CHAPTER 3.

RESEARCH METHODOLOGY

3.1 Research Design

Churn management is a burning issue faced by telecom service providers in India. Churn management deals with two things one is predicting churn and the other is preventing churn that is customer retention. This research aims at addressing the customer retention area by taking into account a very important link between the customer and service provider and that is the retailer. So the research started by reading a lot of literature on customer retention and loyalty, and the important role of retailer in influencing customer retention. If the service provider can motivate the retailer to be loyal to him it will automatically help in customer retention as retailer can influence customer in many ways as already stated in the literature review section. The literature review helped in formation of hypothesis for the study.

As the hypothesis was on factors that will affect retailer loyalty, it necessitated finding out attributes that affect retailer loyalty towards a service provider. On the basis of other research studies and the tri component model of consumer attitude formation, twenty three attributes were identified and the same were discussed with subject experts for finalization. Questionnaire was developed on the identified attributes and the data was collected for pilot survey. SPSS was used to analyze the data (from pilot survey). The tools used were factor analysis to identify the factors. Regression analysis was then used to confirm the relationship and importance of the factors identified with retailer loyalty. The findings were then presented and discussed with subject experts. The pilot survey could clearly identify the factors. On basis of pilot survey minor modifications were made to the questionnaire and subsequently data was collected from 558 retailers for analysis. The data was subjected to factor analysis to create constructs that represent a number of attributes as factors. Factor scores were created for individual respondent from factor analysis. The findings from the research were compared with the hypotheses to draw relevant conclusions.
The flowchart of detailed research methodology is given below:
Step 1: Secondary research.
Step 2: Creation of hypotheses.
Step 3: Exploratory study to identify attributes or variables.
Step 4: Questionnaire development.
Step 5: Pilot survey.
Step 6: Primary Research.
Step 7: Data Analysis
   - Factor analysis to create factors.
   - Creation of factor scores
   - Regression analysis.

3.2 SECONDARY RESEARCH

Secondary research basically concentrated on studies related to churn management, customer retention and loyalty and influential role of retailer in customer retention.

Due to absence of literature in the Indian context especially in the telecom scenario, the secondary research was guided mainly by foreign literature. The main sources of literature came from various journals published in EBSCO, Emerald, and Proquest etc. Apart from this, relevant information has been collected from published reports in World Wide Web, management journals, books, business magazines and newspapers.

The secondary research helped in identifying unaddressed areas in managing churn and retention of customers. One of the challenges in conducting factor analysis was to identify the attributes that affect retailer loyalty. The data required for factor analysis had to be collected from retailers in terms of their response to different attributes that matter to them when it comes to being loyal towards a particular service provider. To understand these attributes, exploratory survey was done with 150 retailers. The view of these 150 retailers was collated As Key Attributes.
3.3 **Exploratory Survey**

The main objective of the exploratory survey was to understand the different attributes that will motivate a retailer to be more loyal towards a particular service provider. The attributes were derived from literature survey and with the help of Tri component model of consumer behavior. The same were crosschecked with 150 retailers in an exploratory survey. The attributes are,

1. Brand Awareness
2. Brand Preference
3. Persuasive power
4. Market Push
5. Ease of Selling
6. Innovativeness
7. Market Pull
8. Network Coverage
9. Quality of Service
10. Clarity of Schemes
11. Information on Latest Schemes.
12. Tariff Plans
13. Visibility of Merchandizing Schemes
14. Higher Margins
15. Incentive on Target Achievement
16. Freebies/Gifts
17. Other Incentives
18. Customer care
19. CSP (Cellular Service Provider) Relationship
20. Company Responsiveness
21. Feel Valued
22. Retailer's Loyalty
23. Polite Behavior
Brand Awareness

Brand awareness is the likelihood that the consumers recognize the existence and availability of a company's product or service. Creating brand awareness is one of the key steps in promoting a product. Brand awareness is an important way of promoting commodity-related products. This is because for these products, there are very few factors that differentiate one product from its competitor. Therefore, the product that maintains the highest brand awareness compared to its competitors will usually result in more sales. Thus higher rate of brand awareness equates to higher sales and also serves as an economic moat that prevents competitors from gaining more market share. Retailers would prefer to remain loyal to brands which have high brand awareness as it helps to promote those brands and increases sales for them.

Brand Preference

Brand Preference is the selective demand for a company's brand rather than a product. It is the degree to which consumers prefer one brand over another. In an attempt to build brand preference, the advertising must persuade a target audience to consider the advantages of a brand, often by building its reputation as a long-established and trusted name in the industry. If the advertising is successful, the target customer will choose the brand over other brands in any category.

Brand preference tells us about the brand loyalty a customer has toward a specific product or service. Some customers are fanatical about a certain brand and will not switch or even consider another substitute. That being said, brand loyalty is sometimes very sensitive to price fluctuations. These consumers might prefer one product to the other, but are not absolutely loyal or brand insistent. Retailer would always want to remain loyal to those brands which have a high brand preference with their customers.

Persuasive Power

Studies have shown that two-thirds of consumers trust their friends' recommendations on products over an expert's or marketer's message. Tap- ping into these brand advocates is quickly becoming one of the most pow-
erful tools in a marketer’s arsenal. The breakthrough for influencer or word-of-mouth marketing is identifying and motivating the right influencers who will talk glowingly about a product, brand or service. Identifying and motivating these key influencers is essential to the success of any relationship or word-of-mouth marketing campaign. Retailers are also one of the key influencers who can persuade the customer to go in for a particular brand.

**Market Push**

Retailers are keen to know the market push strategies being adopted by the service providers. Push marketing is when you use various activities to get your message in front of your ideal client. The marketer is in control of what the message is, how it is seen, when and where. Push marketing is where the organization develops advertising and promotional strategies that are meant to entice the prospect to buy their product or service. Here, the retailers are trying to create a sense of increased, time limited value so that the customer will come into their store to buy.

This is an important factor that plays role initially in the buying decision of the customer. Also during the subsequent stages of customer life cycle, this is the factor that influences the emotional needs of the customer. The image of the brand including the promotions and the schemes and offers offered from time to time might affect the customer’s decision to stay with the current service provider or switch to the other. According to University of Detroit Mercy, United States of America, the branding affects the emotional experience of the customer which ultimately triggers the experience of meaning, value, entertainment, caring service and belongingness and brand community. All this helps in turning the customers into loyal customers that would deliver value to the organization ultimately.

**Ease of Selling**

Retailers are happy to sell those products which are easier to sell. Some products or services of particular service providers are easier to sell than others. The major reasons for this were,
• Good demand from customers
• Price supported by good network availability in the state
• Fast processing of documents that is fast verification and activation
• Easy for Retailers to convince customers
• Satisfied customers bring new customers
• Activation of SIM card within the same day
• No network congestion providing more customer satisfaction.
• Good relationship.

**Innovativeness**

There is a direct correlation between the strength of an organization's service and device portfolio and its market position, as well as the customers' perception of the value of the company offering. Achieving the right mix of innovative devices, services that are easy to find, purchase and use, and converged service bundles – including those created by the cellular service provider's customers – goes a long way towards creating real customer satisfaction, improving the company's acquisition, loyalty and customer lifetime value.

**Market Pull**

In a marketing "pull" system, the consumer requests the product and "pulls" it through the delivery channel. It is important for a retailer that brands should have a pull factor so it becomes easy for them to sell services of that brand or company. The business school definition of pull marketing is a product that creates consumer demand to the point where they go to the stores and request it. For a retailer to be loyal to a certain brand that brand needs to have a pull factor as far as consumer demand is concerned.

**Network Coverage**

According to a report published by Ernst and Young, network and service quality play a major role in managing customer experience and churn.

Network performance and service quality usually affect customers only when their experience is negative. It has a strong impact on overall customer
behavior because customers tend to share their experiences – especially the
bad ones. If the customer demands that he wants to access services wherever he
is; the service must work well everywhere, even abroad. The
services that customers use must be secure and the applications must be
easy to use.

Quality of Service

Although price is the generic, number-one reason people churn; quality is
the second most common reason. The reason for this is due to the fact that the
wireless industry is a service industry, and the quality of the service is
what people are paying for. When it comes to churn for quality, social or
psychological, and convenience factors, however, the job of churn manager
becomes much more difficult because these areas are no longer quite so
objective. For the consumer, decisions about quality, convenience, and
social/psychological values are very personal and subjective and as such
are extremely difficult to measure, assess, and act upon.

Clarity of Schemes

Retailers prefer those service providers who co-operate with them and
motivate them a lot. Regarding schemes, mobile service providers usually
give away Easy-Recharge in place of gifts, as they feel that it will motivate
the retailers. Retailers do feel motivated most of the time by service
providers who give away gifts and cash. But sometimes there is no clarity as
to how the scheme can be implemented and the benefits of the scheme. So
the retailers want that the service provider’s sales person should explain to
them about the new schemes in advance which gives them (Retailers)
enough time to plan as to how to go for such schemes and achieve returns from it.

Information on Latest Schemes

While talking to the various retailers on why the customers churn, one of the
factors that came out was that many a times, companies come out with new
schemes and offers. The information about such schemes and offers do not reach
even the retailers well in time let alone the customers. In such a
scenario, both the retailers and customers fail to avail the benefits which otherwise might have helped retain the customers as well as retailers to reap the benefits in terms of various incentives offered.

**Tariff Plans**

India being a price sensitive market makes this factor very important. Also when we refer to other surveys conducted, such as the one conducted in Pakistan to study the customer churn in the telecom industry, it indicated the fairness of price to be the most important factor followed by voice quality and network problems. Indian customers’ psyche and their demographic profile being similar to those in Pakistan makes cost one of the most important factors to consider while preparing the questionnaire.

**Visibility of Merchandizing Schemes**

Merchandising is the act of promoting someone or something for sale in a retail store or retail setting. Merchandizing as commonly used in marketing also means the promotion of merchandizing sales, as by coordinating production and marketing and developing advertising, display and sales strategies to increase retail sales. This includes disciplines in pricing, and discounting, physical presentation of products and displays, and the decisions about which product should be presented to which customer at what time. Merchandising in a retail store might include holding promotional events, installing point-of-purchase displays, and issuing cents-off coupons.

**Higher Margins**

Margin is the amount of gross profit made when an item is sold. Margin per cent = ($ Retail - $ Cost) divided by $ Retail. For example, an item bought for $2, which sells for $3, has a margin of 33.3 per cent. Mobile phone companies have started slashing dealers' margins on recharge coupons and rejigging voice and text tariffs in certain regions — indicating that the country's beleaguered service providers are taking collective steps to fight stagnant revenues and declining profits. Leading Global System for Mobile Communications (GSM) operator - Bharti Airtel, Vodafone Essar and Idea Cellular - lowered dealer commissions on the first recharge, made with a
SIM purchase, by about 30 per cent in the Mumbai circle, over the last few weeks, a move that was emulated by other operators, including new entrants, and industry executives say the cuts are likely to be extended to other circles soon.

**Incentive on Target Achievement**

Retailers felt that it was important that service providers should incentivize them once the required target is achieved.

**Freebies/Gifts**

Retailers felt motivated when they received freebies and other gifts from the service providers from time to time. Margins are always important but they felt it helps to boost relationship with the service provider.

**Other Incentives**

Retailers also look forward to incentives other than margins, freebies, gifts like,

- Should come up with more attractive Retailers schemes
- Should give credit on Recharge vouchers and Easy-Recharge
- Should appoint new Retailers at a fixed distance, that is, there should be some amount of minimum distance between two Retailers
- Provide glow sign at the Retailers point and decorate the shop with attractive advertisements
- Increase margin on recharge vouchers.
- More good schemes for customers, which will increase sales
- Fast processing (that is verification, SIM delivery & activation)
- Should upgrade profitable retailers point as bill payment center
- Efficient distributor service
- Should keep handset stock with Retailers
- Timely availability of cards

**Customer Care**

Taking the reference of the same report by Ernst and Young, the questions for this section have been developed. Some of the customer expectations
with respect to the customer care as mentioned by Ernst and Young are as follows,

- My issues must be solved first time
- I want different service options matched to my needs
- I want proactive support
- As soon as I subscribe to a service, I want to be able to use it

Paying attention to customer service will help cellular service providers achieve differentiation and boost customer loyalty. But this is not just about call center investment for lower tier customers. Automation and self-administration can go a long way to improving customer satisfaction. A consumer may have many demands like he wants proactive support with different service options matching to his needs, that his problems must be solved first time; that as soon as he subscribes to a service he wants immediate activation. So customer care service along with automation should be able to deliver customer satisfaction

**Cellular Service Provider (CSP) Relationship**

Almost 60.3 per cent of the retailers are of the opinion that their relationship with the service provider of a particular product is one of the major driving forces behind their loyalty towards that product or service brand being sold by the retailer. Hence it is recommended that service providers should focus more on improving relationships between the retailers and the distributors.

**Company Responsiveness**

According to a major market research firm in United States of America, in the marketing of services involving high end technologies, along with the P’s of marketing (product, price, place, promotion, people and processes) there are 3 Q’s which play very important role (Quality, Quantity and Quickness). Accordingly, in telecom industry, it plays a very significant role in determining the customer’s experience as how fast his or her complaints, queries or requests or the new service orders for that matter are resolved and fulfilled respectively. In order to provide the desired experience to the customers, the
service operators ought to have the excellent business processes and operational processes at the back end.

**Feel Valued**

Retailers feel a sense of loyalty towards those brands which make them feel valued. Some examples quoted were, organizing the Retailers meeting (get together), taking retailers opinion about the local market into consideration while launching a new scheme, arranging distributors and retailers meeting at a Circle level, so that there is exchange of ideas among them, the Area Sales Manager of some service providers not limiting themselves to interacting only with distributors but also interacting with retailers, Encouraging dialogue through proper communication channel starting from the operator to the retailer and from retailer to the operator.

**Retailers Loyalty**

The Indian telecom industry is going through the phase of hyper-competition with almost twelve to fourteen service providers in most of the circles. In such a case every service provider tries to gain the other’s market share. So retailer’s loyalty is a very important aspect for the cellular service provider so as to ensure availability of products such as recharge vouchers, SIM cards etc. with all the retailers all the time to gain new customers, for retention of customers and for the expansion of distribution network in new territories.

**Polite behavior**

Consumer behavior theory suggests that personal and psychological factors do affect relationships with customers. Retailers were of the opinion that polite behavior of the sales agents, company representatives goes a long way in creating trust and goodwill about that company.

### 3.4 PRIMARY RESEARCH

The primary research was conducted on retailers in Pune. The primary research was conducted over 150 retailers on a pilot basis to validate the
questionnaire and the methodology, followed by which the actual primary research was conducted over 558 retailers.

### 3.4.1 Unit of Analysis

To define the problem, according to Zimkund (1991), researcher must define the unit of analysis. The unit of analysis specifies at what level data will be collected. The level may be an organization, a department, a work group, channel members, suppliers or individuals. If required, more than one level of unit of analysis can be used for the research. In this case the unit of analysis was the “Retailer”, the important link from whom the customer buys the prepaid services.

### 3.4.2 Sampling

Sample is a part of the population or a subset from a set of units, which is provided by some process or other usually by deliberate selection with the object of investigating the properties of the parent population or set (Beri 2008). Sampling can be defined as “the deliberate choice of a number of people, the sample, who are to provide you with the data from which you will draw conclusions about some larger group, the population, whom these people represent.” (Jankowicz, 1995). The sampling process consists of following steps (Tull, Donald, Hawkins, 1984)

1. Define the population.
2. Identify the sampling frame.
3. Specify the sampling unit.
4. Specify the sample design.
5. Determine the sample size.
6. Select the sample unit.
7. Collect the data from the sample unit

All retailers in any city can make the population for the research where the sampling unit is the retailer. The scope of the research was limited to multi-brand retail outlets in Pune city selling Prepaid Global System for Mobile
Communications (GSM) services. It was quite difficult to identify the sampling frame. Unlike other researches where a telephone directory or a map can be the sampling frame, in this case the sampling frame was a little blurred as retail outlets can be spaced across the entire city. So the city of Pune was divided into different areas (East, west, north and south) and sample was taken from each area/zone. It is difficult to undertake probability sampling design as the retailers are scattered. So Convenience sampling with quotas based on areas was preferred over probability sampling.

Determination of sample size can be made either by “Practical Approach” or “Statistical Approach”, (Beri 2008). The best method of determining the samplesize for Factor analysis is subject to item ratio (Costello, Osborne 2005). As per Ostello and Osborne, “a large percentage of researchers report factor analysis using relatively small samples. In a majority of the studies in our survey (2.9 per cent) researchers performed analyses with subject to item ratio of 10:1 or less, which is an early and still prevalent rule of thumb many researchers use for determining a priori sample size. A surprisingly high proportion (almost one sixth) reported factor analyses based on subject to item ratios of 2:1 or less”.

<table>
<thead>
<tr>
<th>Subject to Item Ratio</th>
<th>% of studies</th>
<th>Cumulative %</th>
</tr>
</thead>
<tbody>
<tr>
<td>2:1 or less</td>
<td>14.7</td>
<td>14.7</td>
</tr>
<tr>
<td>&gt; 2:1 to 5:1</td>
<td>25.8</td>
<td>40.5</td>
</tr>
<tr>
<td>&gt; 5:1 to 10:1</td>
<td>22.7</td>
<td>63.2</td>
</tr>
<tr>
<td>&gt; 10:1 to 20:1</td>
<td>15.4</td>
<td>78.6</td>
</tr>
<tr>
<td>&gt; 20:1 to 100:1</td>
<td>18.4</td>
<td>97</td>
</tr>
<tr>
<td>&gt; 100:1</td>
<td>3</td>
<td>100</td>
</tr>
</tbody>
</table>

Source - Costello and Osborne, 2005

In the present study, data is collected from 575 retailers decided a priori sample size out of which 558 were considered for final analysis. Rest 17 were rejected because of inconsistency. At a subject size of 558 for 23
attributes under investigation, the subject to item ratio stands at 24:1. So this falls under 20:1 to 100:1 as per the above table justifying approximately 78.6 per cent of the factor analysis is done with this or lower subject to item ratio.

Another method for determining the sample size is the statistical method.

**TABLE 3.2 SAMPLE SIZE**

Table 1. Sample size for ±3%, ±5%, ±7% and ±10% Precision Levels Where Confidence Level is 95% and \( P=.5 \).

<table>
<thead>
<tr>
<th>Size of Population</th>
<th>Sample Size (n) for Precision (e) of,</th>
</tr>
</thead>
<tbody>
<tr>
<td>±3%</td>
<td>±5%</td>
</tr>
<tr>
<td>500</td>
<td>A</td>
</tr>
<tr>
<td>600</td>
<td>A</td>
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<tr>
<td>700</td>
<td>A</td>
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<tr>
<td>800</td>
<td>A</td>
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<tr>
<td>900</td>
<td>A</td>
</tr>
<tr>
<td>1,000</td>
<td>A</td>
</tr>
<tr>
<td>2,000</td>
<td>714</td>
</tr>
<tr>
<td>3,000</td>
<td>811</td>
</tr>
<tr>
<td>4,000</td>
<td>870</td>
</tr>
<tr>
<td>5,000</td>
<td>909</td>
</tr>
<tr>
<td>6,000</td>
<td>938</td>
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<tr>
<td>7,000</td>
<td>959</td>
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<tr>
<td>8,000</td>
<td>976</td>
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<tr>
<td>9,000</td>
<td>989</td>
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<tr>
<td>10,000</td>
<td>1,000</td>
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<tr>
<td>15,000</td>
<td>1,034</td>
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<tr>
<td>20,000</td>
<td>1,053</td>
</tr>
<tr>
<td>25,000</td>
<td>1,064</td>
</tr>
<tr>
<td>50,000</td>
<td>1,087</td>
</tr>
<tr>
<td>1,00,000</td>
<td>1,099</td>
</tr>
<tr>
<td>&gt;1,00,000</td>
<td>1,111</td>
</tr>
</tbody>
</table>
As per the above table if the size of the population in > 1,00,000 then the sample size should be 400 with a precision of ±5 per cent Precision Levels Where Confidence Level is 95 per cent and P=.5. In the present study the sample taken was 558 retailers so as per the above table it wherein the population is >1,00,000 then a sample size of even 400 is justified hence the sample size of 558 considered for this study stands justified.

Strict rules regarding sample size for exploratory factor analysis have mostly disappeared. Studies have revealed that adequate sample size is partly determined by the nature of the data (Fabrigar et Al, 1999; MacCallum, Widaman, Zhang & Hong, 1999). In general, the stronger the data, the smaller the sample can be for an accurate analysis. “Strong Data” in factor analysis means uniformly high communalities without cross loadings, plus several variables loading strongly on each factor.

3.4.3 RESEARCH QUESTIONS

The primary research was based on few key research questions. The research questions proposed and addressed in the questionnaire are as follows,

1. What factors affect Retailer Loyalty?

   For this primary research was carried out to understand retailer’s opinion on the Identified Key Attributes. The data was collected on a scale of one to five, one being less important and five being of highest importance.

   To ascertain the retailers influence on customers for buying specific brands, following questions were asked,

   2. Do you recommend/suggest any particular brand over other brands?

   3. Do you prefer to sell a specific company’s SIM card over others?

   4. Do you try to persuade customer in case he/she does not take your suggestion in buying a SIM card.
5. In case the customer ignores your recommendation for a specific brand pushed by you,

- Offer the customer some discount/benefit/free gift
- Explain the benefits of the brand pushed by you again
- Do not interfere with the customer's buying decision

To understand the importance of margins following questions were asked.

6. If you are offered more margins/incentives for selling a new brand, will you switch to the newer brand to promote it?

7. You remain loyal to the previous higher profit brand despite higher incentives from a new brand?

3.4.4 QUESTIONNAIRE DEVELOPMENT

The questionnaire was developed on the basis of the 23 key identified attributes during the exploratory survey. For each attribute there was one question in the questionnaire and the retailers were asked to choose between one to five for every question (one being less important and five being extremely important to them)

TABLE 3.3 ATTRIBUTE QUESTIONS

<table>
<thead>
<tr>
<th>Sr. No.</th>
<th>Attribute</th>
<th>Questions</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Brand awareness</td>
<td>How important is Brand awareness of a service provider brand to you while purchasing/stocking prepaid cards or services</td>
</tr>
<tr>
<td>2</td>
<td>Brand Preference</td>
<td>Brand preference is an important factor for you to sell a specific company’s SIM card over others?</td>
</tr>
<tr>
<td>3</td>
<td>Persuasive power</td>
<td>Is persuasive power of a service provider brand important to you to try persuade customer in case he or she does not take your suggestion in buying a SIM card?</td>
</tr>
<tr>
<td>4</td>
<td>Market push</td>
<td>How important are Market push activities of operator to help you retain your customers?</td>
</tr>
<tr>
<td>5</td>
<td>Ease of selling</td>
<td>How crucial is Ease of selling a particular brand in the market to you while purchasing/stocking prepaid cards or services</td>
</tr>
<tr>
<td>6</td>
<td>Innovativeness</td>
<td>How important is innovativeness of an organization to you while</td>
</tr>
<tr>
<td>Sr. No.</td>
<td>Attribute</td>
<td>Questions</td>
</tr>
<tr>
<td>--------</td>
<td>---------------------------</td>
<td>--------------------------------------------------------------------------</td>
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<tr>
<td></td>
<td></td>
<td>purchasing/stocking prepaid cards or services.</td>
</tr>
<tr>
<td>7</td>
<td>Market pull</td>
<td>Are Market pull activities of operator important to you in retaining customers?</td>
</tr>
<tr>
<td>8</td>
<td>Network coverage</td>
<td>How important is good network coverage to retain customer base for a specific brand.</td>
</tr>
<tr>
<td>9</td>
<td>Quality of service</td>
<td>How important is quality of service to retain customer base for a specific brand</td>
</tr>
<tr>
<td>10</td>
<td>Clarity of schemes</td>
<td>How important is the clarity of schemes important to sell a specific brand to the customers?</td>
</tr>
<tr>
<td>11</td>
<td>Information on latest schemes</td>
<td>Does your decision to purchase depend on how well in advance the operator informs you about the latest schemes offered by him</td>
</tr>
<tr>
<td>12</td>
<td>Tariff plans</td>
<td>Do tariff plans influence your decision for selection of a specific SIM card/ recharge voucher/other service?</td>
</tr>
<tr>
<td>13</td>
<td>Visibility of merchandizing schemes</td>
<td>How important is the attractiveness of operator’s in-shop/outdoor visibility and merchandizing schemes.</td>
</tr>
<tr>
<td>14</td>
<td>Higher margins</td>
<td>You think margin is an important factor while purchasing/stocking prepaid cards or services of a particular service provider?</td>
</tr>
<tr>
<td>15</td>
<td>Target achievement incentive</td>
<td>The attractiveness of the incentives (By CSP) on achieving a particular target influences your decision to stock?</td>
</tr>
<tr>
<td>16</td>
<td>Freebies/Gifts</td>
<td>You think freebies or gifts are an important factor to you in remaining loyal to a particular company’s prepaid services brand?</td>
</tr>
<tr>
<td>17</td>
<td>Other Incentives</td>
<td>You think other incentives are an important factor to you to remain loyal to a particular cellular service provider?</td>
</tr>
<tr>
<td>18</td>
<td>Customer care</td>
<td>How important is the customer care service offered by various operators to you?</td>
</tr>
<tr>
<td>19</td>
<td>CSP relationship</td>
<td>How important is good relationship of Cellular service provider with you in affecting your loyalty towards that service provider’s brand?</td>
</tr>
<tr>
<td>20</td>
<td>Company responsiveness</td>
<td>You think margin is an important factor while purchasing/stocking prepaid cards or services of a cellular service provider?</td>
</tr>
<tr>
<td>21</td>
<td>Feel valued</td>
<td>You feel valued by selling the brand that gives you the maximum profits or maximum customer loyalty.</td>
</tr>
<tr>
<td>22</td>
<td>Retailer loyalty</td>
<td>Do you remain loyal to the previous higher profit brand despite higher incentives from a new brand?</td>
</tr>
<tr>
<td>23</td>
<td>Polite Behavior.</td>
<td>Polite/good behavior of operator is an important motivator for you to be more positively inclined towards his brand?</td>
</tr>
</tbody>
</table>
3.4.5 Data Collection

The first task in the data collection was to list down the retailers from where the data was to be collected. The study involved a field survey conducted across different retailers in the city of Pune, Maharashtra. The respondents, that is, the retail owners were approached at the retail shop during afternoon time as usually that time they are relatively free and were willing to answer questions. The respondents were administered a structured questionnaire. The responses were recorded using a set of 23 statements measured on an importance scale in addition to other relevant information. While selecting the retail outlets, in order to cover the entire Pune region, the city was divided into 4 zones east, west, north and South.

Areas Covered in the Survey

<table>
<thead>
<tr>
<th>TABLE 3.4 AREAS COVERED IN THE SURVEY</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Area</strong></td>
</tr>
<tr>
<td>University Circle</td>
</tr>
<tr>
<td>Atur Centre</td>
</tr>
<tr>
<td>Model Colony</td>
</tr>
<tr>
<td>FC Road</td>
</tr>
<tr>
<td>JM Road</td>
</tr>
<tr>
<td>Bavdhan</td>
</tr>
<tr>
<td>Kothrud Depot</td>
</tr>
<tr>
<td>Paud Road</td>
</tr>
<tr>
<td>Swargate (Near Bus Station)</td>
</tr>
<tr>
<td>Shivaji Road</td>
</tr>
<tr>
<td>Pashan</td>
</tr>
<tr>
<td>Baner</td>
</tr>
<tr>
<td>Hadapsar</td>
</tr>
<tr>
<td>Magarpatta</td>
</tr>
<tr>
<td>Vishrantwadi</td>
</tr>
<tr>
<td>Kondhwa</td>
</tr>
</tbody>
</table>
### Area

<table>
<thead>
<tr>
<th>Area</th>
<th>Retailers’ Distribution</th>
</tr>
</thead>
<tbody>
<tr>
<td>Budhwar Peth</td>
<td></td>
</tr>
<tr>
<td>Shukrawar Peth</td>
<td></td>
</tr>
<tr>
<td>Kasba Peth</td>
<td>128</td>
</tr>
<tr>
<td>Shaniwar wada</td>
<td></td>
</tr>
<tr>
<td>Laxmi Road</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>558</td>
</tr>
</tbody>
</table>

#### 3.5 Scope and Limitations

In Pune city there are more than one lakh retail outlets so for the purpose of study; specific areas within the city were chosen. Care was taken that the areas covered east, west, north and southern parts of the city.

- This study limits only Global System for Mobile Communications (GSM) service providers.
- The study limits only to prepaid services. Postpaid services/products are not considered for this study.
- Only multi-brand outlets were considered.
- The primary data collection will be limited to retailers in Pune city only.

#### 3.6 Analysis

The analysis of the data revolves around two types of statistical analysis, that is, Factor analysis and Regression analysis. Factor analysis tries identifying the underlining constructs that influence the responses on a number of measured variables. Factor analysis has been used to group different items or attributes into common factors that affect retailer loyalty towards a specific Cellular Service Provider. The data collected from the respondents on the 23 key identified attributes (on a scale of one to five), was converted into “factors” or “constructs” that influence retailer loyalty. So attributes or items that are close to each other in terms of respondent’s opinion tend to group together into a common factor.
Furthermore, “factor scores” were created for each respondent from factor analysis. Factor scores represent the cumulative response of a respondent for all attributes that group into a factor. Then regression analysis was done to understand the relationship between the 23 factors/constructs identified and their relationship on the variable under study, that is, retailer loyalty. Regression analysis would also determine the factors that affect retailer loyalty the most. Regression analysis is a statistical tool for the investigation of relationships between variables. Usually, the investigator seeks to ascertain the causal effect of one variable upon another- in this case the effect of 22 attributes on retailer loyalty. To explore these issues, the investigator assembles data on the underlying variables of interest and employs regression to estimate the quantitative effect of the causal variables upon the variable that they influence. The investigator also typically assesses the "statistical significance" of the estimated relationships, that is, the degree of confidence that the true relationship is close to the estimated relationship.

The outcomes of factor analysis and regression analysis helped to test the proposed hypotheses and draw relevant conclusions.

3.6.1 FACTOR ANALYSIS

Factor analysis is a collection of methods used to examine how underlying constructs influence the responses on a number of measured variables. There are basically two types of factor analysis, exploratory and confirmatory.

Exploratory factor analysis (EFA) attempts to discover the nature of the constructs influencing a set of responses. Confirmatory Factor analysis (CFA) tests whether a specific set of constructs is influencing responses in a predicted way. Both types of factor analyses are based on the Common Factor Model. This model proposes that each observed response is influenced partially by underlying common factors and partially by underlying unique factors. The strength of the link between each factor and each measure varies, such that a given factor influences some measures more than others.
Exploratory Factor Analysis (EFA)

Objectives

The primary objective of Exploratory Factor Analysis is to determine,

- The number of common factors influencing a set of measures.
- The strength of relationship between each factor and each observed measure.

Some common uses of Exploratory Factor Analysis are to,

- Identify the nature of the constructs underlying responses in a specific content area.
- Determine what sets of items hang together in a questionnaire.
- Demonstrate the dimensionality of a measurement scale.
- Determine what features are most important when classifying a group of items.
- Generate factor scores representing values of underlying constructs for use in other analyses.

Steps in Exploratory Factor Analysis

1. Collection of Data: Data (retailer response) regarding the variables (attributes) is to be collected.

2. Creation of correlation matrix: correlations between each of the variables have to be found out.

3. Selection of number of factors for inclusion: There are a number of methods to determine the “optimal” number of factors by examining the data. The Kaiser criterion states that one should use a number of factors equal to the number of the eigenvalues of the correlation matrix that are greater than one. The “Scree Test” states that one should plot the eigenvalues of the correlation matrix in descending order and then use a number of factors equal to the number of eigenvalues that occur prior to the last major drop in eigenvalue magnitude.

4. Extraction of initial set of factors: The measurements are fed to the computer program to extract the factors. There are a number of extraction methods,
including maximum likelihood, principal component and principal axis extraction.

5. Rotation of factors to a final solution: For any given set of correlations and number of factors that are usually infinite number of ways that one can define the factors and still account for the same amount of covariance in the measures. By rotating the factors, attempt is made to find a factor solution that is equal to that obtained in the initial extraction but which has the simplest interpretation. There are two major categories of rotation, orthogonal rotations, which produce uncorrelated factors, and oblique rotations, which produce correlated factors. The best orthogonal rotation is widely believed to be Varimax.

6. Interpretation of factor structure: Each of the measures will be linearly related to each of the factors. The strength of this relationship is contained in the respective factor loading, produced by the rotation. This loading can be interpreted as a standardized regression coefficient, regressing the factor on measures.

7. Construct factor scores for further analyses: Factor scores for a given factor is a linear combination of all the measures, weighted by the corresponding loading. These factor scores can then be used in analyses just like any other variable. In this research the factor scores are used for further regression analysis.

8. The most widely used method for determining a first set of loadings is the principal component method. This method seeks values of different loadings that bring the estimate of the total communality as close as possible to the total of the observed responses.

Use of factor analysis for the Analysis

- Collection of measurements: Retailer response data for the 23 Identified Key Attributes was collected from 575 respondents in the form of filling questionnaire. Out of this, 17 responses were rejected due to lack of information and 558 responses were considered for analysis.
• Creation of correlation matrix: The data was fed into SPSS software to create correlation matrix and derive communalities for each attribute and factor loadings of each attribute with the factors.

• Selection of number of factors for inclusion: After extraction of factors in a factor analysis, the researcher needs to decide how many factors to retain for rotation. The default in most statistical software packages is to retain all factors with eigenvalues greater than 1. Alternate tests for factor retention include the Scree test, Velicer’s MAP criteria, and parallel analysis (Velicer & Jackson, 1990). Unfortunately the latter two methods, although accurate and easy to use, are not available in the most frequently used statistical software tools. So, a combination of eigenvalues and the scree test was used to decide the number of factors for inclusion in the analysis.

• Selection of factor extraction method: Principal Component method was used for factor extraction and then rotation of factors was done to conclude on six factors for further analysis.

• Creation of factor scores: Factor scores were created for each respondent for each factor. Factor score for a given factor is a linear combination of all the measures, weighted by the corresponding factor loading. Regression analysis was further done to understand the relationship of the 22 attributes on retailer loyalty.

3.6.2 Regression Analysis

Regression analysis is a statistical tool for the investigation of relationships between variables. Usually, the investigator seeks to ascertain the causal effect of one variable upon another. For example, the effects of price increase upon demand, or the effect of changes in the money supply upon the inflation rate. To explore such issues, the investigator assembles data on the underlying variables of interest and employs regression to estimate the quantitative effect of the causal variables upon the variable that they influence. The investigator also typically assesses the "statistical significance" of the estimated relationships, that is, the degree of confidence that the true relationship is close to the estimated relationship.
Simple regression Analysis

In statistics, simple linear regression is the least squares estimator of a linear regression model with a single explanatory variable. The adjective simple refers to the fact that this regression is one of the simplest in statistics. The fitted line has the slope equal to the correlation between y and x corrected by the ratio of standard deviations of these variables.

Multiple regression analysis:

The general purpose of multiple regression (the term was first used by Pearson, 1908) is to learn more about the relationship between several independent or predictor variables and a dependent or criterion variable.

In this research study, the researcher wishes to identify the factors that determine retailer loyalty towards a cellular service provider. On the basis of literature review 23 key attributes or factors were identified which have an association with retailers loyalty towards a service provider.

Objectives of regression analysis

- Regression analysis helps one to understand how the typical value of the dependent variable changes when any one of the independent variables is varied, while the other independent variables are held fixed.
- Regression analysis is also used to understand which among the independent variables are related to the dependent variable, and to explore the forms of these relationships.
- In restricted circumstances, regression analysis can be used to infer causal relationships between the independent and dependent variables
- Regression may be used to measure linear relationships between more than one independent variable and the dependent variable
- If a deterministic relationship exists between two variables, x and y, any value of x that is selected will determine a unique value of y.
Steps in Regression analysis

- The 23 factors used for factor analysis were further used to test their relationship with retailer loyalty.
- Identify the independent variable and the dependent variable: Retailer Loyalty was identified as the dependent variable and the 22 attributes were identified as independent variables.
- Once the variables were identified the data was then fed into the computer in the SPSS software and regression analysis was conducted.
- Interpretation of regression analysis was done.

3.7 CONCLUSION

The methodology revolves around two types of statistical analyses, Factor analysis and Regression Analysis. Factor analysis tries to identify the underlying constructs that influence the responses on a number of measured variables. So the task was to identify the variables that influence retailer loyalty toward a particular cellular service provider and then measure retailer’s responses to those variables. The variables influencing retailer loyalty were identified from existing literature and by using the TRI component model of consumer attitude formation and the same were tested in a pilot survey to conclude 23 variables or attributes that have a broad impact retailer loyalty. Data was collected on an importance scale (one to five) from 558 retailers. The same data was analyzed using SPSS for Factor Analysis. Subsequently, factor scores were computed for analysis. Regression analysis was further carried out to confirm the relationship of the 22 factors on the main factor under consideration, that is, retailer loyalty. Regression analysis was done to confirm that a linear relationship exists between retailer loyalty and the identified factors and to establish that retailer loyalty is dependent on the 22 attributes that were identified as affecting retailer loyalty. The outcomes of Factor analysis and Regression analysis was used to test the proposed Hypotheses and draw relevant conclusions.