3.1 Statement of the Problem

In an increasingly competitive market place, maintaining loyal customers is a critical challenge faced by many organisations. The recent literature on brand loyalty has identified brand experience as one such factor which helps marketers in maintaining loyal customers. So today’s marketers take special efforts to develop strategies for providing everlasting experience at every customer touch point. Conscious efforts are also taken to maintain relationships with customer as well as development of trust with the brand. Brand experience is expected to contribute to the formation of product and customer dimensions which are the major determinants of loyalty. But, even with all these efforts, it is
a known fact that not all brands succeed. So there is much more to understand about when brand experience successfully creates true loyalty and when it does not. Thus, this study tries to consider the relationship of brand experience and select product and customer dimensions on true brand loyalty.

3.2 Objectives

Based on the conceptual focus discussed and the model delineated in the previous chapter, the study continues to investigate the following set of objectives and test the hypotheses stated.

3.2.1 Major Objective

To study the hierarchy-of-effects of brand experience, brand credibility, affective commitment on true brand loyalty across varying levels of involvement.

3.2.2 Specific Objectives

1) To study the direct effect of brand experience on true brand loyalty.

2) To study the indirect effect of brand experience on true brand loyalty mediated through
   (a) brand credibility
   (b) affective commitment
   (c) brand credibility and affective commitment

3) To investigate the variation in the direct and indirect effects of brand experience on true brand loyalty under:
   (a) low and high levels of between-product-involvement;
   (b) low and high levels of between-subject-involvement;
   (c) interaction effect groups of between-product and between-subject involvement
3.3 Research Hypotheses

Based on the literature given, the following six hypotheses are formulated about the expected relationship between the variables.

**Hypothesis 1:** Higher the brand experience, higher is the true brand loyalty towards the brand.

**Hypothesis 2:** Higher the brand experience, higher is the brand credibility towards the brand.

**Hypothesis 3:** Higher the brand credibility, higher is the affective commitment towards the brand.

**Hypothesis 4:** Higher the affective commitment, higher is the true brand loyalty towards the brand.

**Hypothesis 5:** Higher the brand experience, higher is the affective commitment towards the brand.

**Hypothesis 6:** Higher the brand credibility, higher is the true brand loyalty towards the brand.

The hypotheses stated here are based on the conceptual model presented earlier. Further the researcher would like to investigate the variations in the conceptual model under high and low involvements. Thus involvement is treated as a moderator variable in this study, which is operationalized in three ways, namely between-product involvement, between-subject involvement and an interaction of between-product and between-subject involvement. Accordingly, the following hypothesis is included:
Chapter 3

Hypothesis 7: Involvement will moderate the relationships posited in the figure 2.2, thereby suggesting that those stated relationships among high involvement will be different from low involvement.

The above stated hypothesis has three sub-hypotheses, which are based on the three operationalizations of involvement and are as follows:

Hypothesis 7a: The stated relationships as given in figure 2.2 among the high involvement products will be different from low involvement products (i.e. between-product-involvement)

Hypothesis 7b: The stated relationships as given in figure 2.2 among the high involvement consumers will be different from low involvement consumers (i.e. between-subject-involvement)

Hypothesis 7c: The stated relationships as given in figure 2.2 among the six subgroups of low and high involvement consumers within products will be different (i.e. between-subject and between-product interaction groups).

3.4 Definitions

3.4.1 True Brand Loyalty

Theoretical definition:

True Brand loyalty is defined as a repeat purchasing behaviour under conditions of strong brand sensitivity. But repeat purchase behaviour under weak brand sensitivity is considered as brand inertia (Odin et al., 2001). Brand sensitivity is defined as the degree to which the brand name plays a key role in the choice process of an alternative in a given product category (Kapferer & Laurent, 1983 as cited in Odin et al., 2001).
Operational definition:

Operationally true brand loyalty is the product of repeat purchase behaviour and brand sensitivity (Odin et al., 2001). Repeat purchase behaviour is operationalized in terms of responses given by respondents for themselves about the ‘behaviour of always buying the same brand’ and ‘the behaviour of being loyal to one brand within the product class’ as obtained by using the tool developed by Odin et al.. Brand sensitivity is operationalized as the belief held by the consumer about the differences between the brands within the product class as obtained from the responses to the tool developed by Kapferer and Laurent (1983) (as cited in Odin et al., 2001). Repeat purchase behaviour is measured using a three item scale (namely RPB$_1$, RPB$_2$, RPB$_3$) proposed by Odin et al. and the brand sensitivity measured using a single item scale (namely BS$_1$) of Kapferer and Laurent (as cited in Odin et al., 2001). The product of the response of the item of brand sensitivity and the response in the three items of repeat purchase behaviour of a consumer, gives the score of true brand loyalty.

\[ TBL_1 = RPB_1 \times BS_1; \quad TBL_2 = RPB_2 \times BS_1 \quad \text{and} \quad TBL_3 = RPB_3 \times BS_1. \]

3.4.2 Brand Experience

Theoretical definition:

Brand experience is defined as “subjective internal consumer responses (sensations, feelings and cognitions) and behavioural responses evoked by brand related stimuli that are part of a brand’s design and identity, packaging, communications and environments” (Brakus et al., 2009).

Operational definition

Operationally, this concept is measured in terms of its four dimensions namely sensory, affective, intellectual and behavioural. The sensory dimension
refers to visual, auditory, tactile, gustative and olfactory stimulations provided by the brand. The affective dimension refers to feelings and emotions induced by the brand. The intellectual dimension refers to the ability of the brand to evoke the consumer’s convergent and divergent thinking. The behavioural dimension includes the bodily experiences, lifestyle and physical action induced by the brand (Brakus et al., 2009; Iglesias et al., 2011; Zarantonello & Schmitt, 2010). Brand experience concept is measured using the scale developed by Brakus et al. (2009).

3.4.3 Brand Credibility

Theoretical definition:

‘Brand credibility is defined as the believability of the product information contained in the brand, which requires that consumers to perceive the brand as having the ability (i.e. expertise) and willingness (i.e. trustworthiness) to continuously deliver what has been promised’ (Erdem et al., 2006; Erdem & Swait, 2004).

Operational definition:

Brand credibility has been operationalized in terms of two dimensions, namely trustworthiness and expertise. Trustworthiness implies that a brand is willing to deliver what is promised, while expertise implies that it is capable of delivering (Erdem & Swait, 1998). Thus the responses given by the respondents for themselves about the brand that they own/use on the perceived attributes such as ‘delivers its promises’, ‘believability in claims and advertisements’, ‘trustable name’, ‘using technology to deliver better product’, ‘competent and knowledgeable’. The measurement is done by using the scale adapted from Erdem and Swait (1998). It is treated as a one-dimensional
variable in this research following the suggestion given by Erdem et al. (2006).

3.4.4 Affective Commitment

*Theoretical definition:*

‘Affective commitment is the degree to which a customer identifies and is personally involved with a company’ (Bendapudi & Berry, 1997; Garbarino & Johnson, 1999; Johnson et al., 2006; Morgan & Hunt, 1994).

*Operational definition:*

Affective commitment has been operationalized in terms of the responses given by the respondents for themselves about the brand they use/own. The respondents have proposed perceived attributes such as ‘continuing relationship’, ‘belief that manufacturer is interested in the way I use the product’, ‘providing feedback’ and ‘arranging events to show new products’. These attributes would reflect the perception held by the respondent about the attachment that he/she has towards the brand/manufacturer. Affective commitment is measured using the scale developed by Johnson et al. (2006).

3.4.5 Involvement

*Theoretical definition:*

Involvement with a product is defined as ‘perceived relevance of a product class, based on the consumer’s inherent needs, interests and values’ (Zaichkowsky, 1985, p.342).

*Operational definition:*

This study focuses on true brand loyalty, which is considered as a long lasting behaviour. Hence this study has considered enduring involvement. This
involvement is operationalized in three different ways. First, in terms of products, where they are classified into low and high involvement products; second, in terms of subjects’ perceived relevance, and third, as an interaction of subject and product based involvement.

Product involvement:

FCB (Foote Cone & Belding) developed a comprehensive communication model known as FCB grid (Vaughn, 1980) based on the traditional consumer response theories (Kotler, 1965) and hierarchy-of-effects model (Vaughn, 1986). This model proposed a grid, which classifies the products based on ‘low-high involvement’ and ‘think-feel’. FCB grid was later modified by Rossiter and Percy incorporating awareness instead of ‘think-feel’, which is known as Rossiter-Percy Grid (Rossiter, Percy, & Donovan, 1991). As categorized in these grids, car was selected as a high involvement product and toothpaste a low involvement product (Laurent & Kapferer, 1985; Rossiter et al., 1991). Apart from these two products, mobile phone handset was selected as a product whose involvement is between car and toothpaste (Nkwocha et al., 2005). This method of classifying involvement is referred as between-product involvement in this study. Such an approach of operationalizing product involvement based on product categories was adopted by (Amine, 1998b; Assael, 1998; Chaudhuri, 1998, 2000; Dick & Basu, 1994; Jensen & Hansen, 2006; Kim et al., 2008).

Subject involvement:

The second operationalization of involvement is based on subject (or consumer), reflecting the perceived relevance depending on his or her values and needs. Operationally subject involvement is the degree to which the
product is related to the individual’s self-image, or the pleasure received from thoughts about or the use of the product (Higie et al., 1991; Richins & Bloch, 1986; Zaichkowsky, 1985). This also reflects the hedonic and self-expression components as conceptualized by Higie and Feick (1989) and Laurent and Kapferer (1985). Subject involvement is measured using the 10-item scale of enduring involvement developed by Higie and Feick (1989) which is a modified scale of Zaichkowsky (1985). The sum of the responses of these 10 items is categorized into high-involvement and low-involvement, based on the centre of the scale. This involvement is referred to as between-subject involvement in this study. Thus both between-product and between-subject involvement consider involvement as high and low.

**Interaction of between-subject and between-product involvement:**

The third operationalization of involvement is based on the view of Chaudhuri (2000), Nkwocha et al. (2005), Zaichkowsky (1994). According to them, involvement is the result of an interaction of the person with the product. Researches based on this approach have considered products belonging to different levels of product-involvement and considered the subjects’ involvement within these products (Chaudhuri, 2000; Nkwocha et al., 2005). Thus for the purpose of the study within each product (car, mobile phone handset, and toothpaste) the subjects will be classified into low and high based on the between-subject-involvement score.

### 3.5 Scope of the Study

Through the scope of the study, the researcher is trying to define the boundaries of this research with respect to time, place or location, population and source(s) from which the relevant information have been obtained.
study has considered the following products: car, mobile phone handset and toothpaste; where car and toothpaste represented high and low involvement products respectively, mobile phone handset falls in between car and toothpaste in terms of product-involvement.

3.5.1 Time Dimension

This study is cross sectional in capturing the concepts of brand experience, brand credibility, affective commitment and true brand loyalty and focuses on the hierarchy-of-effects under high and low involvement conditions. This study does not consider ‘the past’ and ‘the future’ time dimensions of the variables considered. The time span relevant for the observation in this study is from June to November 2013, the period during which actual data collection was completed.

3.5.2 Place

The study is geographically limited to the State of Kerala

3.5.3 Data Source and Data Collection

The very objective of the study is about the variation in hierarchy of effects of brand experience, brand credibility, affective commitment on true brand loyalty of high and low involved owners of car or mobile phone handset or consumers of toothpaste. So, the source of data has been primary in nature and was collected from owners and users of the said products.

Questionnaire survey is a widely accepted as an efficient tool for measuring perceptions of individual on a particular subject. The survey research method is very useful to collect data from a large number of respondents within a relatively shorter period of time. The cost implications
are also less compared to other methods of data collection. The questionnaires were distributed to the eligible respondents both in person and through the online survey portal, SurveyMonkey.

3.6  Population
3.6.1 Products Selected

As mentioned earlier, the hierarchy of effects by the antecedent variables on the outcome variable were compared, by design, across variations in degree of involvement of consumers. Cars, mobile phone handsets and toothpaste were adjudged by experts as representing descending degrees of involvement in that order. This also ensured that only search and experience goods are included in the study.

‘Search goods’ are products or services whose usefulness can be verified even before the purchase and ‘experience goods’ are products or services whose usefulness can be verified only after the consumption (Arora, 2006; Srinivasan & Till, 2002). The third category, ‘credence goods’ can be defined in the following manner. ‘Credence goods are products or services whose usefulness or necessity to the buyer is better known to the seller than to the buyer. The information asymmetry implied, often persists even after the credence good is consumed’ (Fong, 2005). Moreover, it would be costly for a consumer to judge the attribute, even after consumption (Hahn, 2004). In case of such products, it is likely that the product credibility could lead to its consumption or experience. Therefore, the study excluded credence goods per se.

3.6.2 Socio-Economic-Classification Included

This research had used The Market Research Society of India – Media Research Users Council - 2011 (MRSI & MRUC, 2011) classification criteria for
SEC. Operationally Socio-Economic-Classification is defined in terms of educational qualification of the chief earning member of the household and the number of consumer durables owned by the family. The list of consumer durables owned is a predefined list of 11 household items namely electric connection, ceiling fan, LPG stove, two wheeler, colour television, refrigerator, washing machine, personal computer/laptop, car/jeep/van and air conditioner. The educational qualification is classified into seven groups namely, Illiterate, Literate but no formal schooling or done schooling up to 4 years, attended school for 5 to 9 years, SSC/ HSC, attended some college (including diploma) but not Graduate, Graduate or Post Graduate (General), Graduate or Post Graduate (Professional). Based on these two variables, a family could be classified into one of the 12 categories of SEC namely A1, A2, A3, B1, B2, C1, C2, D1, D2, E1, E2 and E3 as per the new system (MRSI & MRUC, 2011). The criteria for this classification are given in table A1.1, page 167. Of these 12 categories of SEC, the present study has considered only A1 and A2 which represents the highest level of SEC.

The restriction in SEC categories was enforced to ensure greater homogeneity in sample selection in order to control the variation in the conceptual model because of the possible moderation effect of SEC.

Population defined: Thus the population for the study is defined as owners of the car, mobile phone handset or consumers of toothpaste, who belong to A1 and A2 categories of Socio-Economic-Classification (SEC) and residing in the state of Kerala.

3.7 Basic Research Design

The study is descriptive cum explanatory in nature. The study is descriptive as it tries to portray the characteristics of loyalty, commitment, credibility,
brand experience and involvement for the three products selected namely car, mobile phone handset and toothpaste. The study also looks into the precedent-outcome relationships between brand experience and its consequences like credibility, commitment and loyalty and also investigates the direct and indirect effect of brand experience on loyalty. Further, it tries to look into the variation in the direct and indirect effects of brand experience and is thus explanatory also in character.

3.8 Sampling Design

As per the definition of population, the researcher needed to take samples from owners of cars, mobile phone handsets and users of toothpastes who belonged to A1 and A2 categories of Socio-Economic-Classification (SEC) residing in the state of Kerala, India. Since the source list (sampling frame) for such a population is non-existent, it was decided to proceed with non-probability sampling method for this study.

3.8.1 Sampling Method and Sample Size

The researcher has used quota sampling method where quotas were specified for the owners or consumers of the products selected. Product formed the major criteria for quota as it is the focus of the research. This is because the research basically focuses on the variation among the population in terms of their product involvement, as borne out by the conceptual model.

The sample size required for the study was estimated based on the focus of the study and the analysis design. The focus of this study is mainly on the variation in the influence of brand experience on its outcome variables due to involvement. The variation is assessed by using multi-group-invariance testing procedure in Structural Equation Modelling (SEM) (Byrne, 2010). SEM method
requires sufficiently large samples as it uses Maximum Likelihood Estimation (MLE) procedures. So the sample size estimation considered the requirements of SEM. There is lack of consistency in literature with respect to sample size requirements in SEM. Anderson and Gerbing (1984) found that a sample size of 150 will usually be sufficient to obtain a converged and proper solution for models with three or more indicators per factor. Boomsma (1982) recommended a sample size of 400, while Bentler and Chou (1987) suggested that a ratio of 5 subjects per variable would be sufficient for normal and elliptical distributions, when the latent variables have multiple indicators and that a ratio of at least 10 subjects per variable would be sufficient for other distribution (Schumacker & Lomax, 2004). Muthén and Muthén (2002) suggests a sample size of 315 when data is non-normal and has missing values and a sample size of 150 when data is normal and is without any missing values based on a Monte-Carlo study in MLE.

Involvement under this study is construed in three ways namely between-product involvement, between-subject involvement and interaction of between-product and between-subject. Under the first operationalization, between-product-involvement three products are selected. The study tries to explicate the variations in influence of brand experience on outcome variables across these three products. In the second operationalization, subjects (respondents) will be categorized into two groups, namely low and high for between-subject involvement groups and the variations in influence across the groups are assessed. In the third operationalization, subjects (respondents) are categorised into low and high groups for each product. This process will result in six sub-groups in the sample namely, car-low, car-high, mobile-low, mobile-high, toothpaste-low and toothpaste-high. Further, the study tries to explicate
the variations in influence across these six groups. Thus the conceptual model needs to be tested for the variation in path coefficients in all these six sub-groups.

The variation in influence is estimated by using multi-group invariance testing procedure in SEM. The sample size in each of these subgroups must meet the minimum requirements mentioned above. Since the number of subgroups is maximum as per the third operationalization (six subgroups), this number has been considered for the sample size estimation. As per above mentioned requirements, the sample size needs to be between 300 and 400 in each of these six subgroups. Further there are two subgroups within each product. Hence the quota for each product was fixed at 1000 adding to a total sample of 3000 respondents.

3.8.2 Units of Observation

The unit of observation is an individual owner of a car or mobile phone handset or a consumer of toothpaste who also belongs to A₁ or A₂ Socio-Economic-Classification (SEC) of 2011. The unit of observation and the sampling unit are the same, for the purpose of this study.

3.9 Tools for Data Collection

3.9.1 Questionnaire Structure

The questionnaire consisted of two parts, Part A and Part B. In Part A, the statements were about the product, which includes statements of involvement towards the product and brand sensitivity. Part B began with questions about the brand name of the product they own/use and also measured the extent of agreement towards the given statements about the four
constructs namely brand experience, brand credibility, affective commitment and repeat purchase behaviour. As mentioned before, this research selected three products. Hence there were three questionnaires, one for each product. A copy of the questionnaires used for data collection is provided in appendix III.

3.9.2 True Brand Loyalty

True brand loyalty is operationalized in terms of repeat purchase behaviour and brand sensitivity. The repeat purchase behaviour was measured using a three item questionnaire of Kim et al. (2008), which is a modified version of Odin et al. (2001). The respondents were asked to indicate their agreement or disagreement to the statements on a seven point scale ranging from ‘strongly disagree’ to ‘strongly agree’. Brand sensitivity was measured using a single item questionnaire from Odin et al., which was adapted from Kapferer and Laurent (1983) (as cited in Odin et al., 2001). The respondents were asked to indicate their agreement or disagreement to the statement on a seven point scale ranging from ‘strongly disagree’ to ‘strongly agree’.

3.9.3 Brand Experience

Brand experience is operationalized as a second order variable consisting of four factors/dimensions namely sensory, affective, intellectual and behavioural experiences. The measurement of this variable was done using Brand Experience scale developed by Brakus et al. (2009). This scale consists of 12 items, measuring the four dimensions of brand experience dimensions namely sensory (3 items), affective (3 items), intellectual (3 items) and behavioural (3 items). The respondents were asked to indicate their extent of agreement with each of the 12 items listed in the questionnaire, on a 7-point scale ranging from strongly disagree to strongly agree, with midpoint 4, labelled as neutral.
3.9.4 Brand Credibility

Brand credibility was measured using a seven item questionnaire adapted from Kim et al. (2008), which is a modified version of Erdem and Swait (1998). The respondents were asked to indicate their agreement or disagreement to these statements on a seven point scale ranging from ‘strongly disagree’ to ‘strongly agree’.

3.9.5 Affective Commitment

Affective commitment was measured using a five item questionnaire derived from Johnson et al. (2006). One item for this scale was removed from the questionnaire, after its pre-testing (explained later). Accordingly this statement was removed from the questionnaire. The respondents were asked to indicate their agreement or disagreement to the statement on a seven point scale ranging from ‘strongly disagree’ to ‘strongly agree’.

3.9.6 Enduring Involvement

The subject (customer) involvement is measured using the scale adapted from Higie and Feick (1989) which is a modified version of Zaichkowsky (1985). This scale has 10 items of which the first five items measuring self-image and the remaining items measuring pleasure were obtained. The respondents were asked to mark their agreement or disagreement to each of those 10 items using a 7-point scale ranging from ‘strongly disagree’ to ‘strongly agree’ with the mid-point representing neutral position.

3.9.7 Socio-Demographic Profile

The tool for data collection also included questions for capturing the demographic profile of the respondents like gender, age, occupational status,
place of residence and socio economic classification. Measurement of Socio-
Economic-Classification was based on method suggested by MRUC and
MRSI 2011 (further details refer page 167). Questions to identify the brands
they own/use for car, mobile phone handset and toothpaste (for car and mobile
phone handset it can be either name of manufacturer or brand) were also
included.

3.10 Pre-testing of the Questionnaires

The process of pre-testing the questionnaires was conducted among a
convenient sample of 149 business/self-employed, salaried class and house
wives. Out of this sample, 50 responded to the questionnaire on car, 49
responded to the questionnaire on mobile phone handset and another 50
responded to the questionnaire on toothpaste. Out of 149 respondents,
60.4 percent belonged to A1 and the remaining in A2 group of SEC. It was also
observed that 72 percent of respondents in car were classified as high in
subject involvement, while 38.8 percent were classified as high in subject
involvement for mobile phone handset and for toothpaste 30 percent are
classified as high in subject involvement. Thus, the pilot study revealed that
probability of getting respondents who are ‘low-involved’ in the product car
was low and getting ‘high involved’ respondents in toothpaste was also low.

3.10.1 Reliability

Reliability of an instrument is the degree to which it yields a consistent
score of the variable under consideration. There are several methods to
establish the reliability of an instrument. Of all the methods, internal
consistency is the most effective method. The internal consistency of a set of
items refers to the homogeneity of items in a particular scale. Internal
consistency is estimated using a reliability coefficient called Cronbach’s Alpha (Cronbach, 1951). Cronbach’s Alpha values based on the pilot study for the tools were found to vary between 0.929 and 0.959 except for affective commitment. For affective commitment, Alpha value was found to be 0.774. A further investigation revealed that one of the item [If the (product) manufacturer were a person, I would like to have him or her as a friend] had an item-to-total correlation of -0.094, a low value. If this item was dropped the Alpha value would increase to 0.913. Thus it was decided to drop the statement, from the questionnaire and so, affective commitment was measured using 4 items. Alpha values based on the pilot study for the four dimensions of brand experience are, sensory 0.949; affect 0.952; behavioural 0.944; intellectual 0.959; for brand credibility 0.929 and for true brand loyalty 0.955. An Alpha value of 0.7 or more is considered to be the criterion for demonstrating strong internal consistency of established scales (Nunnally, 1978). Alpha value for these variables based on the final sample is reported in the chapter IV.

3.11 Generation of Data Records

The researcher distributed the questionnaires in person to the target respondents as well as through ‘SurveyMonkey’, a web-portal for conducting online survey. Questionnaires were personally distributed at business houses and households of the respondents in six districts in Kerala, Thiruvanathapuram, Kottayam, Idukki, Ernakulam, Trichur and Palakkad. Personal follow-ups were made, in case of no response. For the purpose of online survey, all three questionnaires were made available in the website of ‘SurveyMonkey’ and the URL to access one of those questionnaires along with a covering letter sent via e-mail to those listed in the database. The database of email addresses was
created from the alumni list of the post graduate Programmes of two management institutes in Kochi, Kerala and also from the personal contact list of the friends and relatives of the researcher. All those who were residing out of the state of Kerala were removed from the available database. Those who had completed the Master programme during the year 2013 were also excluded. The database obtained thus had 1830 email addresses and were sorted in alphabetical order. This database was divided into three groups by assigning first person to first group, second to the second group, third to third group, fourth person to first group and so on. Each of these group is assigned with a product, namely the first group was assigned with the product car, second with mobile phone handset and third group with toothpaste. After assigning the product, personalised emails intimating respondents about the data collection were send to all those who were in the database, from the personal email-id of the researcher. Further, a system generated URL for one product, along with a brief introduction about the survey and the research were mailed from the ‘SurveyMonkey’ online portal web-account. Three system-generated personally addressed follow-up mails were send from the web-portal, first after 3 days, second after 7 days and final one after 15 days to those who had not responded.

The questionnaire started with a question ‘do you own/use the respective product’. If the response is ‘No’, the survey ended and in such cases reallocation of product (questionnaire) was done. The product wise details of questionnaire distributed and response rate are provided in Table 3.1.
Table 3.1: Product wise details of survey method and responses collected

<table>
<thead>
<tr>
<th>Product</th>
<th>Method of survey</th>
<th>No. of Questionnaires distributed</th>
<th>No. of responses received</th>
<th>No. of invalid responses</th>
<th>No. of valid responses</th>
<th>Response rate (percent)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Car</td>
<td>Personally distributed</td>
<td>1100</td>
<td>759</td>
<td>56</td>
<td>703</td>
<td>0.639</td>
</tr>
<tr>
<td></td>
<td>Online Survey</td>
<td>610</td>
<td>420</td>
<td>22</td>
<td>398</td>
<td>0.652</td>
</tr>
<tr>
<td></td>
<td>Total for car</td>
<td>1710</td>
<td>1179</td>
<td>78</td>
<td>1101</td>
<td>0.644</td>
</tr>
<tr>
<td>Mobile Phone</td>
<td>Personally distributed</td>
<td>1100</td>
<td>739</td>
<td>83</td>
<td>656</td>
<td>0.596</td>
</tr>
<tr>
<td>Handset</td>
<td>Online Survey</td>
<td>610</td>
<td>357</td>
<td>12</td>
<td>345</td>
<td>0.566</td>
</tr>
<tr>
<td></td>
<td>Total for mobile</td>
<td>1710</td>
<td>1096</td>
<td>95</td>
<td>1001</td>
<td>0.585</td>
</tr>
<tr>
<td>Toothpaste</td>
<td>Personally distributed</td>
<td>1100</td>
<td>823</td>
<td>72</td>
<td>751</td>
<td>0.683</td>
</tr>
<tr>
<td></td>
<td>Online Survey</td>
<td>610</td>
<td>406</td>
<td>34</td>
<td>372</td>
<td>0.610</td>
</tr>
<tr>
<td></td>
<td>Total for toothpaste</td>
<td>1710</td>
<td>1229</td>
<td>106</td>
<td>1123</td>
<td>0.657</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>5130</td>
<td>3504</td>
<td>279</td>
<td>3225</td>
<td>0.629</td>
</tr>
</tbody>
</table>

The researcher distributed 5130 questionnaires in the two different methods mentioned earlier, for the three products. 3504 filled-in questionnaire were received back. A detailed examination of data resulted in deletion of 279 data records. Thus the final data set included 3225 records. This has resulted in an overall response rate of 62.9 percent. The response rate varies from 56 percent to 68 percent depending on the method adopted for the data collection for the respective product. The rejection of 279 data records was either
because the respondent is ineligible as they belong to SEC category other than A1 and A2 or their place of residence is presently out of the geographical region of Kerala State or they haven’t provided the demographic details. Further sample details are given in Chapter IV.

### 3.12 Statistical Analysis and Validation

Comparison of arithmetic means, t-test and ANOVA for comparison of arithmetic means and Structural Equation Modelling (SEM) were the statistical tools used during the analysis. In SEM, Confirmatory Factor Analysis (CFA), testing of causal structure, Sequential Chi-square Difference Tests (SCDT), Multi-group Invariance Testing procedures were used. SEM procedures have been executed using the software IBM-SPSS-AMOS-21 and other statistical analyses were done using SPSS-17. MS-Excel-2013 was also used to execute the procedures of testing variation of the conceptual model using multi-group invariance testing, in SEM.

The analysis of data was initiated from the respondent profile on the basis of socio-demographic variables like gender, age, occupational status, region of residence and socio economic classification. Analysis covered inter alia the validity and reliability of the tools used and eventually progressed to the conceptual model for testing. Further, the variations in conceptual model were explicated for the subgroups, namely between-products, between-subjects and interaction effect subgroups.