study is concerned with unfolding or explaining the characteristics of a group/ population and in this case the term ‘group’ constitutes of FMCG users in the state of Kerala. The study is also analytical in nature as it deals with analyzing the relationship that exist between various facts and cognitive variable with respect to that of dependent variable like ‘buyer’s recalling ability’ and ‘buyer’s perception towards promotional offer.'
3.4 SAMPLING TECHNIQUE

Multi stage sampling is used in the study. Socio cultural condition is almost uniform regarding people inhabiting different parts of the state. Kerala having 14 revenue districts with six corporations, 87 municipalities and 941 panchayat and can be divided into three equal parts namely the northern, central and southern part. From each, three districts can be randomly selected using lottery method viz. Kozhikode from northern region, Ernakulum from central and Thiruvananthapuram from southern part of Kerala. Each district selected is again divided into panchayat, municipality and corporation based on the extent of development enjoyed by each area and again can be subdivided into two categories based on gender (male and female), three categories based on income (high income group, medium and low income group), three categories based on size of family (large, medium and small) and three categories based on age(elderly, middle aged and younger age group) and four categories based on educational qualification. The census data with respect to the year 2015 reveals that population of the State accounts to be 34.8 million and the total population of the districts Ernakulum, Thiruvananthapuram and Kozhikode accounts to be 3.28 million, .55 million and 1.687 million respectively. The probability of occurrence of buyers of FMCG category, who are aware about online and traditional promotional offers, can be determined from pilot study and the probability where found to be 92% and 100 % respectively.

During data collection, equal consideration has been given to different nature of habitation like panchayat, municipality and corporation as this is based on regional and economic development, where panchayat represent transitional areas, municipality represent less urbanized area and corporation for more urbanized region. Similarly due account is also given to diversified groups of consumers and hence sample frame include the two gender categories, various age group and different income groups and also have varied
educational qualification. About 750 questionnaires were circulated among three districts in Kerala through Internet and also as written sheets and received data were listed to 610 based on completeness and timeliness.

3.5 INSTRUMENTATION

Questionnaire is the major tool used for data collection. Both online and offline questionnaire was send to sample selected from three districts in Kerala. The variables that were used in pilot study were initially subjected to reliability testing and those with value greater than 0.8 were made used in questionnaire.

Table 3.1: List of variables used in the study

| Factual variables | Age          |
|                  | Income       |
|                  | Family size  |
|                  | Gender       |
|                  | Educational Qualification |
|                  | Nature of habitation |
| Cognitive variables | Interest towards promotional deal |
|                    | Opinion about deal |
|                    | Open/ close mindedness |
|                    | Ability to process information |
|                    | Frequency of shopping |
|                    | Exposure to promotional offer |
|                    | Budgetary constraint |
|                    | Degree of involvement |
| Dependent variables | Recalling ability of buyer regarding promotional offer |
|                    | Buyer’s perception |
|                    | Stockpiling of same or different product |
3.6 DATA ANALYSIS PROCEDURE

Statistical Package for the Social Sciences (SPSS) version 20.0 is used for statistical analysis. Cognitive variables were represented as scaled variables and five point scales is used to code them. Statistical analysis like ANOVA, Chi square, correlation and multiple regression were implemented using SPSS software. As SPSS is used for analysis, the major attribute to be taken care is that if the P value also called as significance value provides any assessment less than .05, then the null hypothesis should be rejected and the variables under study are assumed to have association or relationship with each other.

1. ANOVA: it is the technique for checking the difference among different groups/ samples of data for homogeneity and it is applicable when multiple sample cases are involved.

2. Chi-Square: it is the statistical technique used for comparing sample variance to a theoretical variance. In the study, chi square is applied so as to test the significance of association between any two attributes.

3. Correlation: The statistical tool used for testing the mutual relationship or connection between two or more variables and it is capable of representing whether and how strongly pairs of variables are related.

4. Multiple regression: It is the statistical technique that is used to predict the value of a variable based on the value of two or more other variables. The variable that should be predicted is termed as the dependent variable and the others as independent variables. The model develops an equation which follows a pattern like:

   \[ \text{Dependent variable} = \text{Constant} + aX1 + bX2 + cX3 + dX4 + eX5 \ldots \]

   Where a, b, c, d & e are coefficient values and X1, X2, X3 etc are independent variables.

5. Discriminant Analysis: It is a statistical analysis to predict influence of categorical variable on any dependent variable. It works by creating one or more linear combinations of predictors and the discriminant analysis
represented as DF takes the form of a function as represented by the equation 3.2

\[ DF = \text{constant} + aX_1 + bX_2 + cX_3 + \ldots \]  

(3.2)

In the equation 3.2, the coefficient values are represented as a, b, c and \(X_1, X_2, X_3\) etc are independent variables that are categorical in nature.

6. Analysis using Wilk’s Lambda: Wilk’s Lambda is the test statistics that is used while reporting discriminant analysis and other multivariate analyses and is named after ‘Samuel. S. Wilks’. In discriminant analysis, Wilk’s lambda helps to analyze the influence of independent categorical variables on any dependent variable and the value may range between zero and one, where zero represents total discrimination between independent and dependent variables and as value increases, the influence also proportionately increases.

7. Structural Equation Modeling (SEM): It is a multivariate statistical analysis technique and can be represented as factor analysis, path analysis or regression model. It helps to analyze the relationship between independent and dependent variables and the current study make use of IBM Amos Graphics version 24 so as to ensure the correctness and proximity of the research model chosen for the study.

3.7 FORMULATION OF HYPOTHESIS

Hypothesis refers to a supposition that is made and it is subjected to analysis. The research model used for the study was converted into research hypothesis for analyzing the relationship existing between facts and cognition to that of buyer’s recalling ability and perception. This will be instrumental in analyzing the influence of demographic, economic, geographic variables and also cognitive variables on buyer’s perception towards promotional offers.
provided by FMCG companies. The research hypotheses formulated for the study includes:

**H1:** Consumer directed promotional offers are capable of creating elevated mood state among the buyers of FMCG category

**H2:** The likelihood of having a positive perception regarding consumer directed promotional offers (online & traditional offers like price off and buy & get free options) is higher for

a. Female purchasers/buyers than male counterpart  
b. Those buyers having larger family size  
c. Buyers in the younger age group than elder ones  
d. Having lower income than the high income group  
e. Buyer’s belonging to urban area rather than those inhabiting panchayat area  
f. Buyers who show high interest towards gifts and offers  
g. Those having positive opinion about price off and buy & get free options in online as well as traditional medium  
h. Buyers who are open minded than the close minded counterparts

**H3:** There is a positive relationship between ability to recall the online and traditional promotional offers with that of buyer’s positive perception towards the promotional strategies and former will be higher for

a. Female buyer’s than male counterpart  
b. Buyers with larger family size  
c. Buyers with lower monthly income  
d. Buyers belonging to lower age group  
e. Buyers having interest and positive opinion to gifts and offers  
f. Buyers who are open minded than close minded group
$H_4$: Elevated mood state created by traditional and online promotional offers are capable of encouraging stockpiling among the buyers

3.8 CONCLUDING REMARKS

The chapter details about research and sample design, instrument used for data collection, hypotheses formulated and also analyzing techniques used. The discussed techniques and design is used for the current research study, the same has been applied in the whole work and hence reported in other chapters.